# Clock & Timing Products

Product Tree

## Crystals & Oscillators

- Precision Crystals
- Crystal Oscillators
- MEMS Oscillators

## Clock Management

- Clock Generators
- Jitter Attenuators
- Fanout Buffers
- Zero Delay Buffers
- PCIe Buffers
- Drivers & Receivers
- Clock Conditioning
- 555 Timers

## Network Synchronization

- Synchronous Ethernet
- IEEE1588

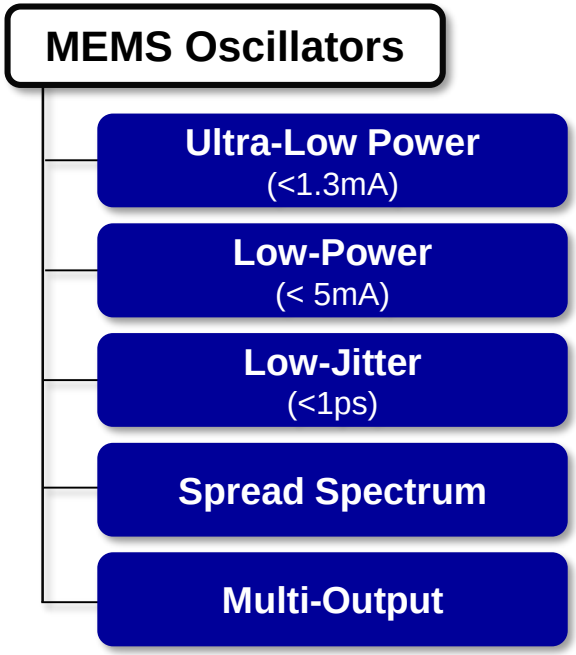
## Development Tools

- ClockWorks Configurator
- TimeFlash 2 Programming Kit

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# MEMS Oscillators

Product Tree



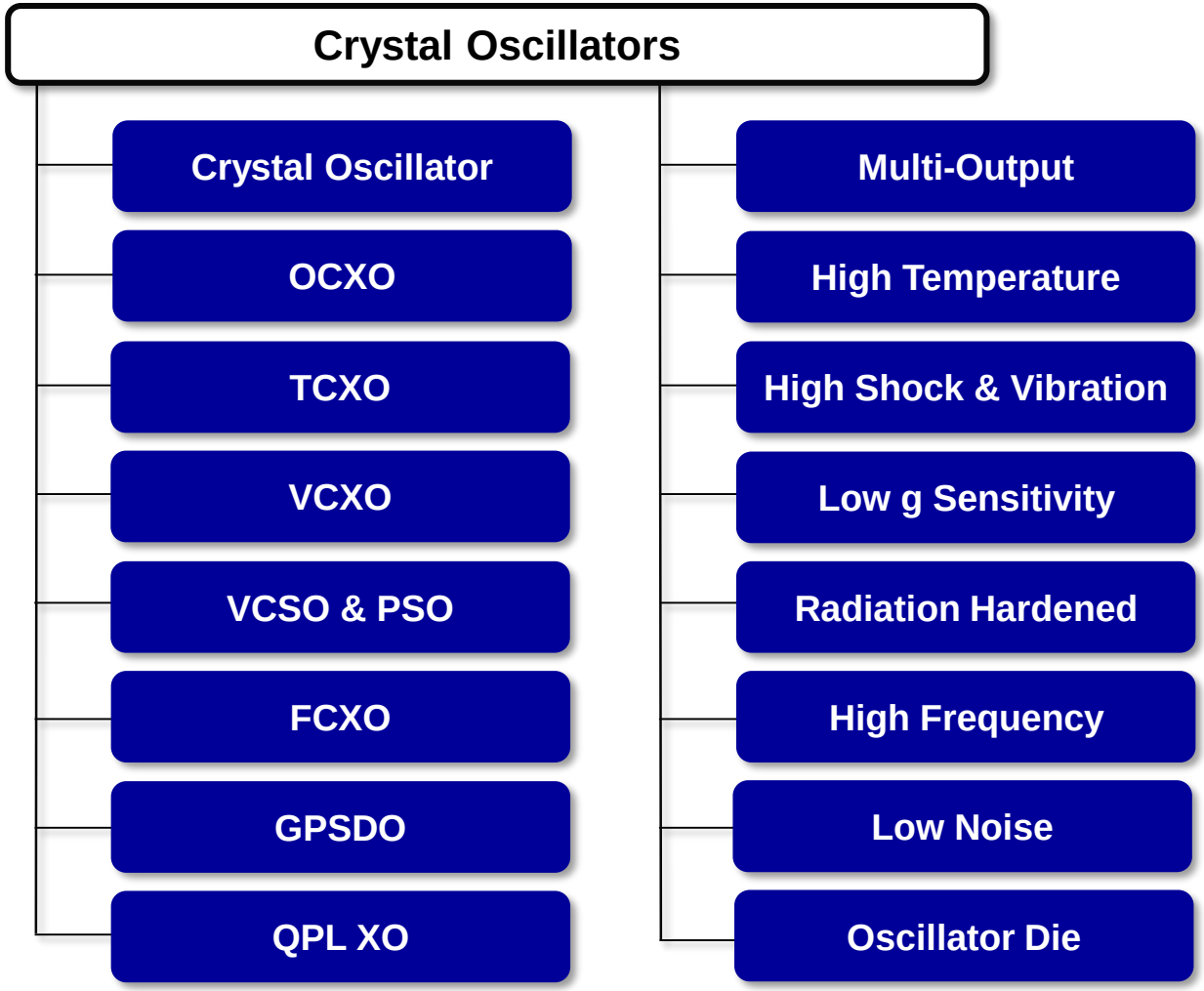

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators


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# Crystals Oscillators

Product Tree

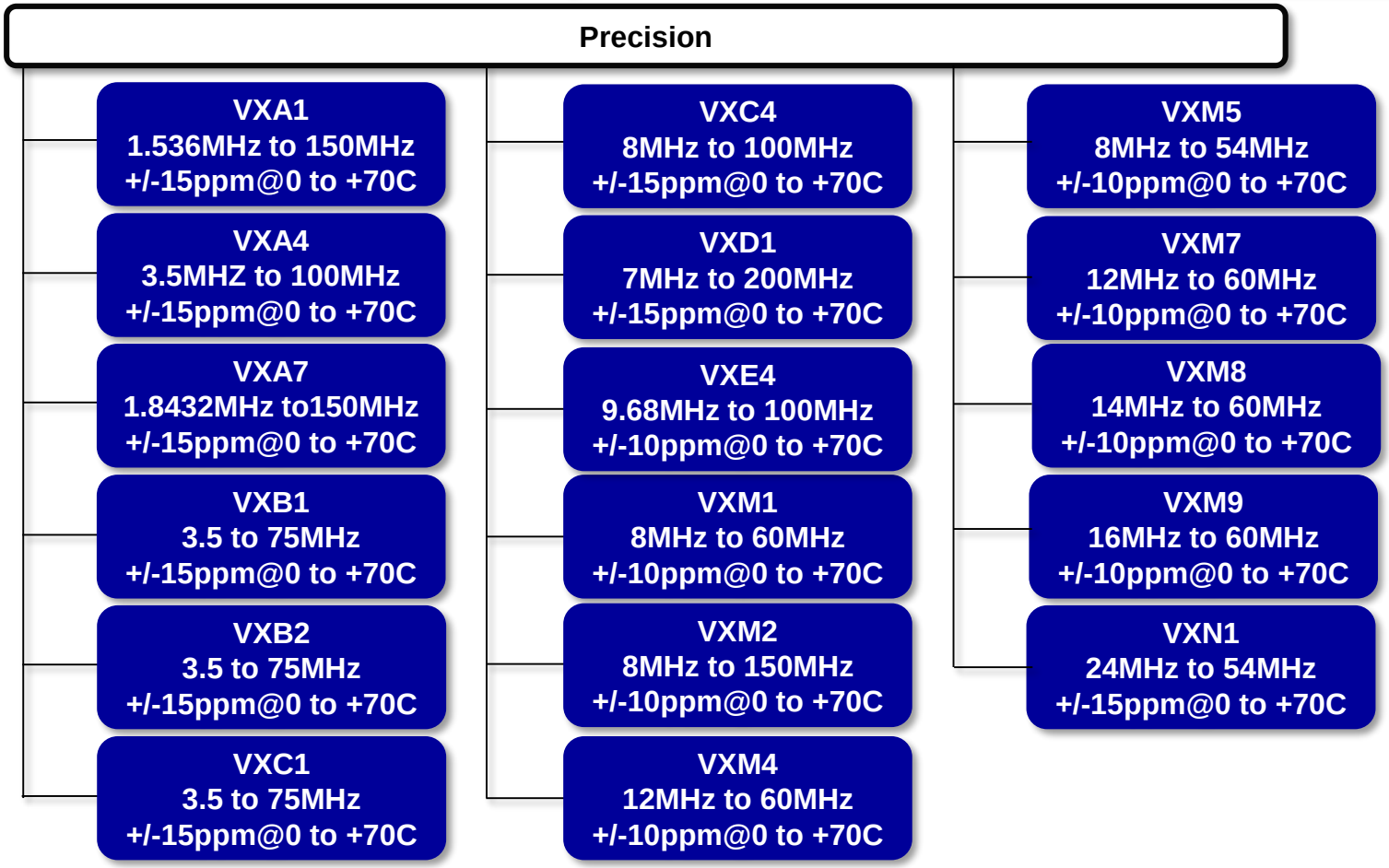




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# Crystals

Product Tree





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# Ultra-Low Power MEMS Oscillators

Product Tree

**Ultra-Low Power MEMS Oscillators**

- **DSC6000B/6100B**
  **CMOS**
  **2KHz to 100MHz**

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# Low-Power MEMS Oscillators

Product Tree

**Low-Power MEMS Oscillators**

- **DSC1001**
  15pF Drive Strength
- **DSC1003**
  25pF Drive Strength
- **DSC1004**
  40pF Drive Strength

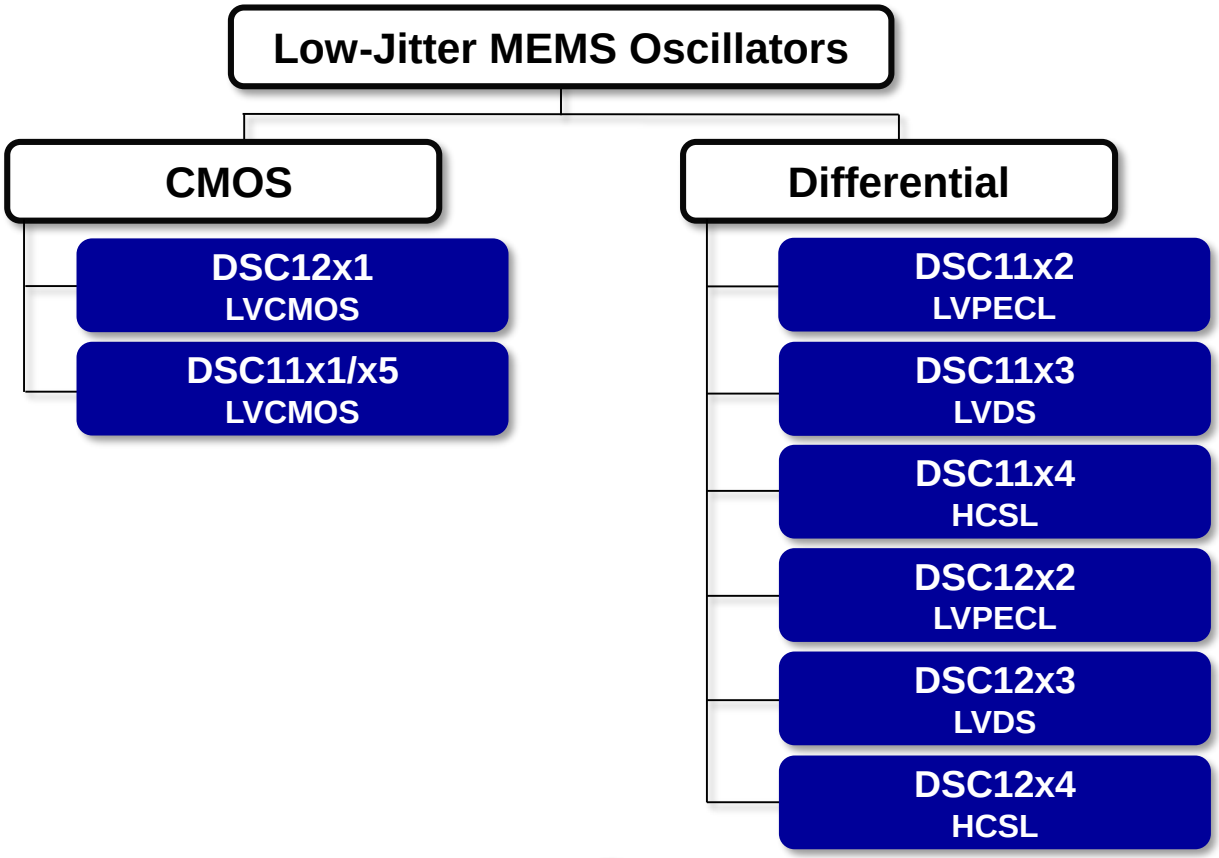
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# Low-Jitter MEMS Oscillators

Product Tree




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Customize & Create Oscillators and Clock Generators

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# Crystal Oscillators

Product Tree

## Standard

- PX-421 0.01-125MHz CMOS/TTL
- PX-706 40-300MHz CMOS/LVPECL
- VC-801 0.03277-125MHz CMOS
- VC-806 25-250MHz LVPECL/LVDS
- VC-820 0.625-133MHz CMOS
- VC-840 0.75-60MHz CMOS
- VCC1 1.024-190MHz CMOS
- VCC6 10-275MHz LVPECL/LVDS
- XO-400 15-250MHz LVPECL

## Space Grade

- DOC203679 12-200MHz LVDS
- DOC203810 100-700MHz LVPECL
- DOC204900 12-60MHz CMOS
- DOC206379 12-100MHz CMOS
- DOC206903 12-200MHz LVDS
- OS-68338 0.35-100MHz CMOS/TTL

## High Temp

- PX-420 0-40MHz CMOS
- PX-570 0.5-40MHz CMOS
- PX-610 32.768KHz-40MHz CMOS
- PX-702 0.5-50MHz CMOS
- HT-RTC-XO 32.768KHz CMOS

## Low Jitter

- MX55/57 2.5-850MHz CMOS/LVPECL LVDS/HCSL
- VC-711 10-170MHz LVPECL/LVDS
- VC-827 20-170MHz LVPECL/LVDS

## Precision

- PX-400 0.000001-200MHz CMOS/TTL
- PX-500 1-800MHz CMOS/TTL LVPECL/LVDS
- PX-700 1-800MHz CMOS/TTL LVPECL/LVDS

## High Shock

- PX-422 1-80MHz CMOS/TTL
- PX-507 1-800MHz CMOS/TTL LVPECL/LVDS
- PX-571 0.01-125MHz CMOS/TTL

## Low Power

- VC-709 13.5-220MHz LVPECL LVDS/HCSL
- VC-826 20-170MHz LVPECL/LVDS

## Low g

- PX-504 30-180MHz CMOS

## High Frequency

- MX55/57 2.5-850MHz CMOS/LVPECL LVDS/HCSL
- PS-701 0.6GHz-3GHz LVPECL SO

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# TCXO

Product Tree

## Standard

- VT-802 2MHz-50MHz CMOS
- VT-820 8MHz-45MHz Clipped Sinewave
- VT-822 4MHz-54MHz CMOS
- VT-841 10MHz-52MHz Clipped Sinewave
- VT-860 13MHz-52MHz Clipped Sinewave
- MXT57 10MHz-850MHz LVCMOS/LVPECL/LVDS/HCSL

## Stratum 3

- TX-500 50MHz-100MHz CMOS/Clipped Sine/LVPECL
- TX-801 6.4MHz – 52MHz CMOS/Clipped Sine
- VT-803 10MHz-52MHz CMOS/Clipped Sine

## Microprocessor Corrected

- MX-503 8MHz-50MHz CMOS
- MX-505 8MHz-40MHz CMOS
- MX-600 8MHz-40MHz CMOS

## Low g

- TX-550 8MHz-100MHz CMOS/Clipped Sine/LVPECL
- TX-707 8MHz-52MHz CMOS/Clipped Sine
- TX-708 96MHz-160MHz CMOS

## Space Grade

- DOC200103 0.3MHz to 425MHz CMOS/Sinewave
- DOC207139 12MHz to 200MHz LVDS

## Low Noise

- VT-501 8MHz to 61.44MHz CMOS
- TX-321 5MHz to 50MHz CMOS/Sine

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# Multi-Output MEMS Oscillators

Product Tree

**Multi-Output MEMS Oscillators**

- **DSC612**
  2 Outputs
  Low Power / Ultra-Small
- **DSC613**
  3 Outputs
  Low Power / Ultra-Small
- **DSC2311**
  2 Outputs -CMOS
  2ps Phase Jitter
- **DSC2XXX**
  2 Outputs
  2ps Phase Jitter
- **DSC400**
  4 Outputs
  2ps Phase Jitter

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# Multi-Output Crystal Oscillator

Product Tree

**Multi-Output XO**

**MX85**
**5 Outputs**
**0.2ps Phase Jitter**

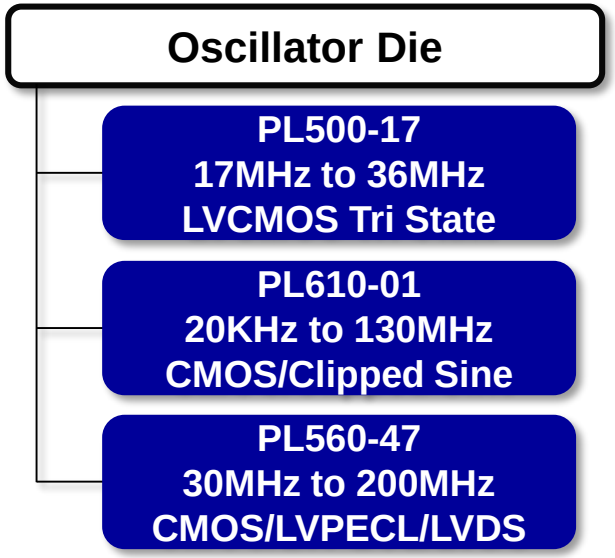
ClockWorks® CONFIGURATOR

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# Oscillator Die

Product Tree

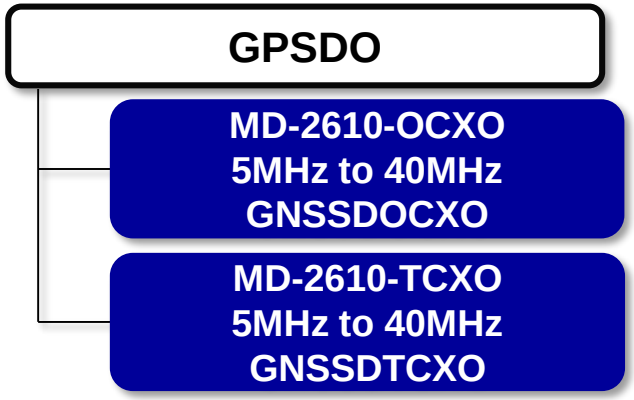




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# GPSDO

Product Tree

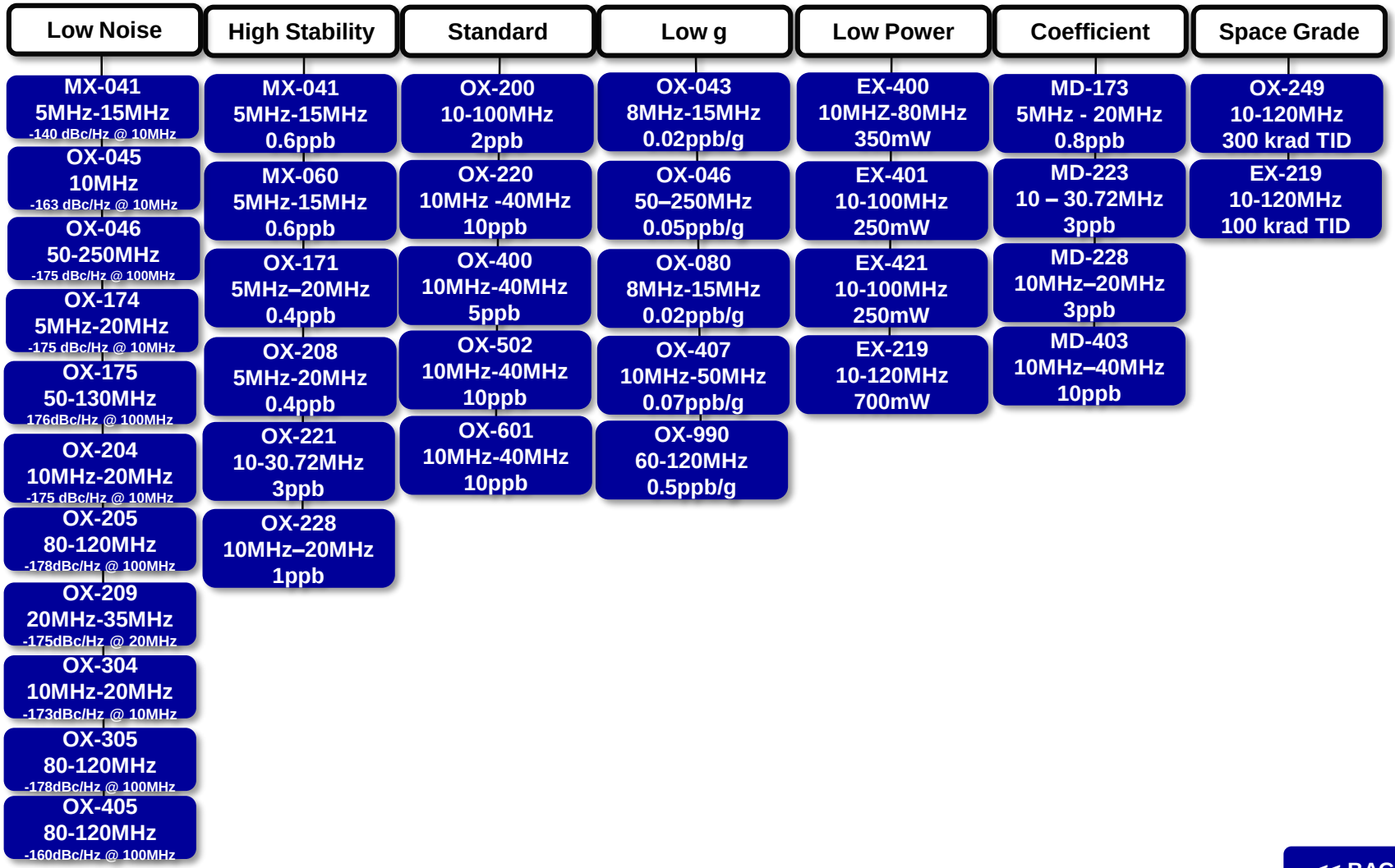




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# OCXO

Product Tree





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# VCXO

Product Tree

| Standard | Low Noise | Space Grade | Low g | High Temp | Military Temp |
|---|---|---|---|---|---|
| VV-701<br>1.544-77.76MHz<br>CMOS | VX-501<br>0.01-1.2GHz<br>CMOS/Sine/LVPECL/LVDS | DOC204898<br>100MHz-700MHz<br>LVPECL | VX-500<br>1MHz-800MHz<br>CMOS/LVPECL | VX-400<br>1MHz-32.768MHz<br>CMOS | VX-505<br>20MHz-800MHz<br>CMOS/LVPECL |
| VV-800<br>1.544-77.76MHz<br>CMOS | VX-706<br>40MHz-300MHz<br>CMOS/LVPECL | DOC204899<br>80MHz-200MHz<br>LVDS | VX-504<br>30MHz-160MHz<br>CMOS | VX-708<br>2MHz-40MHz<br>CMOS | |
| VX-705<br>77.76MHz-170MHz<br>CMOS/LVPECL | VX-805<br>100MHz-204.8MHz<br>LVPECL | DOC206218<br>1MHz-100MHz<br>CMOS | | | |

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# VCSO & PSO

Product Tree

## VCSO

- VS-403 5GHz-7GHz Sinewave
- VS-501 0.6GHz-3GHz LVPECL
- VS-507 3GHz-6GHz Balanced/Diff Sine
- VS-702 0.15GHz-1GHz LVPECL/LVDS
- VS-705 0.12288GHz-2GHz LVPECL/LVDS
- VS-800 0.8GHz-3.2GHz Balanced/Diff Sine

## Low g

- PS-508 0.6GHz-3GHz LVPECL SO
- VS-506 0.8GHz-3GHz Sinewave VCSO
- VS-508 0.8GHz-2.9GHz Balanced/Diff Sine VCSO

## High Shock

- PS-701 0.6GHz-3GHz LVPECL SO
- VS-701 0.6GHz-3GHz LVPECL VCSO

## Space Grade

- DOC206559 0.3GHz-1.5GHz Sinewave VCSO
- DOC206906 0.3GHz-1GHz LVPECL VCSO

## Standard SO

- PS-501 0.6GHz-3GHz Balanced/Diff Sine

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# FCXO

Product Tree

## Frequency Converter

- FX-400
  1.5MHz to 800MHz
  CMOS/LVPECL/LVDS
- FX-402
  1.5MHz to 800MHz
  LVPECL/LVDS
- FX-500
  0.01MHz to 80MHz
  CMOS
- FX-700
  0.01MHz to 80MHz
  CMOS
  1 VCXO Input/1 VCXO Output
- FX-702
  .062GHz to 1.2GHz
  LVPECL/LVDS
  1 Comp Output/1 Comp Input

## Clock Data Recovery

- CD-700
  1MHz to 78MHz
  CMOS

<< BACK

# High Temp Oscillators

Product Tree

| Oscillator | VCXO | OCXO | RTC Module |
| --- | --- | --- | --- |
| HT-RTC-XO<br>32.768KHz<br>XTAL CMOS | VX-400<br>1MHz-32.768MHz<br>CMOS | HX-171<br>10MHz-20MHz<br>CMOS | HM-4201-RTCM1<br>0.000512MHz<br>CMOS |
| PX-420<br>0.5MHz-40MHz<br>XTAL CMOS | VX-708<br>2MHz-40MHz<br>CMOS | | |
| PX-507<br>1MHz-800MHz<br>MEMS CMOS/TTL/LVPECL/LVDS | | | |
| PX-610<br>32.768KHz-40MHz<br>XTAL CMOS | | | |
| PX-702<br>500KHz-50MHz<br>XTAL CMOS | | | |

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# HIGH SHOCK & VIBRATION

Product Tree

## Crystal Oscillator

- M55310/09B
  0.4MHz to 60MHz
  TTL
- M55310/16
  0.1MHz to 60MHz
  TTL
- M55310/19B
  1MHz to 60MHz
  TTL
- M55310/21B
  1MHz to 60MHz
  TTL
- M55310/26B
  .01MHz to 65MHz
  CMOS
- M55310/27B
  1MHz to 85MHz
  CMOS
- M55310/28B
  1MHz to 85MHz
  TTL
- M55310/30B
  .045MHz to 65MHz
  CMOS
- PX-500
  1MHz to 800MHz
  CMOS/TTL/LVDS/LVPECL
- PX-504
  30MNHz to 180MHz
  CMOS
- PX-571
  0.01MHz to 125MHz
  CMOS/TTL
- PX-700
  1MHz to 800MHz
  CMOS/TTL/LVDS/LVPECL

## MEMS Oscillator

- DSC6000
  2KHz to 100MHz
  CMOS
- DSC1001/1003/1004
  1MHz to 150MHz
  CMOS
- DSC1101/1121
  2.3MHz to 170MHz
  CMOS
- DSC1102/1122
  2.3MHz to 460MHz
  LVPECL
- DSC1103/1123
  2.3MHz to 460MHz
  LVDS
- DSC1104/1124
  2.3MHz to 460MHz
  HCSL
- DSC2XXX (2 output)
  2.3MHz to 460MHz
  CMOS,LVPECL,LVDS,HCSL
- DSC2311 (2 output)
  2.3MHz to 460MHz
  CMOS
- DSC400 (4 output)
  2.3MHz to 460MHz
  CMOS,LVPECL,LVDS,HCSL

## OCXO

- EX-421
  10MHz to 100MHz
  CMOS, Sinewave
- OX-043
  8MHz to 15MHz
  Sinewave
- OX-046
  50MHz to 250MHz
  Sinewave
- OX-080
  8MHz to 15MHz
  Sinewave

## TCXO

- TX-550
  8MHz to 100MHz
  CMOS/Sinewave/LVPECL
- TX-707
  8MHz to 52MHz
  CMOS/ Clipped Sine
- TX-708
  96MHz to 160MHz
  CMOS

## VCXO

- VX-500
  1MHz to 800MHz
  CMOS/LVPECL
- VX-504
  30MHz to 160MHz
  CMOS

## Saw Oscillator

- PS-508
  0.6GHz to 3GHz
  Sinewave/LVPECL

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# LOW g-SENSITIVITY

Product Tree

| OCXO | TCXO | VCSO & SO | VCXO | Crystal Oscillator |
|---|---|---|---|---|
| OX-043<br>8Mz to 15MHz<br>Sinewave<br>0.02ppb/g | TX-321<br>5MHz to 50MHz<br>CMOS<br>0.2ppb/g | VS-506<br>0.8GHz to 3GHz<br>Sinewave<br>1.2ppb/g | VX-504<br>30MHz to 160MHz<br>CMOS<br>0.3ppb/g | PX-504<br>30MHz to 180MHz<br>CMOS<br>0.3ppb/g |
| OX-046<br>50MHz to 250MHz<br>Sinewave<br>0.05ppb/g | TX-550<br>8MHz to 100MHz<br>CMOS/Sinewave/LVPECL<br>0.2ppb/g | VS-508<br>0.8GHz to 2.9GHz<br>LVPECL<br>0.6ppb/g | | |
| OX-080<br>8MHz to 15MHz<br>Sinewave<br>0.02ppb/g | TX-705<br>16MHz to 50MHz<br>CMOS/Sinewave<br>0.2ppb/g | PS-508<br>0.6GHz to 3GHz<br>LVPECL<br>0.6ppb/g | | |
| OX-405<br>80MHz to 120MHz<br>CMOS/Sinewave<br>0.5ppb/g | TX-707<br>8Mz to 52MHz<br>CMOS/Sinewave<br>0.1ppb/g | | | |
| OX-407<br>10MHz to 50MHz<br>CMOS/Sinewave<br>0.07ppb/g | TX-708<br>96MHz to 160MHz<br>CMOS<br>0.1ppb/g | | | |

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# Radiation Hardened

Product Tree

| Crystal Oscillator | VCXO | VCSO | TCXO | OCXO |
|---|---|---|---|---|
| DOC203679<br>12MHz to 200MHz<br>LVDS<br>100 krad TID | DOC204898<br>100MHz to 700MHz<br>LVPECL<br>50 krad ELDRS | DOC206559<br>0.3GHz to 1.5GHz<br>Sinewave<br>300 krad TID | DOC200103<br>0.3MHz to 425MHz<br>CMOS/Sinewave<br>100 krad TID | EX-219<br>10MHz to 120MHz<br>CMOS/Sinewave<br>100 krad TID |
| DOC203810<br>100MHz to 700MHz<br>LVPECL<br>50 krad ELDRS | DOC204899<br>80MHz to 200MHz<br>LVDS<br>100 krad TID | DOC206906<br>0.3GHz to 1GHz<br>LVPECL<br>50 krad ELDRS | DOC207139<br>12MHz to 200MHz<br>LVDS<br>100 krad TID | OX-249<br>10MHz to 120MHz<br>CMOS/Sinewave<br>300 krad TID |
| OS-68338<br>0.35MHz to 100MHz<br>CMOS/TTL<br>100 krad TID | DOC206218<br>1MHz to 100MHz<br>CMOS<br>100 krad TID | | | |
| M55310/16<br>0.1MHz to 60MHz<br>TTL | | | | |
| DOC204900<br>12MHz to 160MHz<br>CMOS<br>100 krad TID | | | | |
| DOC206379<br>12MHz to 100MHz<br>CMOS<br>300 krad TID | | | | |
| DOC206903<br>12MHz to 200MHz<br>LVDS<br>300 krad TID | | | | |

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# HIGH FREQUENCY

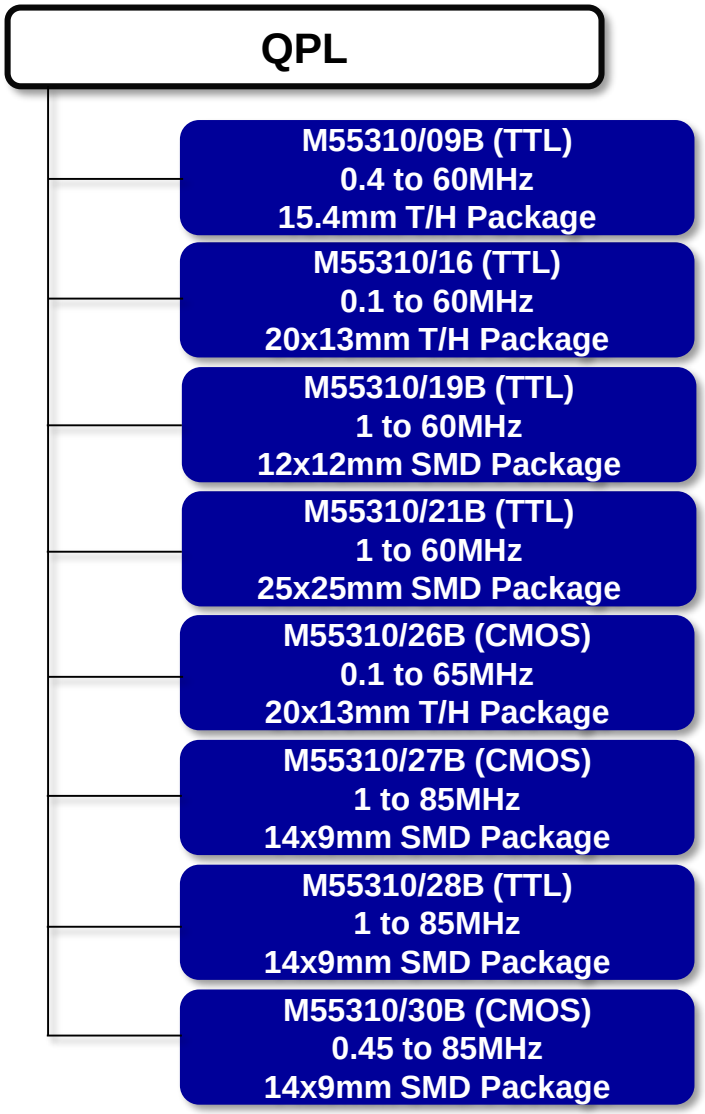
Product Tree

| VSCO | Crystal OSC | VCXO | TCXO | OCXO | Saw Osc | FCXO |
|---|---|---|---|---|---|---|
| VS-401<br>1GHZ-2.5GHz<br>Sinewave | PX-400<br>.000001-200MHz<br>CMOS/TTL | VX-500<br>1-800MHz<br>CMOS/LVPECL | TX-401<br>250 to 700MHz<br>Clipped Sinewave | EX-219<br>10 to 120MHz<br>CMOS/Sine | PS-501<br>0.6 to 3GHz<br>Sinewave/LVPECL | FX-400<br>1.5 to 800MHz<br>CMOS/LVPECL/LVDS |
| VS-403<br>5GHz-7GHz<br>Sinewave | PX-500<br>1-800MHz<br>CMOS/LVPECL/LVDS/TTL | VX-501<br>0.01 to 1.2GHz<br>CMOS/Sine/LVPECL/LVDS | TX-550<br>8 to 100MHz<br>CMOS/Sine/LVPECL | OX-046<br>50 to 250MHz<br>Sine | PS-508<br>0.6 to 3GHz<br>Sinewave/LVPECL | FX-402<br>125 to 850MHz<br>LVPECL/LVDS |
| VS-501<br>0.6GHz-3GHz<br>Sine/LVPECL | PX-501<br>0.01-1.2GHz<br>CMOS/Sine/LVPECL/LVDS | VX-505<br>20 to 800MHz<br>CMOS/LVPECL | TX-708<br>96 to 160MHz<br>CMOS | OX-175<br>50 to 130MHz<br>Sine | PS-701<br>0.6 to 3GHz<br>Sinewave/LVPECL | FX-702<br>0.062 to 1. 2GHz<br>LVPECL/LVDS |
| VS-506<br>0.8GHz-3GHz<br>Sinewave | PX-504<br>30-180MHz<br>CMOS | VX-706<br>40 to 300MHz<br>CMOS/LVPECL | DOC200103<br>0.3 to 425MHz<br>Sine/CMOS | OX-205<br>80 to 120MHz<br>Sine | PS-702<br>0.15 to 1GHz<br>LVPECL/LVDS | |
| VS-507<br>3GHz-6GHz<br>Sinewave | PX-700<br>1-800MHz<br>CMOS/LVPECL/LVDS/TTL | VX-805<br>100 to 204.8MHz<br>LVPECL | DOC207139<br>12 to 200MHz<br>LVDS | OX-249<br>10 to 120MHz<br>CMOS/Sine | | |
| VS-508<br>.8GHz-2.9GHz<br>Sine/LVPECL | VC-824<br>10-800MHz<br>CMOS/LVPECL/LVDS | DOC204898<br>100 to 700MHz<br>LVPECL | MXT57<br>11 to 850MHz<br>CMOS/LVPECL/LVDS/HCSL | | | |
| VS-701<br>0.6GHz-3GHz<br>Sine/LVPECL | VCC6<br>10 to 275MHz<br>LVPECL/LVDS | DOC204899<br>80 to 200MHz<br>LVDS | | | | |
| VS-702<br>0.15GHz-1GHz<br>LVPECL/LVDS | MX55/57<br>2.5 to 850MHz<br>CMOS/LVPECL/LVDS/HCSL | | | | | |
| VS-705<br>.12288-2GHz<br>LVPECL/LVDS | DOC203810<br>100 to 700MHz<br>LVPECL | | | | | |
| VS-800<br>0.8GHz-3GHz<br>Sinewave | DOC204900<br>12 to 160MHz<br>CMOS | | | | | |

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# QPL XO

Product Tree





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# Low Noise Oscillator

Product Tree

| OCXO | Oscillator | Multi-Output | TCXO | VCSO |
|---|---|---|---|---|
| EX-401<br>10-100MHz<br>CMOS/Sine | VC-709<br>13.5-220MHz<br>LVPECL/LVDS/HCSL | DSC2XXX<br>2 Output<br>CMOS, LVDS, LVPECL, HCSL | TX-321<br>5-50MHz<br>CMOS | VS-800<br>0.8-3.2GHz<br>Sinewave |
| EX-421<br>10-100MHz<br>CMOS/Sine | VC-711<br>10-170MHz<br>LVPECL/LVDS | DSC400<br>4 Output<br>CMOS, LVDS, LVPECL, HCSL | MXT57<br>10-850MHz<br>CMOS, LVDS, LVPECL, HCSL | |
| OX-174<br>5-20MHz<br>CMOS/Sine | MX55/57<br>2.5-850MHz<br>CMOS/LVPECL/LVDS/HCSL | | | |
| OX-175<br>50-130MHz<br>Sine | DSC1101/1121<br>2.3-170MHz<br>CMOS | | | |
| OX-204<br>10-20MHz<br>Sine | DSC1102/1122<br>2.3-460MHz<br>LVPECL | | | |
| OX-205<br>80-120MHz<br>Sine | DSC1103/1123<br>2.3-460MHz<br>LVDS | | | |
| OX-209<br>20-35MHz<br>Sine | DSC1104/1124<br>2.3-460MHz<br>HCSL | | | |
| OX-304<br>10-20MHz<br>Sine | | | | |
| OX-305<br>80-120MHz<br>Sine | | | | |
| OX-405<br>80-120MHz<br>CMOS/Sine | | | | |
| OX-043<br>8-15MHz<br>Sine | | | | |
| OX-045<br>10MHZ<br>Sine | | | | |
| OX-046<br>250MHz<br>Sine | | | | |

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# Spread Spectrum Oscillators

Product Tree

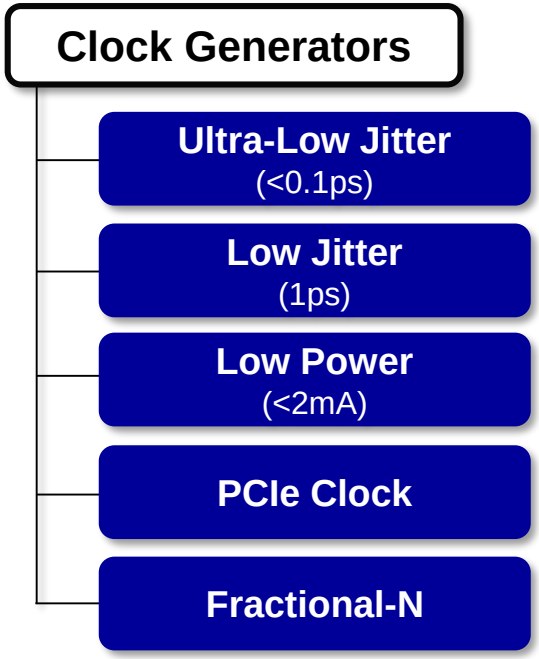
**Spread Spectrum MEMS**

**DSC6300B**
**1MHz to 100MHz**
±0.25 to ±2.5% center spread
-0.5% to -3% down spread

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# Clock Generators

Product Tree

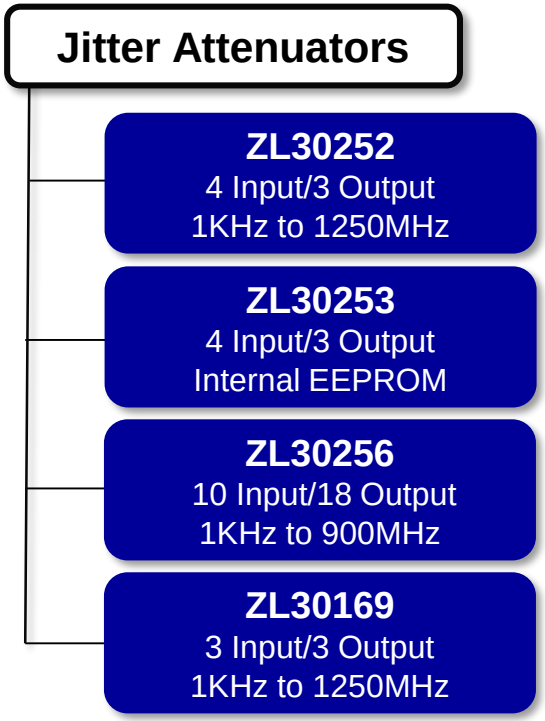




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# Jitter Attenuators

Product Tree





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# Ultra-Low Jitter Clock Generators

Product Tree

## Ultra Low Jitter Clock Generators

### 3 Outputs

**ZL30250**
0.16ps RMS
<1Hz to 1035MHz
CML/CMOS

**ZL30251**
0.16ps RMS
Internal EEPROM
Differential/CMOS

**ZL30244**
0.16ps RMS
**Dual Channel**
**CML/CMOS**

**ZL30245**
**0.16ps RMS**
**Dual Channel**
**CML/CMOS**

**ZL30250**
0.16ps RMS
<1Hz to 1035MHz
CML/CMOS

**ZL30251**
0.16ps RMS
Internal EEPROM
Differential/CMOS

### 5 Outputs

**MX85**
200fs RMS
Internal Crystal
Differential/CMOS

**ZL30261**
0.17ps RMS
Internal EEPROM
Differential/CMOS

### 6 Outputs

**ZL30260**
0.17ps RMS
External EEPROM
Differential/CMOS

**ZL30264**
0.17ps RMS
External EEPROM
Differential/CMOS

**ZL30265**
0.17ps RMS
Internal EEPROM
Differential/CMOS

### 8 Outputs

**SM802**
200fs Phase Jitter
11MHz to 840MHz
Differential/CMOS

**SM803**
180fs Phase Jitter
12MHz to 850MHz
Differential/CMOS

### 10 Outputs

**ZL30262**
0.17ps RMS
External EEPROM
Differential/CMOS

**ZL30263**
0.17ps RMS
Internal EEPROM
Differential/CMOS

**ZL30266**
0.17ps RMS
External EEPROM
Differential/CMOS

**ZL30267**
0.17ps RMS
Internal EEPROM
Differential/CMOS

### 12 Outputs

**SM813**
150fs Phase Jitter
12MHz to 850MHz
Differential/CMOS

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# Low Jitter Clock Generators

Product Tree

## Low Jitter Clock Generators

### 1 Output

**PL602-03**
48MHz to 100MHz
20ps RMS Period Jitter

**PL602-37/38/39**
.75MHz to 800MHz
4.3ps RMS Period Jitter

### 2 Outputs

**DSC2XXX**
2.3MHz to 460MHz.
2ps Phase Jitter

**DSC2311**
2.3MHz to 170MHz
2ps Phase Jitter

### 3 Outputs

**PL611-01**
1MHz to 200MHz
30ps Period Jitter

**PL611-31**
5MHz to 200MHz
60ps Period Jitter

**PL611-30**
5MHz to 400MHz
40ps Period Jitter

### 4 Outputs

**DSC400**
2.3MHz to 460MHz
2ps Phase Jitter

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# Low Power Clock Generators

Product Tree

## Low Power Clock Generators

### 2 Outputs

- **PL611-30**
  5MHz to 400MHz
  LVPECL/LVDS/HCSL/CMOS
- **PL611s-02**
  2MHz to 200MHz
  LVCMOS
- **PL611s-18**
  0.5MHz to 125MHz
  LVCMOS
- **PL611s-19**
  0.5MHz to 125MHz
  LVCMOS

### 3 Outputs

- **PL611-01**
  1MHz to 200MHz
  LVCMOS

### 8 Outputs

- **PL613-01**
  1MHz to 200MHz
  LVCMOS

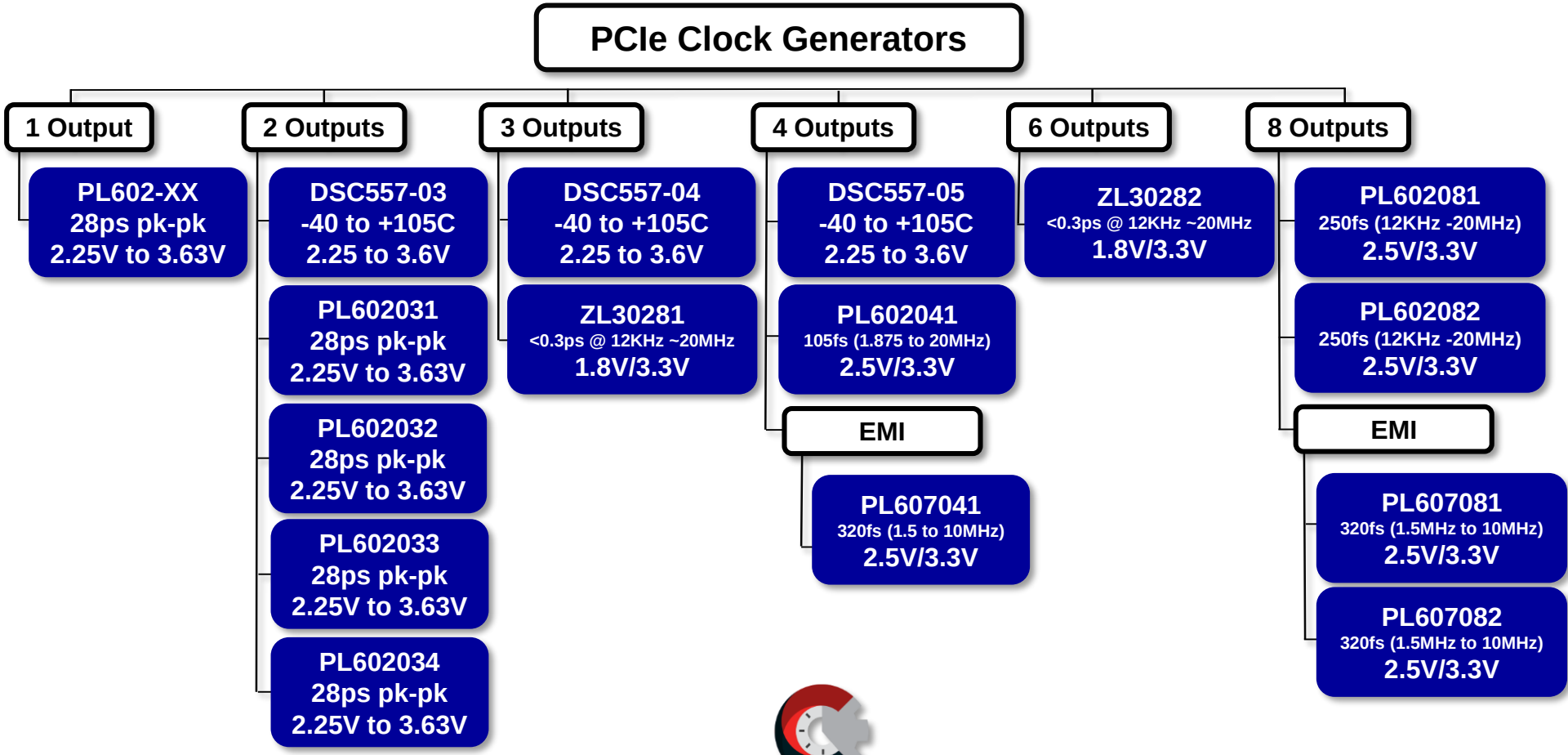
ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators

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# PCIe Clock Generators

Product Tree



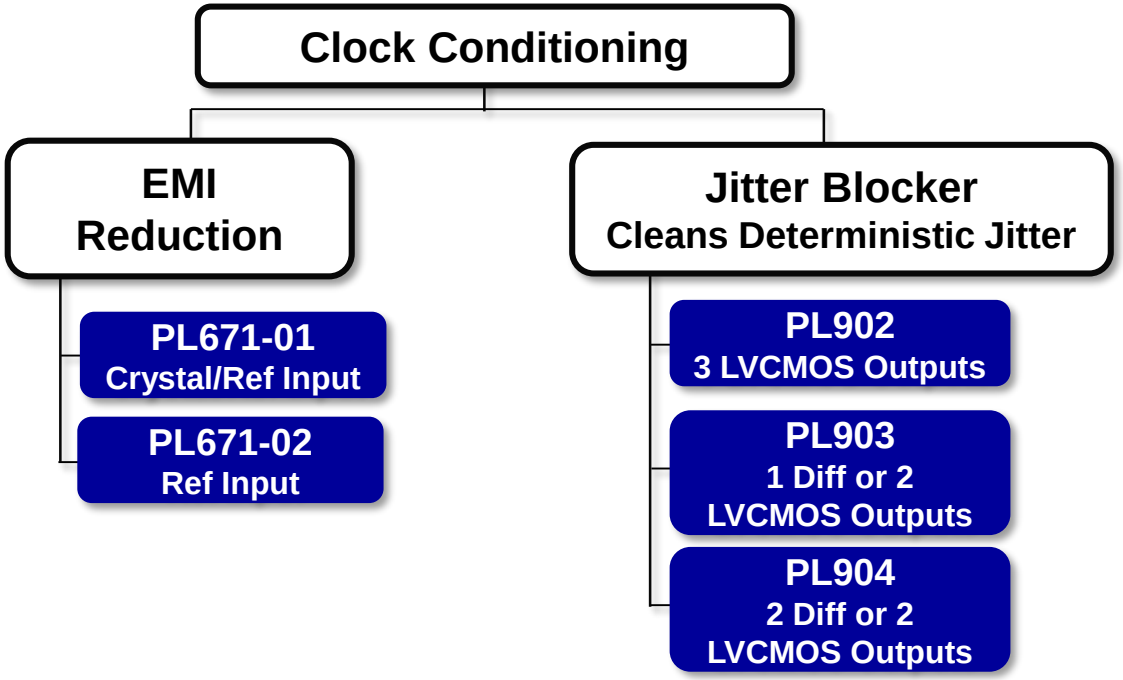

ClockWorks® CONFIGURATOR

Customize & Create Oscillators and Clock Generators


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# Clock Conditioning

Product Tree

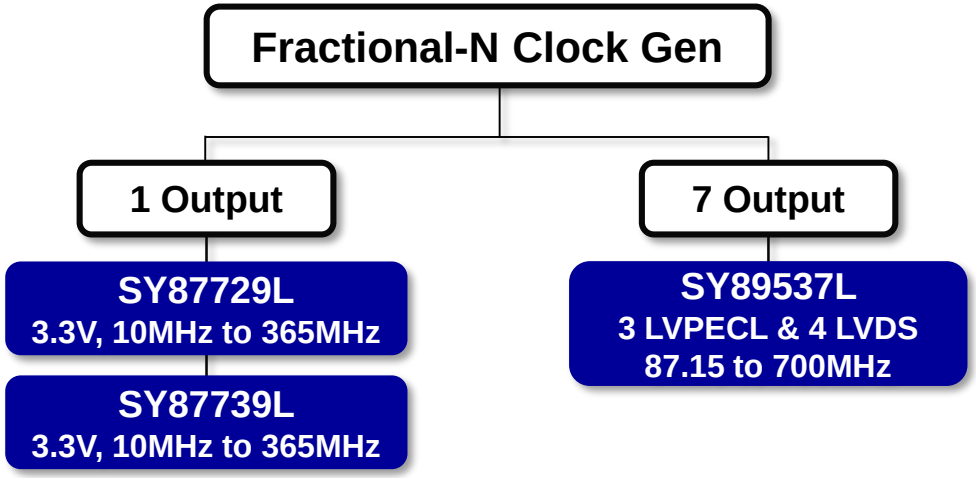




<< BACK

# Fractional-N Clock Generators

Product Tree

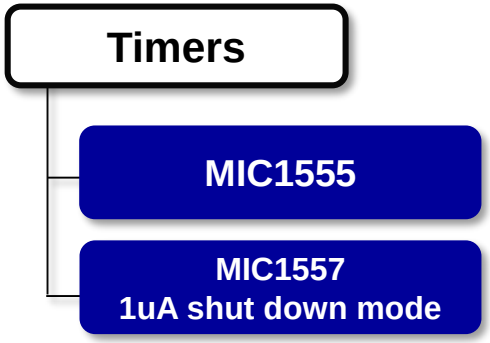




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# 555 Timers

Product Tree

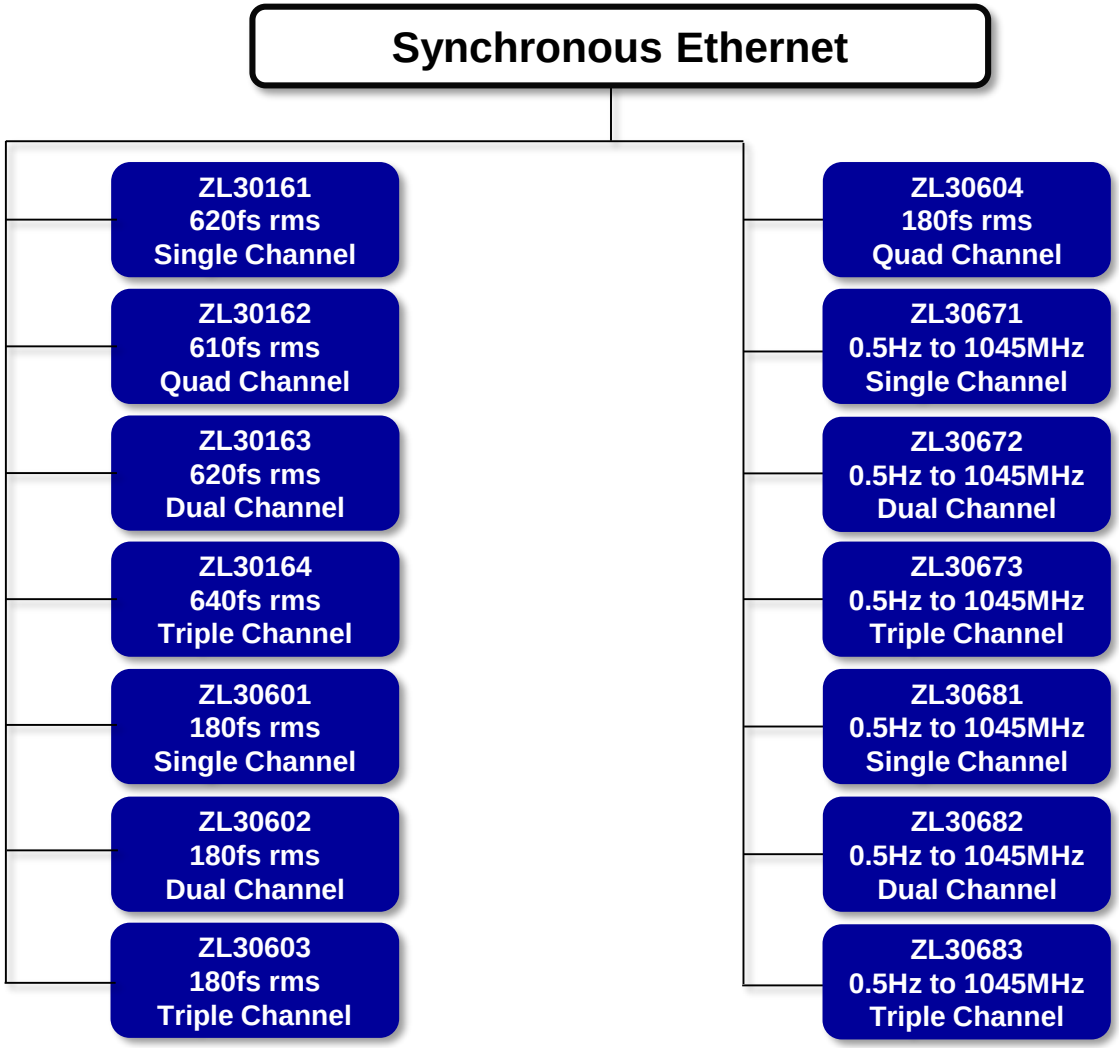




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# Synchronous Ethernet

Product Tree

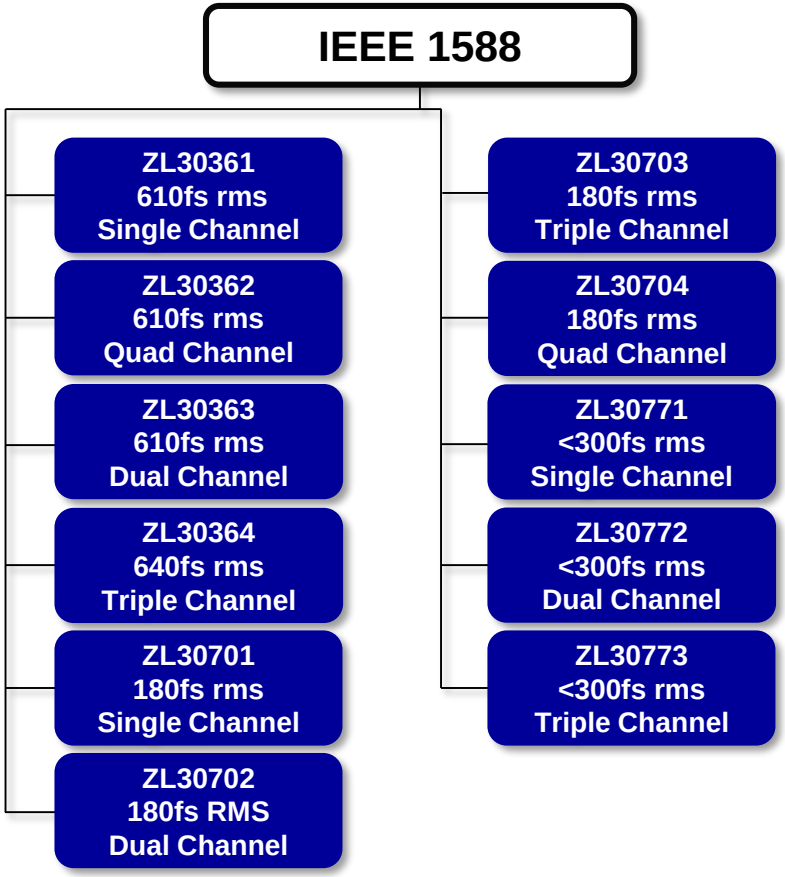




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# IEEE 1588

Product Tree

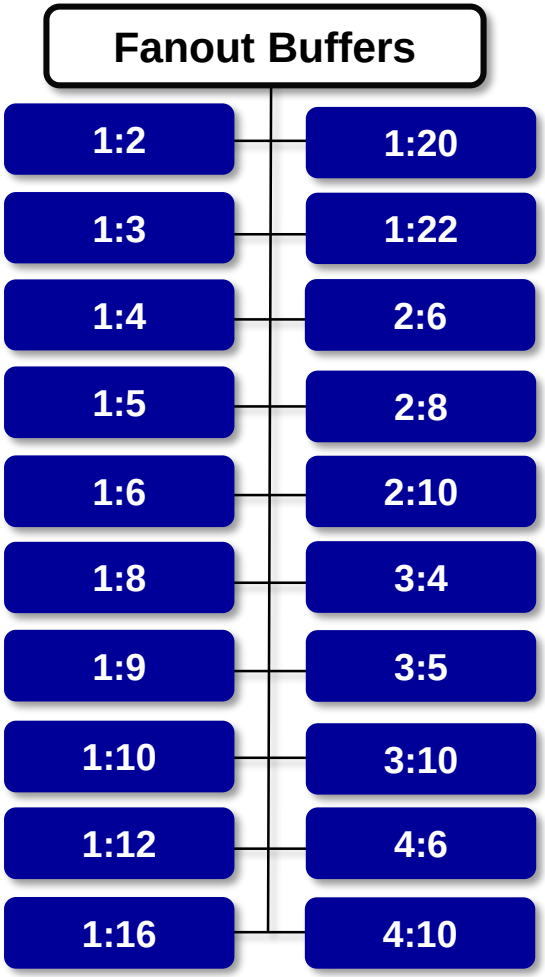




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# Fanout Buffers

Product Tree

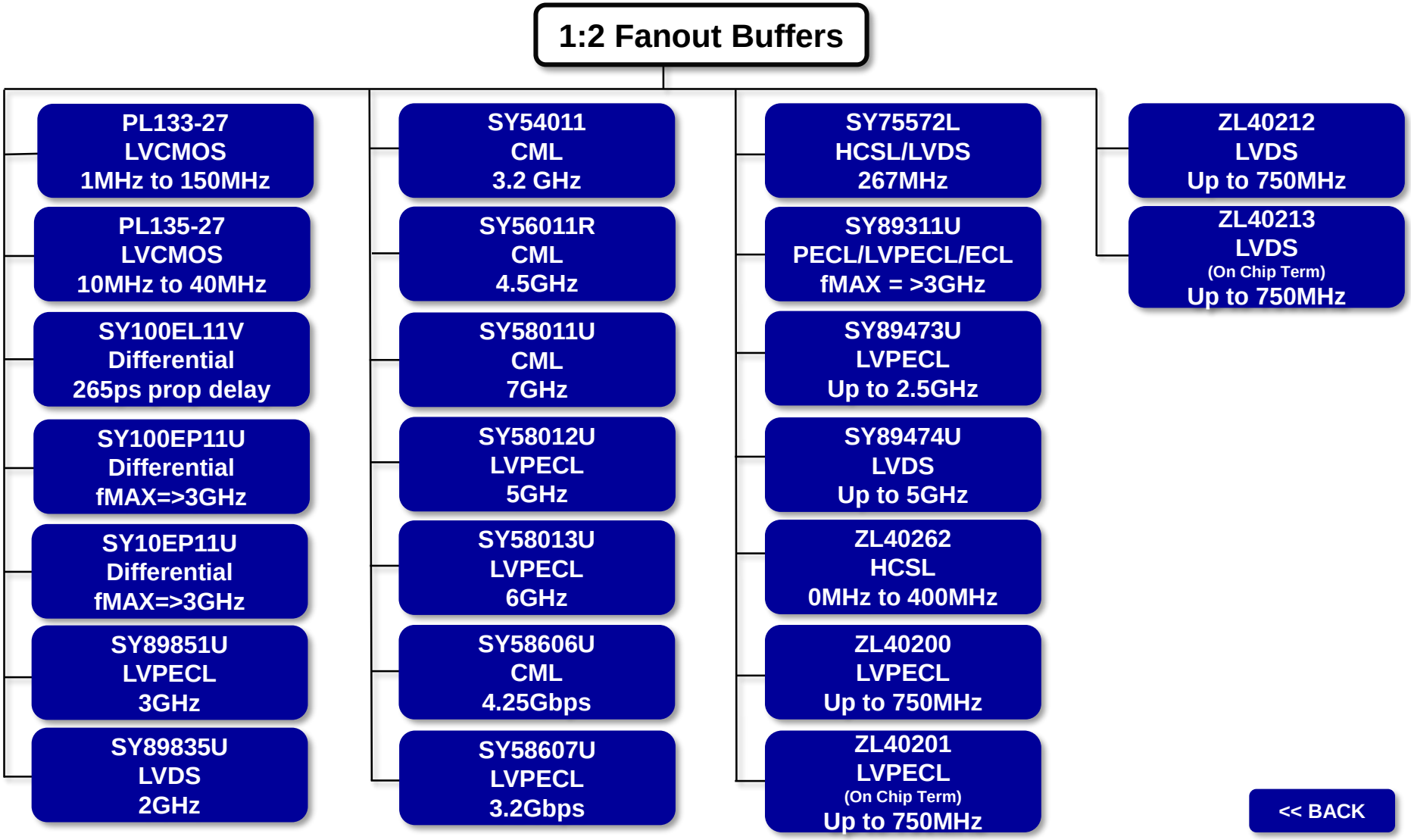




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# 1:2 Fanout Buffers

Product Tree

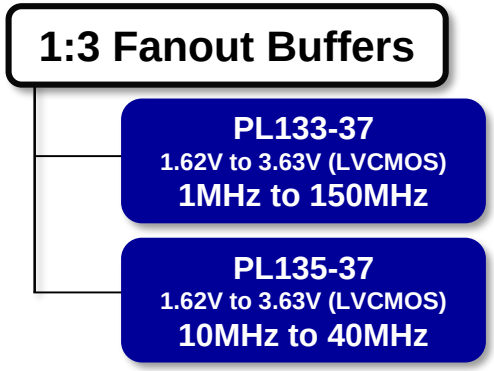




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# 1:3 Fanout Buffers

Product Tree

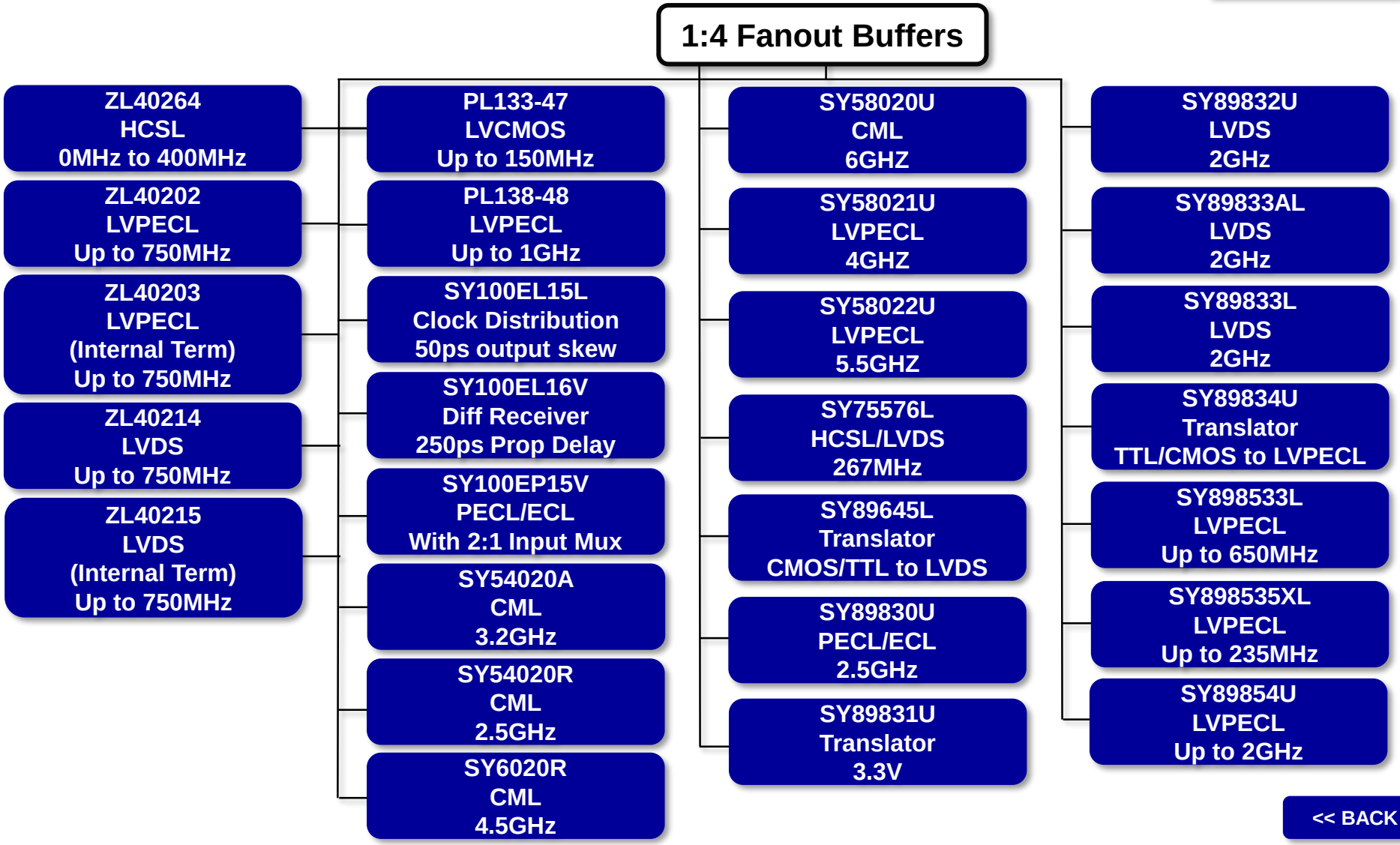




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# 1:4 Fanout Buffers

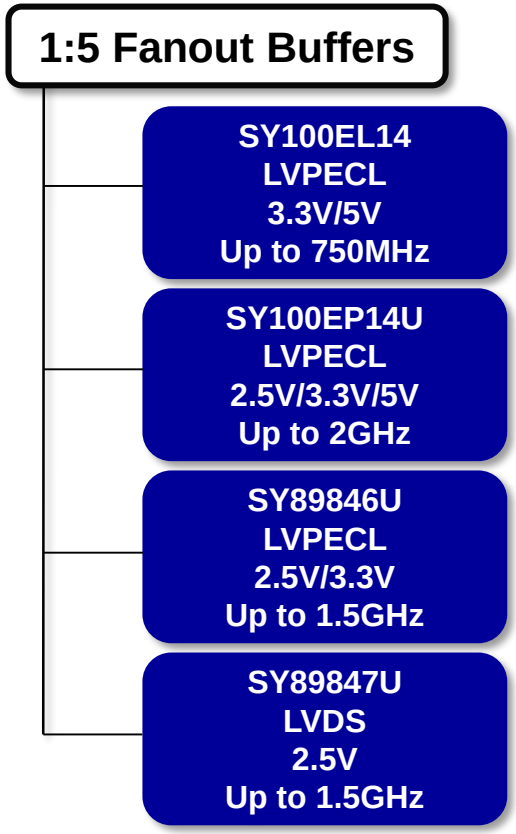
Product Tree




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# 1:5 Fanout Buffers

Product Tree

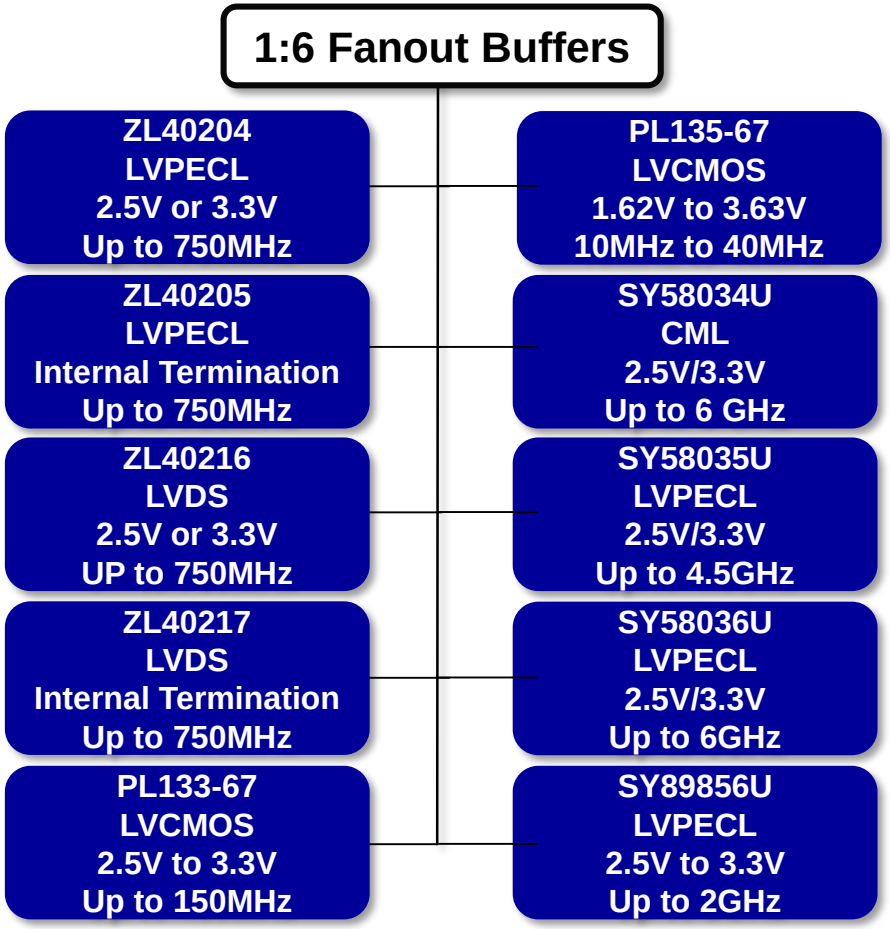




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# 1:6 Fanout Buffers

Product Tree

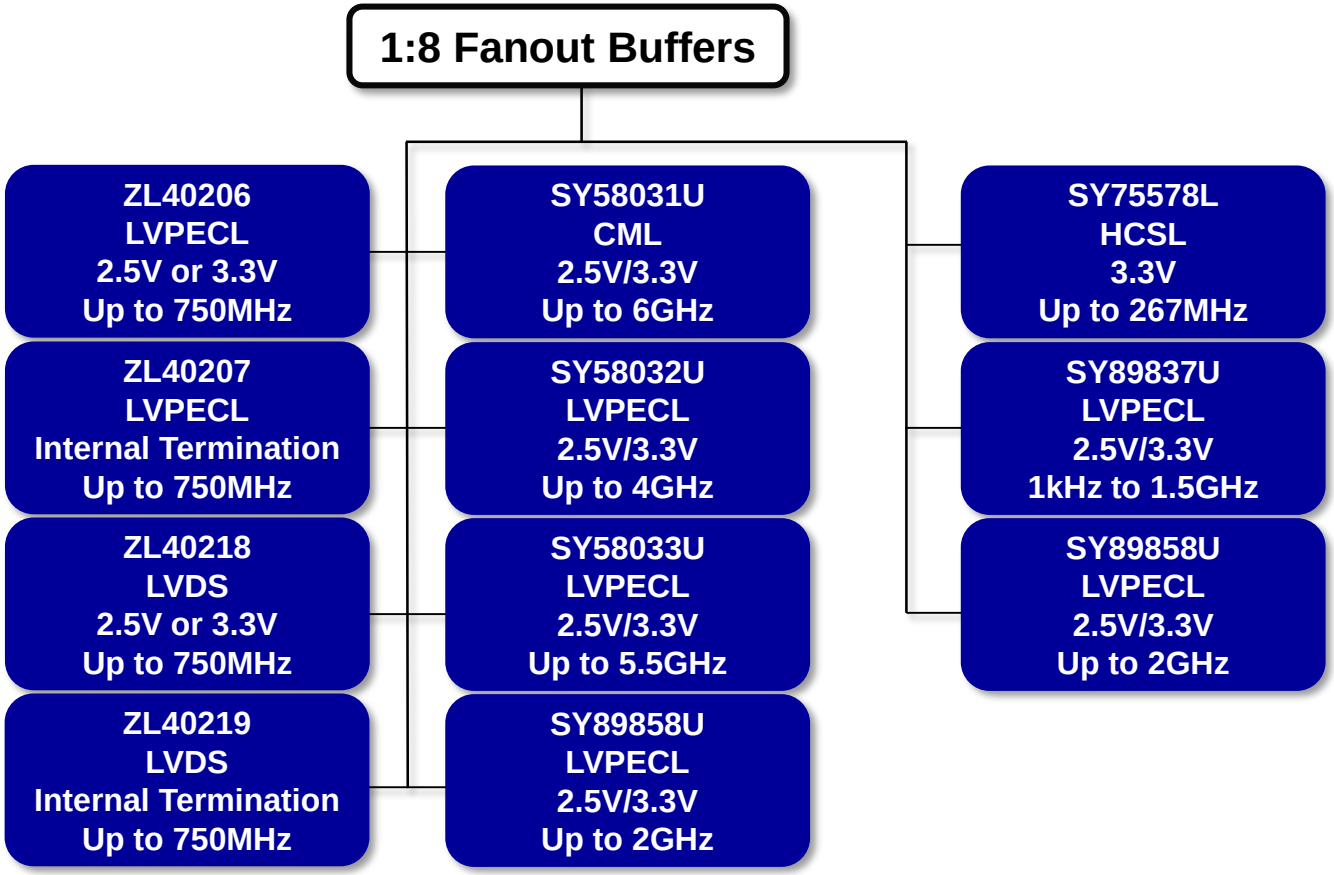




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# 1:8 Fanout Buffers

Product Tree

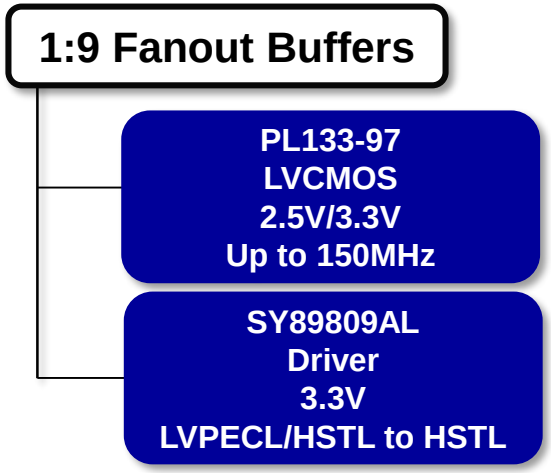




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# 1:9 Fanout Buffers

Product Tree

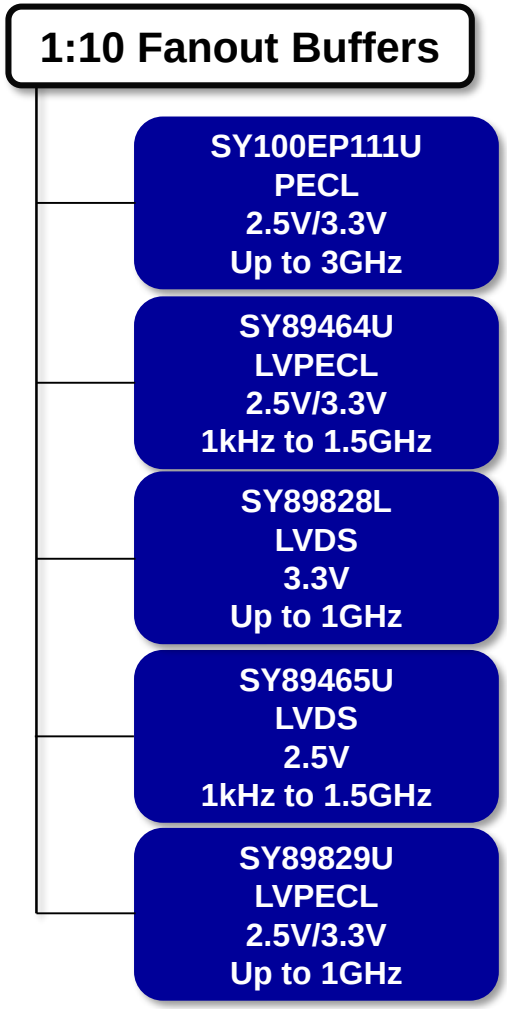




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# 1:10 Fanout Buffers

Product Tree

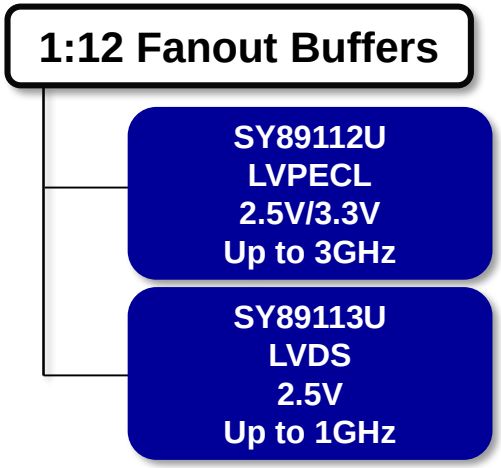




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# 1:12 Fanout Buffers

Product Tree





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# 1:16 Fanout Buffers

Product Tree

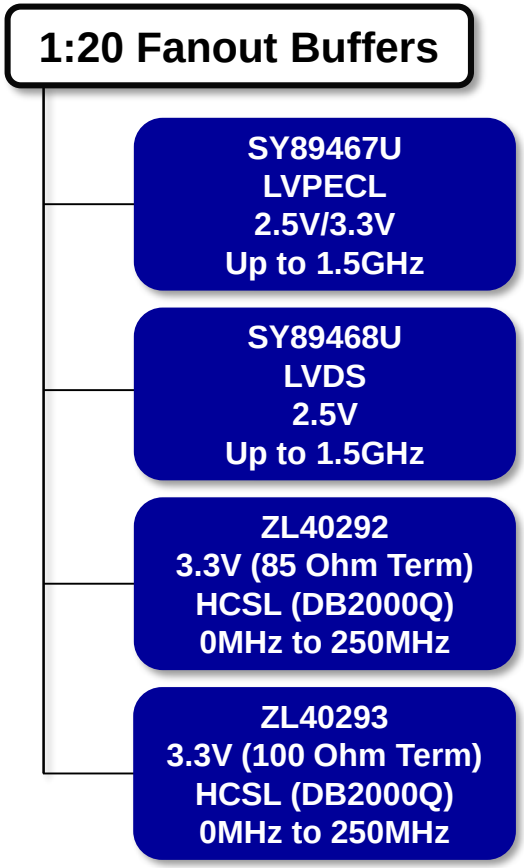
1:16 Fanout Buffers

- SY898530U
  LVPECL
  2.5V/3.3V
  Up to 3GHz

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# 1:20 Fanout Buffers

Product Tree

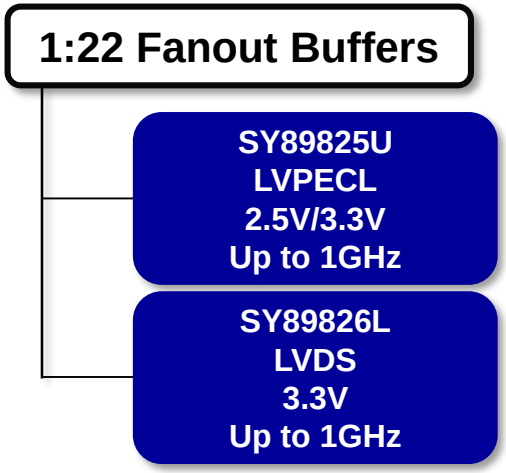




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# 1:22 Fanout Buffers

Product Tree

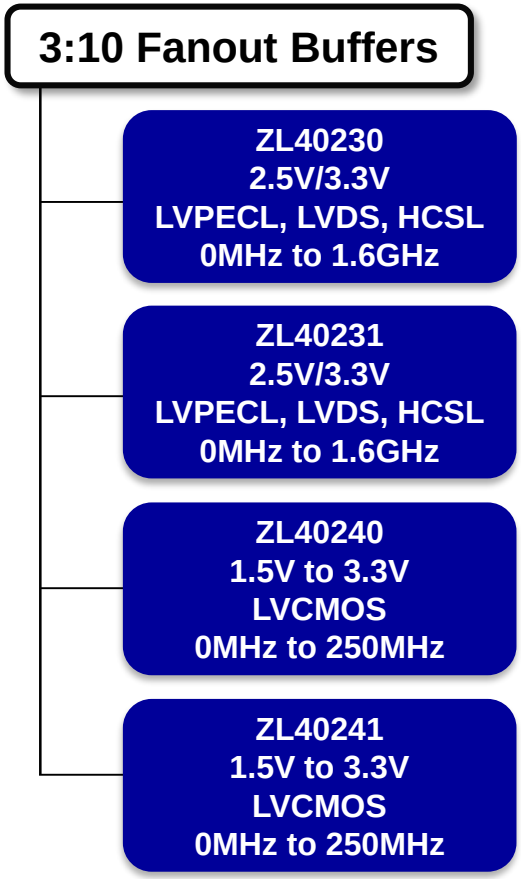




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# 3:10 Fanout Buffers

Product Tree

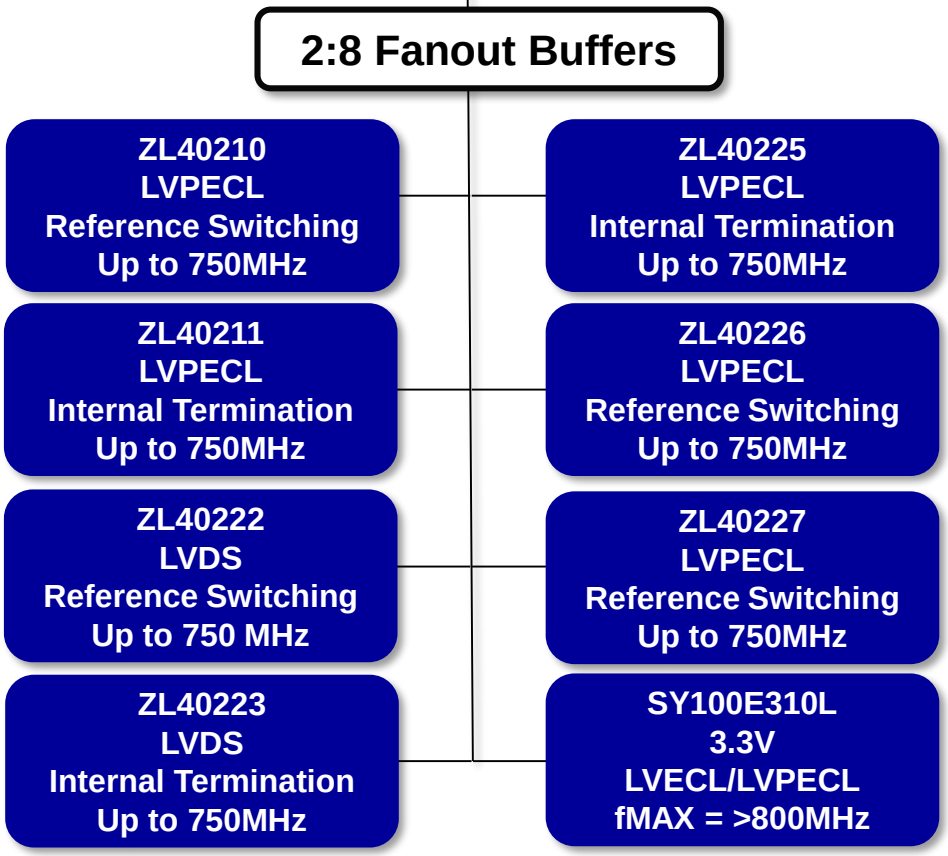




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# 2:8 Fanout Buffers

Product Tree

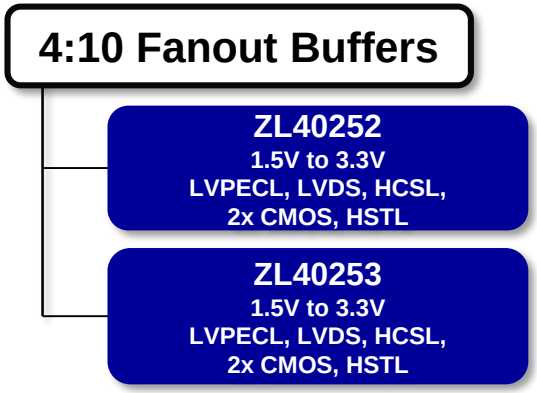




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# 4:10 Fanout Buffers

Product Tree

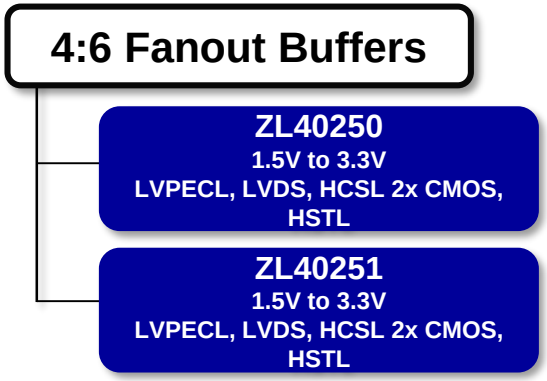




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# 4:6 Fanout Buffer

Product Tree





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# 3:4 Fanout Buffer

Product Tree

**3:4 Fanout Buffers**

- **ZL40234**
  **2.5V/3.3V**
  **LVCMOS**
  **0MHz to 1.6GHz**

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# 3:5 Fanout Buffer

Product Tree

**3:5 Fanout Buffers**

- **ZL40235**
  **2.5V/3.3V**
  **LVPECL, LVDS, HCSL**
  **0MHz to 1.6GHz**

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# 2:10 Fanout Buffer

Product Tree

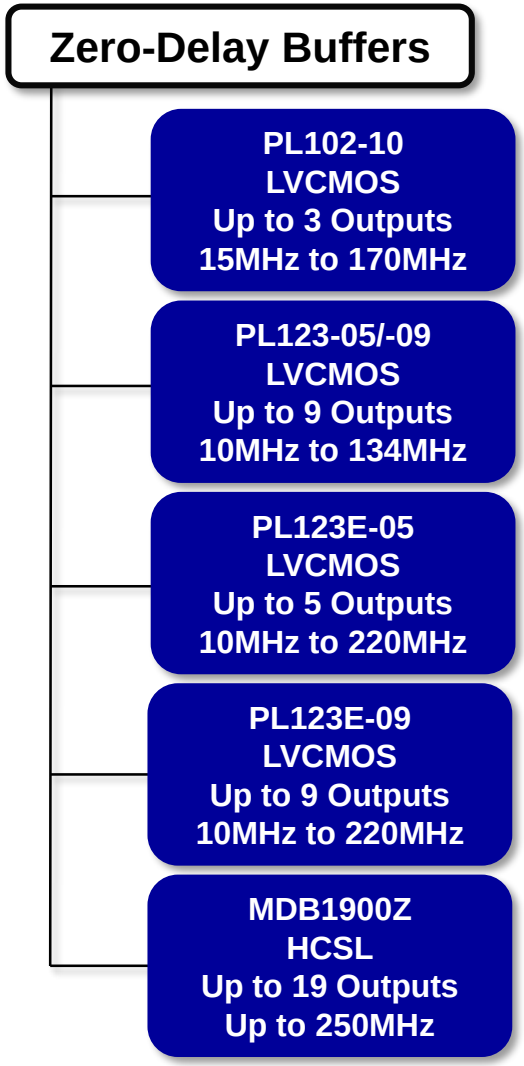
**2:10 Fanout Buffers**

- **ZL40260**
  **2.5V/3.3V**
  **LVPECL**
  **0MHz to 1.6GHz**

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# Zero-Delay Buffers

Product Tree

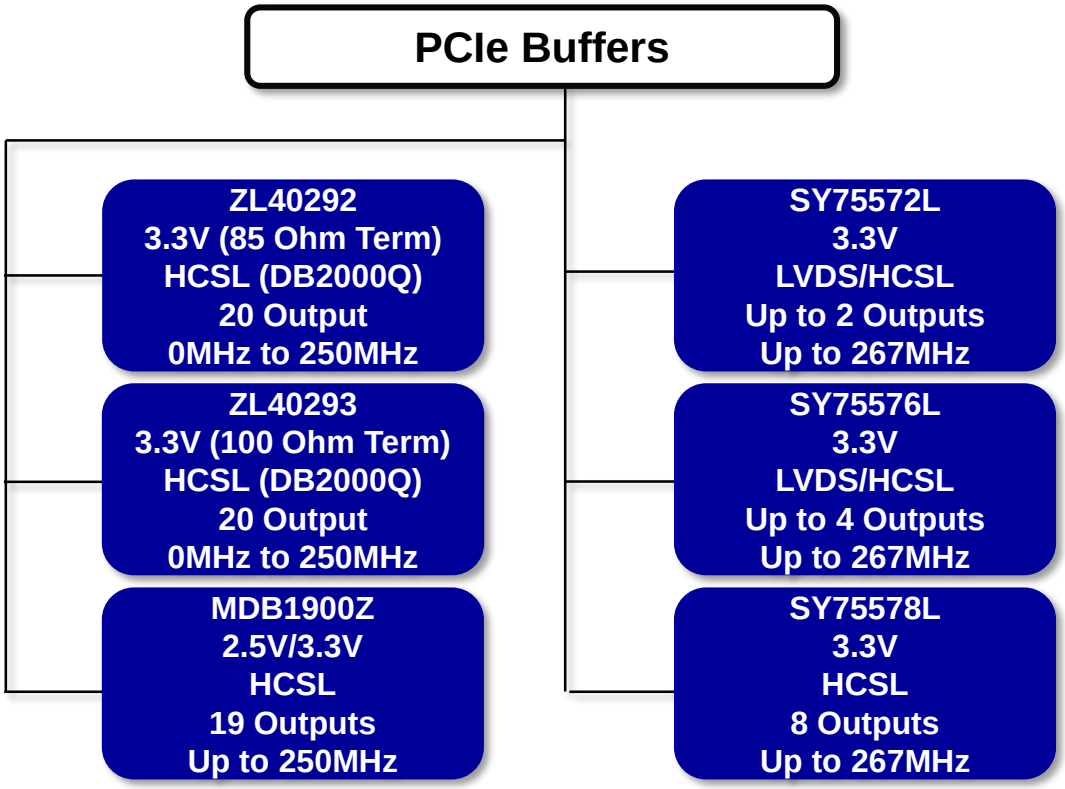




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# PCIe Buffers

Product Tree

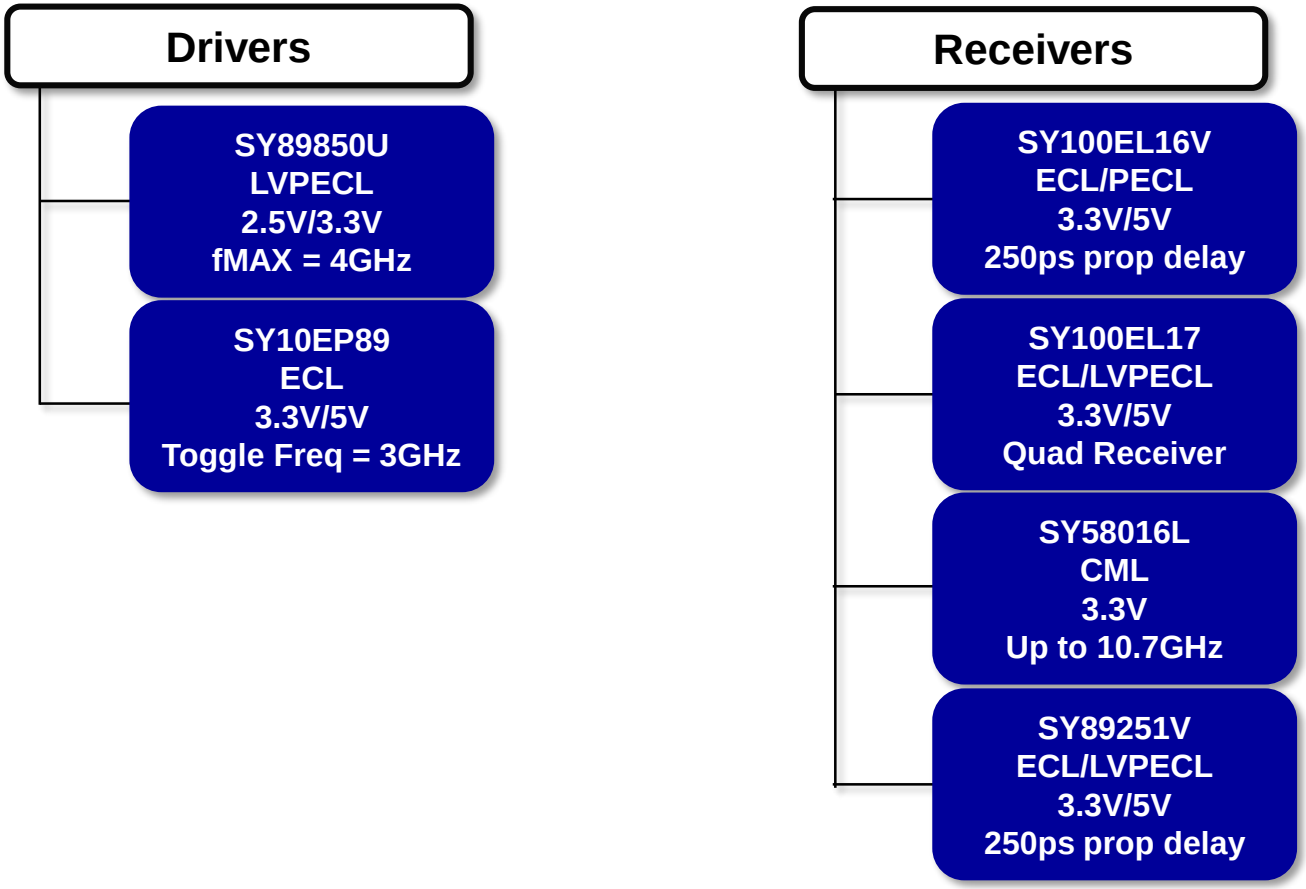




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# Drivers & Receivers

Product Tree





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# Appendix

## Product Pages

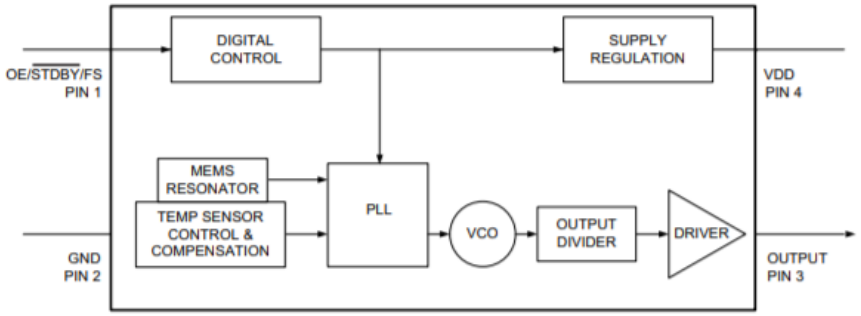
# DSC6000B/DSC6100B

Ultra-Small, Ultra-Low Power MEMS Oscillator

Online Datasheet

## Features:

- Wide Frequency Range:
  - DSC60xxB: 2kHz to 80MHz
  - DSC61xxB: 2KHz to 100MHz
- Ultra Low Power Consumption:
  - DSC60xx: 1.3mA/1uA (Active/Stdby)
  - DSC61xx: 3mA/1uA (Active/Stdby)
- Ultra Small Footprints:
  - 1.6mmx1.2mm, 2.0mmx1.6mm,
  - 2.5mmx2.0mm, 3.2mmx2.5mm
- Frequency Select input supports 2 frequencies
- High Stability: ±20, ±25, ±50 ppm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability
- 20x better MTF than quartz oscillators
- Supply Range of 1.71 to 3.63 V
- Temperature Range:
  - Automotive: -40° to 125° C
  - Extended Industrial: -40° to 105° C
  - Industrial: -40° to 85° C
  - Extended Commercial: -20° to 70° C




| | Pin 1 | Output Drive strength | Active Current |
|---|---|---|---|
| DSC6001 | OE | 10 pf | 1.3mA |
| DSC6003 | OE | 5 pf | 1.3mA |
| DSC6011 | Standby | 10 pf | 1.3mA |
| DSC6013 | Standby | 5 pf | 1.3mA |
| DSC6021 | Frequency Select | 10 pf | 1.3mA |
| DSC6023 | Frequency Select | 5 pf | 1.3mA |
| DSC6101 | OE | 10 pf | 3mA |
| DSC6102 | OE | 15 pf | 3mA |
| DSC6111 | Standby | 10 pf | 3mA |
| DSC6112 | Standby | 15 pf | 3mA |
| DSC6121 | Frequency Select | 10 pf | 3mA |
| DSC6122 | Frequency Select | 15 pf | 3mA |


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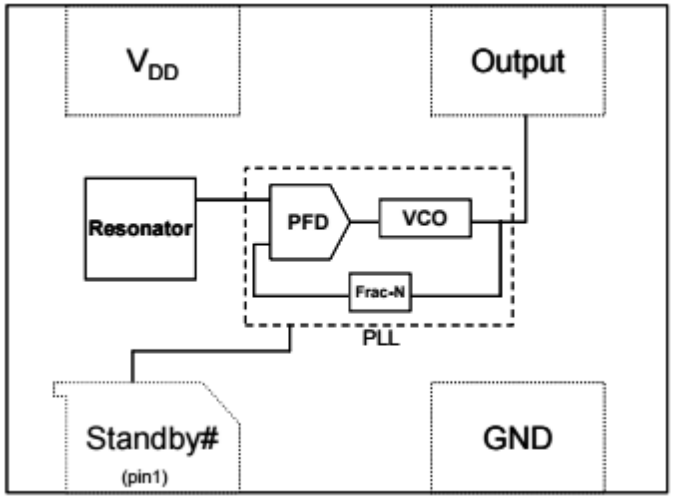
# DSC1001/3/4

Low Power oscillators

Online Datasheet

## Features:

- Frequency Range: 1 to 150MHz
- Drive Strength: 15pF, 25pF, 40pF
- Exceptional Stability over Temperature:
  - ±10 PPM, ±25 PPM, ±50 PPM
- Operating voltage of 1.7V to 3.6V
- Operating Temperature Range:
  - Extended Industrial -40°C to 105°C
  - Industrial -40°C to 85°C
  - Extended Commercial -20°C to 70°C
  - Commercial 0°C to 70°C
- Low Operating and Standby Current:
  - 5mA Operating (40MHz)
  - 15µA Standby
- Ultra Miniature Footprint:
  - 2.5mm x 2.0mm x 0.85mm
  - 3.2mm x 2.5mm x 0.85mm
  - 5.0mm x 3.2mm x 0.85mm
  - 7.0mm x 5.0mm x 0.85mm
- MIL-STD 883 Shock and Vibration Resistant
- AEC-Q100 Qualified




| | Pin 1 | Output Drive strength |
|---|---|---|
| DSC1001 | Standby | 15 pf |
| DSC1003 | Standby | 25 pf |
| DSC1004 | Standby | 40 pf |


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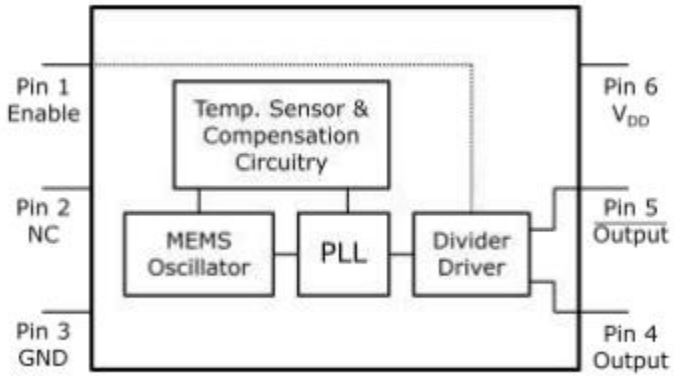
# DSC11x1/x5

Low Jitter MEMS oscillators -CMOS

Online Datasheet

## Features:

- Low RMS Phase Jitter: 1.7 ps (typ.  12k-20M)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 170MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function




| | Pin 1 | Output Drive Strength |
|---|---|---|
| DSC1101 | Standby | High |
| DSC1121 | OE | High |
| DSC1105 | Standby | Low |
| DSC1125 | OE | Low |


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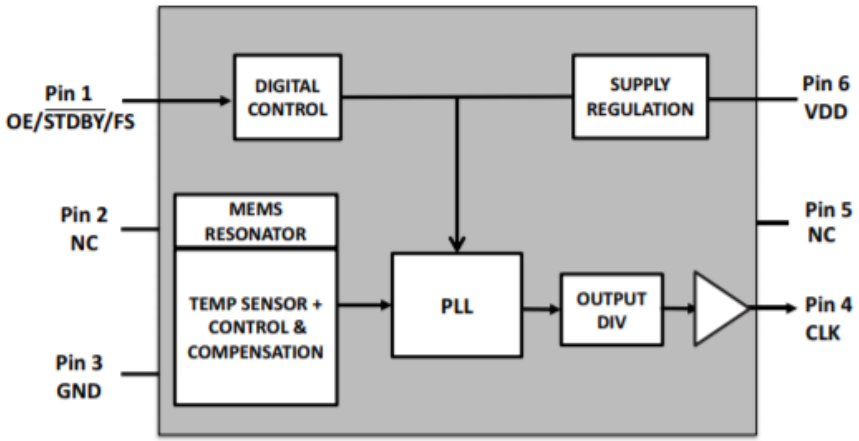
# DSC12x1

Low Jitter MEMS oscillators -CMOS

Online Datasheet

## Features:

- Low RMS Phase Jitter: 0.65 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range:
  - Automotive: -40°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.5 to 170MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby/Output Enable/Freuquency Select Function




| | Pin 1 |
|---|---|
| DSC1201 | Standby |
| DSC1211 | Frequency Select |
| DSC1221 | OE |


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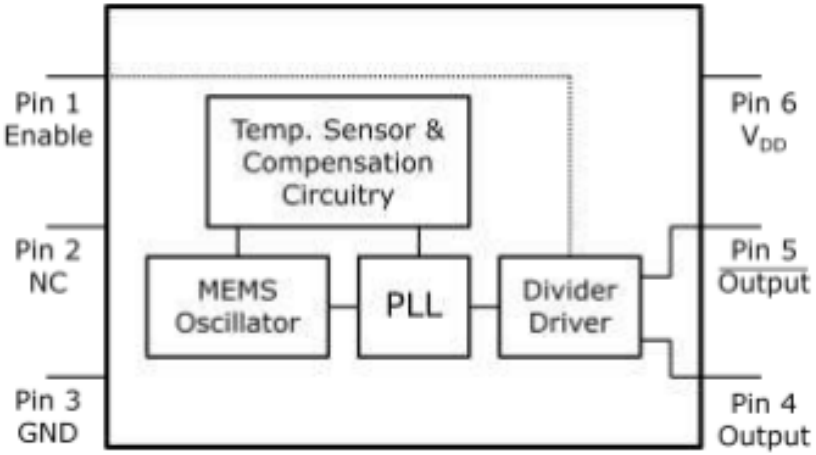
# DSC1102/1122

Low Jitter MEMS oscillator - LVPECL

Online Datasheet

## Features:

- Low RMS Phase Jitter: 1.7 ps (typ. 12k-20M)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function




| | Pin 1 |
|---|---|
| DSC1102 | Standby |
| DSC1122 | OE |


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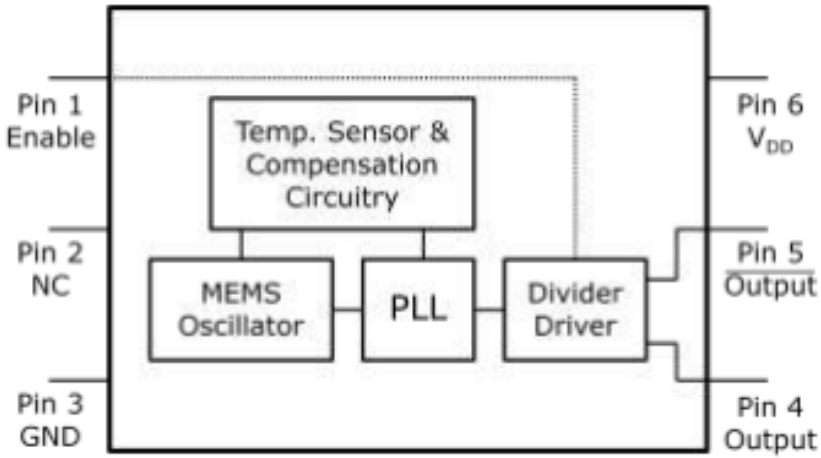
# DSC1103/1123

Low Jitter MEMS oscillator - LVDS

Online Datasheet

## Features:

- Low RMS Phase Jitter: 1.7 ps (typ. 12k-20M)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Extended industrial: -20°C to 105°C
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function




| | Pin 1 |
|---|---|
| DSC1103 | Standby |
| DSC1123 | OE |


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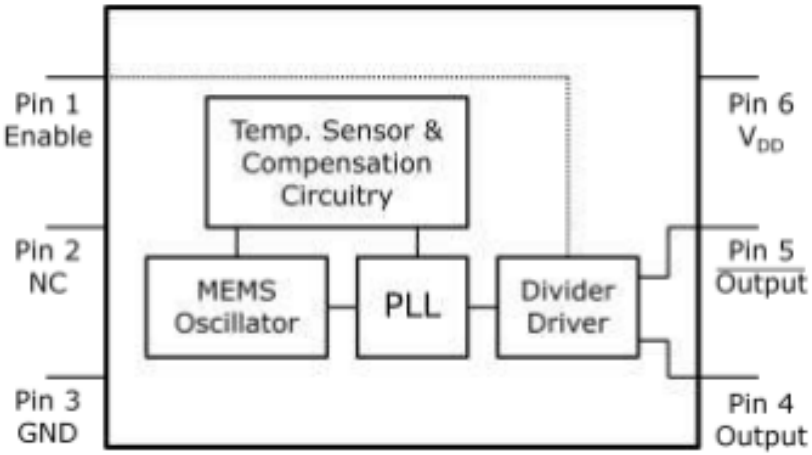
# DSC1104/1124

Low Jitter MEMS oscillator - HCSL

Online Datasheet

## Features:

- Low RMS Phase Jitter:  1.7 ps (typ. 12k-20M)
- Meet PCIe Gen1/2/3/4 Clock Spec
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range
  - Extended industrial: -20°C to 105°C
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
  - Qualified to MIL-STD-883
- High Reliability
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function




| | Pin 1 |
|---|---|
| DSC1104 | Standby |
| DSC1124 | OE |


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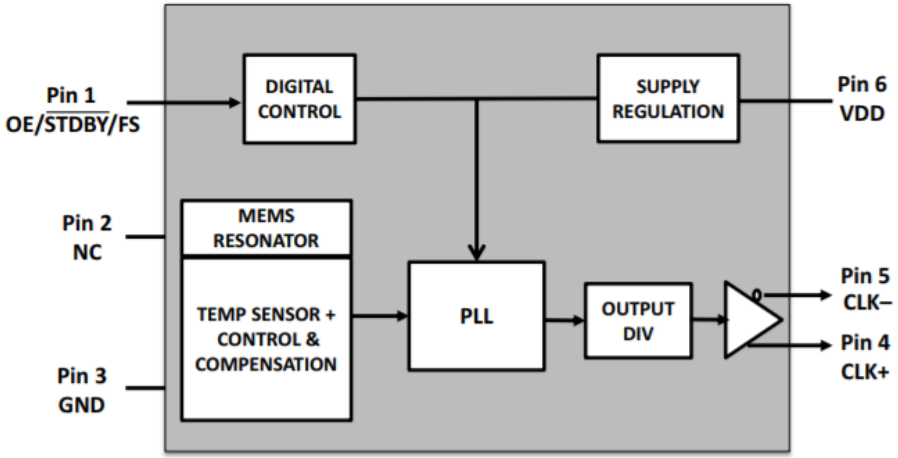
# DSC12x2

Low Jitter MEMS oscillators -LVPECL

Online Datasheet

## Features:

- Wide Freq. Range: 2.5 to 450MHz
- Low RMS Phase Jitter: 0.65 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range:
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby/Output Enable/Frequency Select Function




| | Pin 1 |
|---|---|
| DSC1202 | Standby |
| DSC1212 | Frequency Select |
| DSC1222 | OE |


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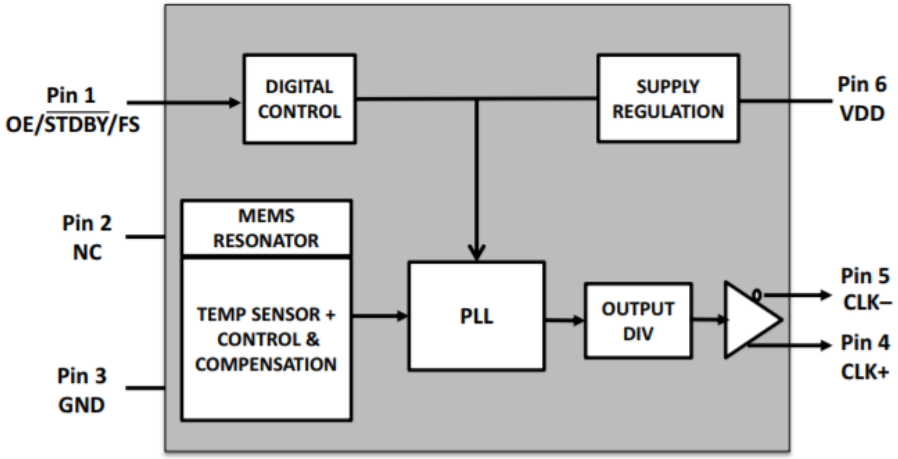
# DSC12x3

Low Jitter MEMS oscillators -LVDS

Online Datasheet

## Features:

- Wide Freq. Range: 2.5 to 450MHz
- Low RMS Phase Jitter: 0.65 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range:
  - Automotive: -40°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby/Output Enable/Frequency Select Function




| | Pin 1 |
|---|---|
| DSC1203 | Standby |
| DSC1213 | Frequency Select |
| DSC1223 | OE |


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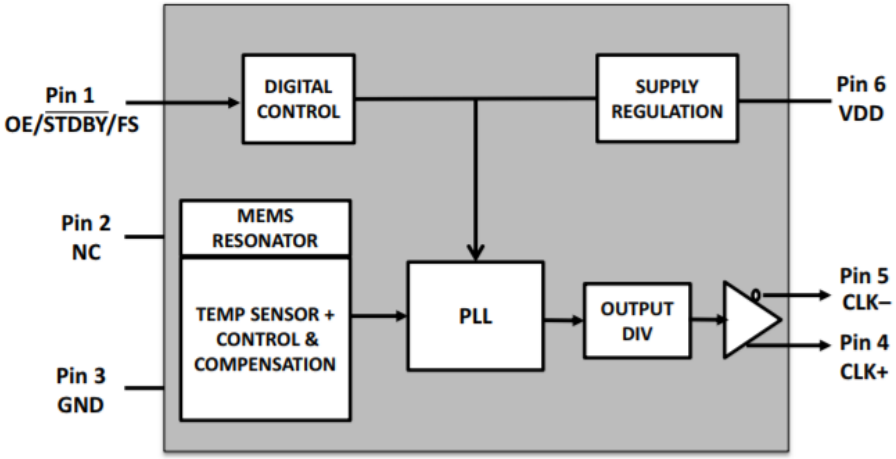
# DSC12x4

Low Jitter MEMS oscillators -LVPECL

Online Datasheet

## Features:

- Wide Freq. Range: 2.5 to 450MHz
- Low RMS Phase Jitter: 0.65 ps (typ. 12k-20M)
- Meets PCIe Gen1/2/3/4 Clock Specs
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range:
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby/Output Enable/Frequency Select Function




| | Pin 1 |
|---|---|
| DSC1204 | Standby |
| DSC1214 | Frequency Select |
| DSC1224 | OE |


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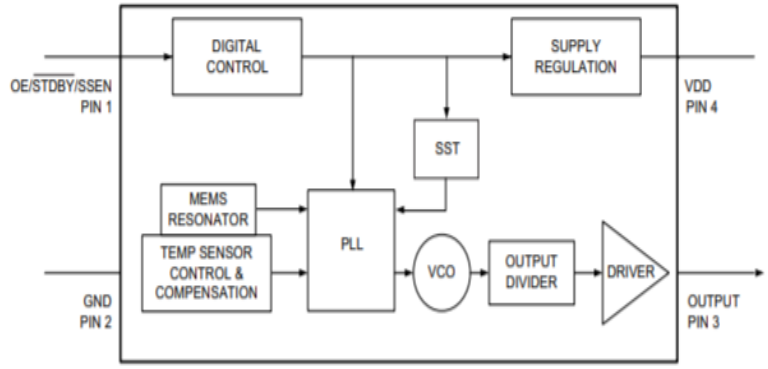
# DSC6300B

Ultra-Small, Spread Spectrum MEMS Oscillator

Online Datasheet

## Features:

- Output frequency range: 1M~100MHz
- Standard Oscillator pin out with spread spectrum clock output for EMI reduction
- Supports ±0.25 to ±2.5% center spread and -0.5% to -3% down spread
- Ultra-low power consumption:
- ~3mA (active), ~1uA (standby)
- Ultra-small package size:
- 1.6x 1.2mm, 2.0x1.6mm, 2.5x2.0mm, 3.2x2.5mm
- Pin 1 supports spread enable/disable input
- Supply voltage: 1.8/2.5/3.3V
- Supply Range of 1.71 to 3.63 V
- Temperature Range:
  - Automotive: -40° to 125° C
  - Extended Industrial: -40° to 105° C
  - Industrial: -40° to 85° C
  - Extended Commercial: -20° to 70° C




| | Pin 1 | Output Drive strength |
|---|---|---|
| DSC6301 | OE | 10 pf |
| DSC6302 | OE | 15 pf |
| DSC6311 | Standby | 10 pf |
| DSC6312 | Standby | 15 pf |
| DSC6331 | Spread Enable | 10 pf |
| DSC6332 | Spread Enable | 15 pf |


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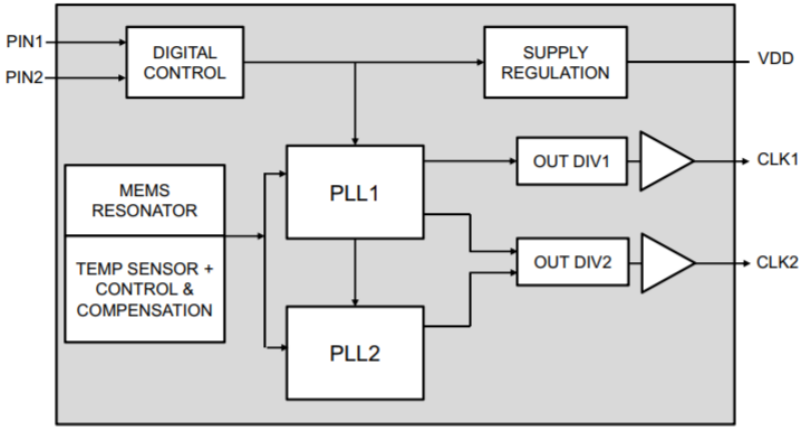
# DSC612

Ultra-Small, Low Power 2-output MEMS Clock Generator

Online Datasheet

## Features:

- 2 any-rate outputs from 2k~100MHz
- Replace 2 crystals/oscillators
- Ultra-low power consumption:
  ~3mA (active, 2 outputs), <1uA (standby)
- Ultra-small package:
  6-pin 1.6x 1.2mm / 2.0x1.6mm / 2.5x2.0mm 6L,
- High stability: ±20/25/50ppm
- Supply voltage: 1.71V -3.6V
- Supports Spread Spectrum clock output
- Supply Range of 1.71 to 3.63 V
- Temperature Range:
  - Automotive: -40° to 125° C
  - Extended Industrial: -40° to 105° C
  - Industrial: -40° to 85° C
  - Extended Commercial: -20° to 70° C





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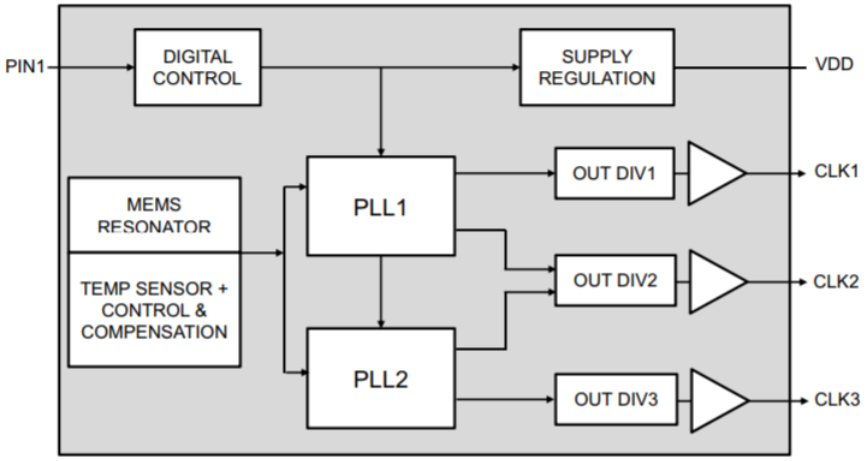
# DSC613

Ultra-Small, Low Power 3-output MEMS Clock Generator

Online Datasheet

## Features:

- 3 outputs from 2k~100MHz
- Replace 3 crystals/oscillators
- Ultra-low power consumption:
  ~5mA (active, 3 outputs), <1uA (standby)
- Ultra-small package:
  6-pin 1.6x 1.2mm / 2.0x1.6mm / 2.5x2.0mm,
- High stability: ±20/25/50ppm
- Supply voltage: 1.71V -3.6V
- Supports Spread Spectrum clock output
- Supply Range of 1.71 to 3.63 V
- Temperature Range:
  - Automotive: -40° to 125° C
  - Extended Industrial: -40° to 105° C
  - Industrial: -40° to 85° C
  - Extended Commercial: -20° to 70° C




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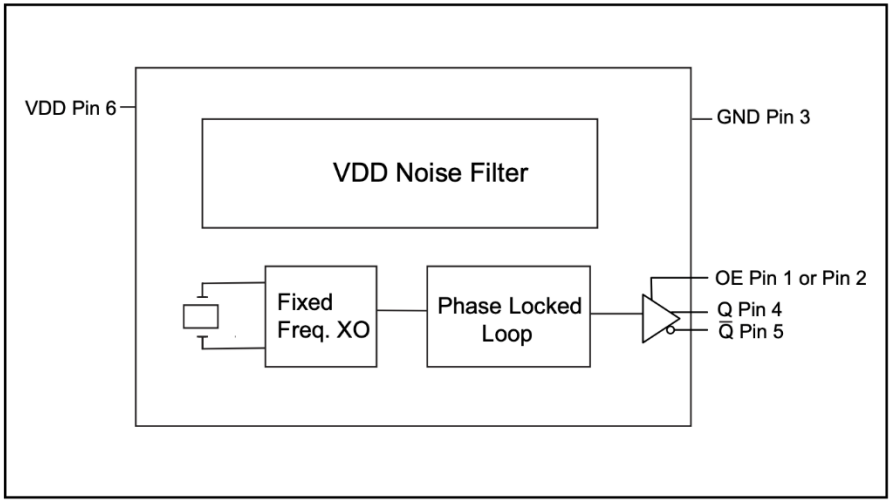
# MX55/57

Ultra-low Jitter Industry Standard Crystal Oscillators

Online Datasheet

## Features:

- Typical phase jitter: 200fs
- Supports 1 output
- Integrated crystal
- 2.5MHz to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard package:
  - MX55 - 3.2mm x 5mm
  - MX57 - 5mm x 7mm




| Part Number | Output Frequency (MHz) | Output Format | Frequency Stability (ppm) | Jitter (typ) (ps RMS) | Supply current (mA) | Supply voltage (V) | Temp. Range (°C) | Package size (mmxmm) | Custom Configuration |
|---|---|---|---|---|---|---|---|---|---|
| MX57 | <840 | LVCMOS LVPECL LVDS HSCL | ±50 | 0.2 | 70 | 2.25 to 3.63 | -20 to 70 -40 to 85 | 7.0x5.0 6L | ClockWorks Web tool |
| MX55 | <840 | | | | | | | 5.0x3.2 6L | |
| MX85 | <840 | | | 0.2 | 90 | | | 7.0x5.0 38-PIN LGA | |


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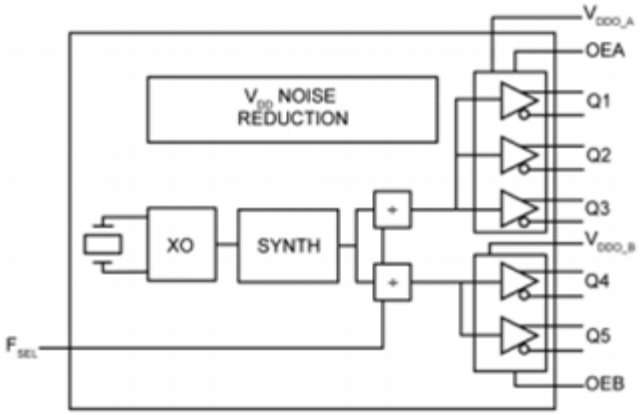
# MX85

LVDS, LVPECL, HCSL, CMOS

Online Datasheet

## Features:

- 230fs RMS Phase Jitter of Fanout
- Supports 5 outputs and 2 distinct frequencies up to –
  - 840MHz
- Complete clocking solution integrates the -
  - crystal, synthesizer, and fanout
- OTP configurable, customized samples within days
- FSEL enables in-circuit frequency selection
- 3.3V or 2.5V operation
- -40°C to +85°C ambient temperature range




| Part Number | Output Frequency (MHz) | Output Format | Frequency Stability (ppm) | Jitter (typ) (ps RMS) | Supply current (mA) | Supply voltage (V) | Temp. Range (°C) | Package size (mmxmm) | Custom Configuration |
|---|---|---|---|---|---|---|---|---|---|
| MX57 | <840 | LVCMOS LVPECL LVDS HSCL | ±50 | 0.2 | 70 | 2.25 to 3.63 | -20 to 70 -40 to 85 | 7.0x5.0 6L | ClockWorks Web tool |
| MX55 | <840 | | | | | | | 5.0x3.2 6L | |
| MX85 | <840 | | | 0.2 | 90 | | | 7.0x5.0 38-PIN LGA | |

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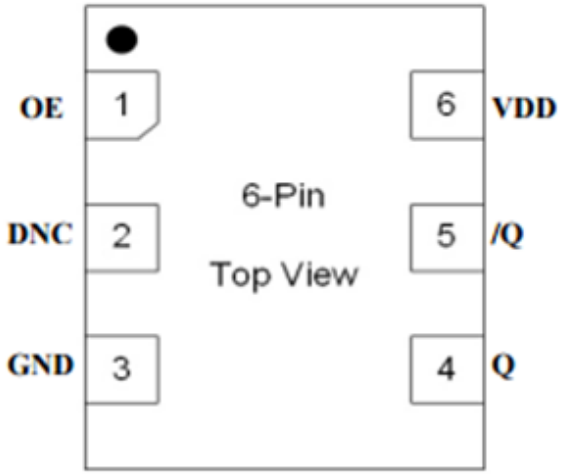
# MXT57

High-Frequency TCXO Oscillator

Online Datasheet

## Features:

- Supports 1 LVCMOS/LVPECL/LVDS/HSCL output
- Typical phase jitter: 0.2ps
- Guaranteed ±2.5ppm over -40°C to +85°C
- ±5ppm total frequency stability
- Integrated crystal
- Output up to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard 6-Pin 7mm x 5mm LGA package





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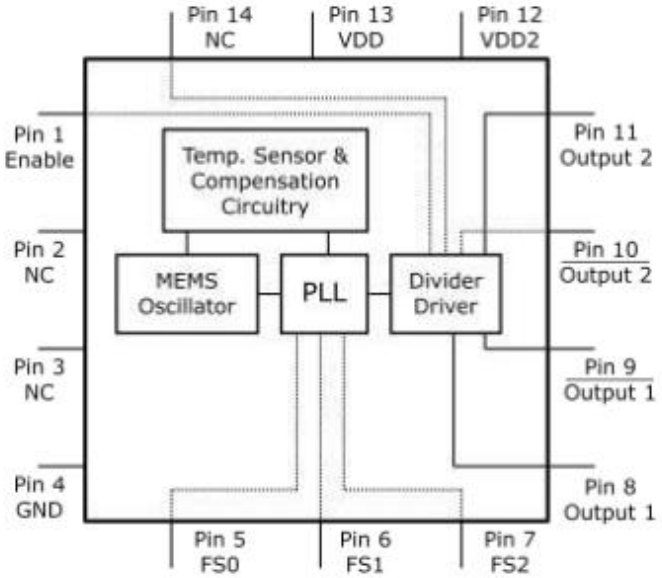
# DSC2XXX

Low-Jitter Configurable Dual-Output Oscillator

Online Datasheet

## Features:

- Wide Freq. Range: 2.3 to 460MHz
- Two configurable independent outputs:
  LVCMOS =1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range: -20°C to 105°C
- High Supply Noise Rejection: -50dBc
- Pin-Selectable Configurations:
- 3-bit Output Frequency Combinations
- Miniature Footprint of 3.2mm x 2.5mm, 14-pin
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Supply Range of 2.25V to 3.6V
- DSC20xx supports pin control
- DSC21xx supports I²C interface
- DSC22xx supports SPI interface





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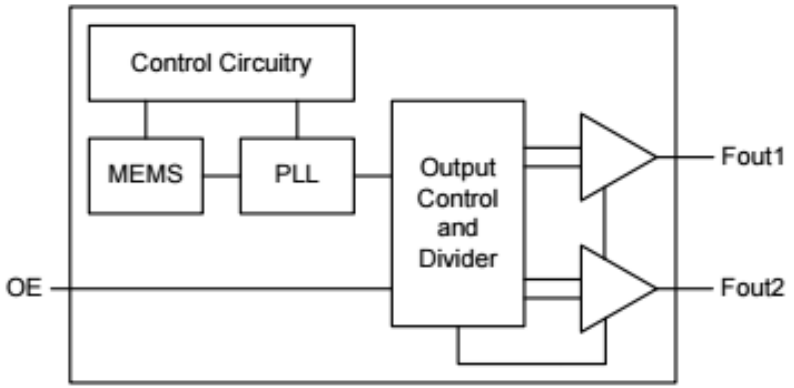
# DSC2311

Crystal-less™ Configurable Two-Output Clock Generator

Online Datasheet

## Features:

- Two Simultaneous CMOS Outputs:
  - Output 1 Range: 2.3 to 170MHz
  - Output 2 Range: 2.3 to 170MHz
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25 ppm; ±50 ppm
- Space Saving 6-pin 2.5 x 2.0mm Package
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- High Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than crystal-based clock -
    – generator designs
- Supply Range of 2.25V to 3.6V
- OE input to enable/disable output





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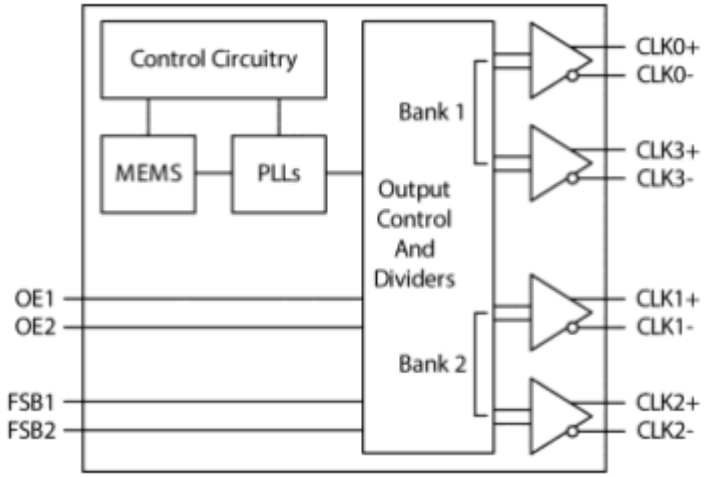
# DSC400

Configurable Four Output, Low Jitter Crystal-less™ Clock Generator

Online Datasheet

## Features:

- Wide frequency range: 2.3MHz to 460MHz
- Four format-configurable outputs: LVCMOS=1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25ppm, ±50ppm
- Wide Temperature Range:
  - Industrial: -40°C to +85°C
  - Ext. commercial: -20°C to +70°C
- High Supply Noise Rejection: -50dBc
- 20-pin QFN footprint (5.0mm x 3.2mm)
- Excellent shock and vibration immunity:
  - Qualified to MIL-STD-883
- Available pin-selectable frequency table:
  - 1 pin per bank for two frequency sets
- High Reliability: 20x better MTF than quartz -- based devices
- Wide supply range of 2.25V to 3.6V
-





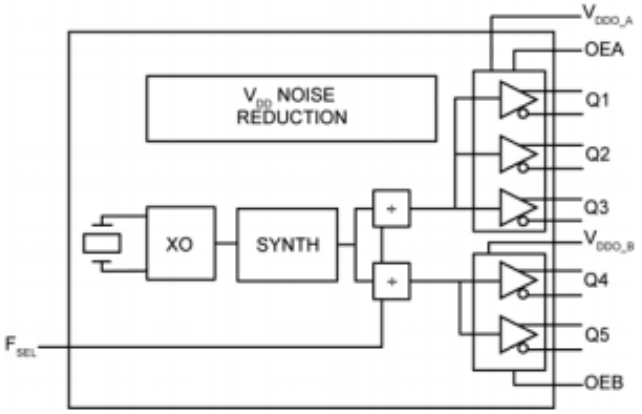
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# MX85

Online Datasheet

## Features:

- 230fs RMS Phase Jitter of Fanout
- Supports 5 outputs and 2 distinct frequencies:
  - Up to 840MHz
- Independently configurable output buffers:
  - LVDS, LVPECL, HCSL, CMOS
- Complete clocking solution integrates the crystal, -- synthesizer, and fanout
- OTP configurable, customized samples within days
- FSEL enables in-circuit frequency selection
- 3.3V or 2.5V operation
- -40°C to +85°C ambient temperature range




| Part Number | Output Frequency (MHz) | Output Format | Frequency Stability (ppm) | Jitter (typ) (ps RMS) | Supply current (mA) | Supply voltage (V) | Temp. Range (°C) | Package size (mmxmm) | Custom Configuration |
|---|---|---|---|---|---|---|---|---|---|
| MX57 | <840 | LVCMOS LVPECL LVDS HSCL | ±50 | 0.2 | 70 | 2.25 to 3.63 | -20 to 70 -40 to 85 | 7.0x5.0 6L | ClockWorks Web tool |
| MX55 | <840 | | | | | | | 5.0x3.2 6L | |
| MX85 | <840 | | | 0.2 | 90 | | | 7.0x5.0 38-PIN LGA | |

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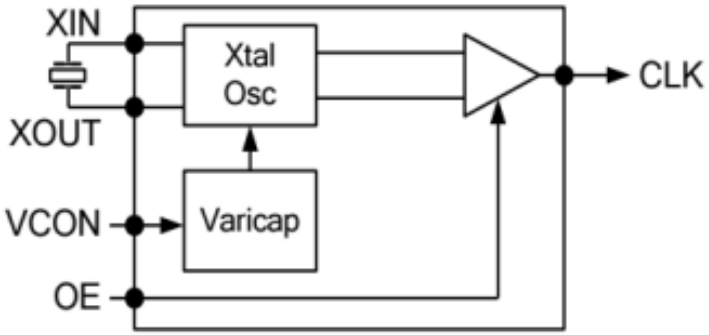
# PL500-17

Low cost, high performance and low phase noise VCXO

Online Datasheet

## Features:

- $V_{CXO}$ output for the 17MHz to 36MHz range
- Low phase noise (-130dBc @ 10kHz offset at – - 35.328MHz)
- LVCMOS output with OE tri-state control
- 17 to 36MHz fundamental crystal input
- Integrated high linearity variable capacitors
- 8mA drive capability at TTL output
- ±150 ppm pull range, max 5% (typ.) linearity
- Low jitter (RMS): 2.5ps period jitter
- 2.5V to 3.3V operation
- Available in: 8-Pin SOP, 6-pin SOT23, and Die





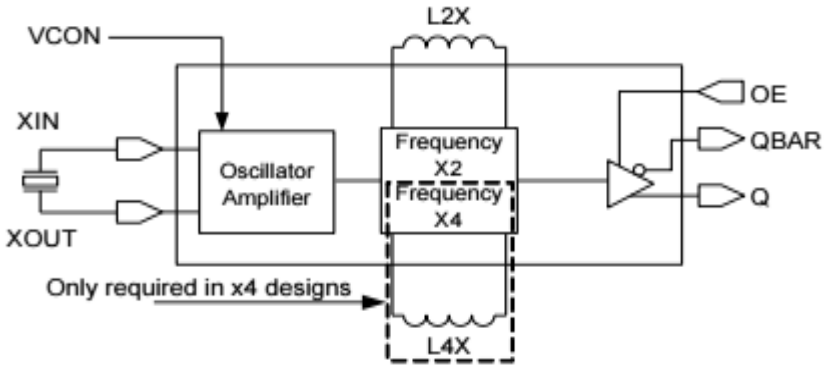
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# PL560-47

Balanced Oscillator

Online Datasheet

## Features:




- Non-PLL frequency multiplication
- Input frequency from 30-200MHz
- Output frequency from 60-800MHz
- Ultra-low jitter:
  - RMS phase jitter <0.25ps (12kHz-20MHz)
  - RMS random period jitter <25ps
- Low phase noise:
  - -142 dBc/Hz @100kHz offset from 155.52MHz
  - -150 dBc/Hz @10MHz offset from 155.52MHz
- High linearity pull range (typ. 5%)
- Low phase noise and jitter:
  - Equivalent to fundamental crystal at the output frequency
- ±120 PPM pullability $V_{CXO}$ Low input frequency eliminates the – - need for expensive crystals
- Differential output levels (PECL, LVDS), or single-ended CMOS
- Single 3.3V, ±10% power supply
- Temperature Range:
  - Commercial 0°C to +70°C
  - Industrial -40°C to +85°C
- Available in 16-pin TSSOP, 3x3 QFN packages, and die


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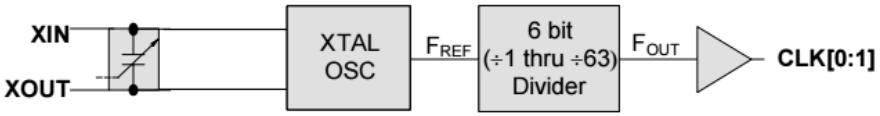
# PL610-01

1.8V to 3.3V, 1 MHz to 130 MHz XO IC

Online Datasheet

## Features:

- Wide frequency coverage, programmable, -
  - advanced oscillator design
- Programmable “Odd/Even” Divider up to 63
- Direct oscillation operation w/ optional –
  - programmable features:
    - Output Drive Strength (4, 8, or 16mA)
    - 6-bit Odd/Even Output Divider
- Input Frequency:
    - Fundamental Crystal: 5MHz to 130MHz
    - Reference Clock: 1MHz to 130MHz
- Supports CMOS or Sine Wave input clock
- Output Frequency: 20kHz to 130MHz
- Very low Jitter and Phase Noise
- Low current consumption
- Single 1.8V - 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 6-pin DFN, SOT-23 packages and die





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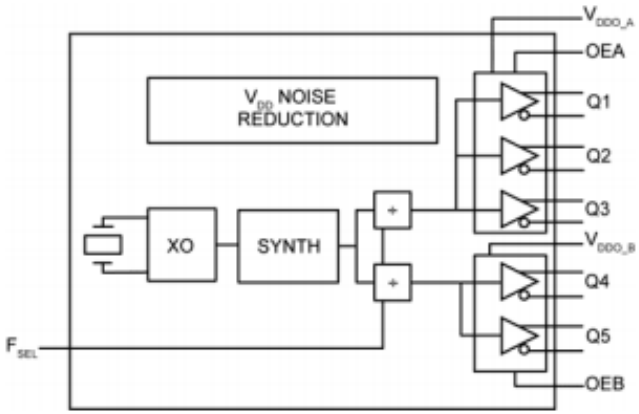
# MX85

CMOS, LVDS, LVPECL, HCSL

Online Datasheet

## Features:

- 230fs RMS Phase Jitter of Fanout
- Supports 5 outputs and 2 distinct frequencies up to -
  - 840MHz
- Independently configurable output buffers:
  - LVDS, LVPECL, HCSL, CMOS
- Complete clocking solution integrates the -
  - crystal, synthesizer, and fanout
- OTP configurable, customized samples within days
- FSEL enables in-circuit frequency selection
- 3.3V or 2.5V operation
- -40°C to +85°C ambient temperature range




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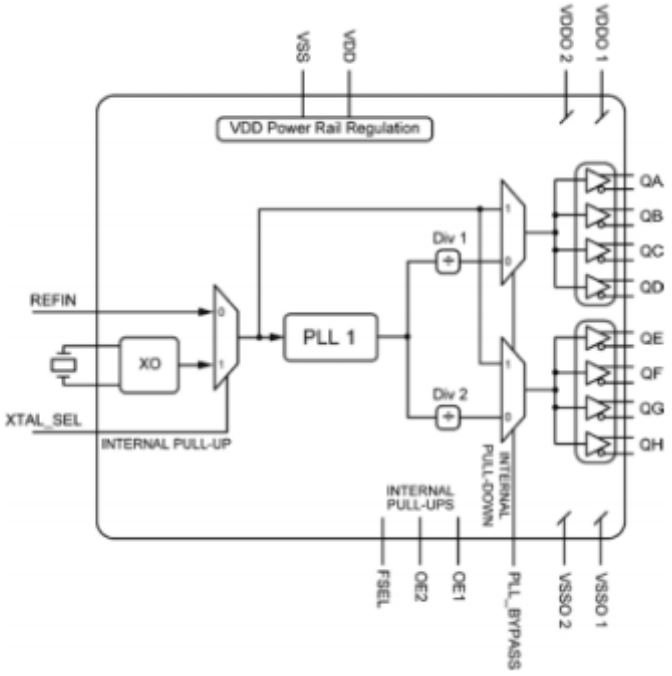
# SM802XXX

Flexible Ultra-Low Jitter Clock Synthesizer

Online Datasheet

## Features:

- 115fs at 156.25MHz (1.875MHz to 20MHz)
- 245fs at 156.25MHz (12kHz to 20MHz)
- On chip power supply regulation:
  - Excellent board level power supply noise – - immunity
- Generates up to 8 combinations of differential - - or 16 single-ended clock outputs.
- LVPECL, LVDS, HCSL, LVCMOS (SE or Diff)
- Selectable input:
  - Crystal: 11MHz to 30MHz
  - Reference input: 11MHz to 80MHz
- No external crystal oscillator capacitors required
- 2.5V or 3.3V operating power supply
- Industrial temperature range: -40°C to +85°C
- Available QFN packages:
  - 44-pin 7mm x 7mm
  - 32-pin 5mm x 5mm
  - 24-pin 4mm x 4mm
  - 16-pin 3mm x 3.5mm





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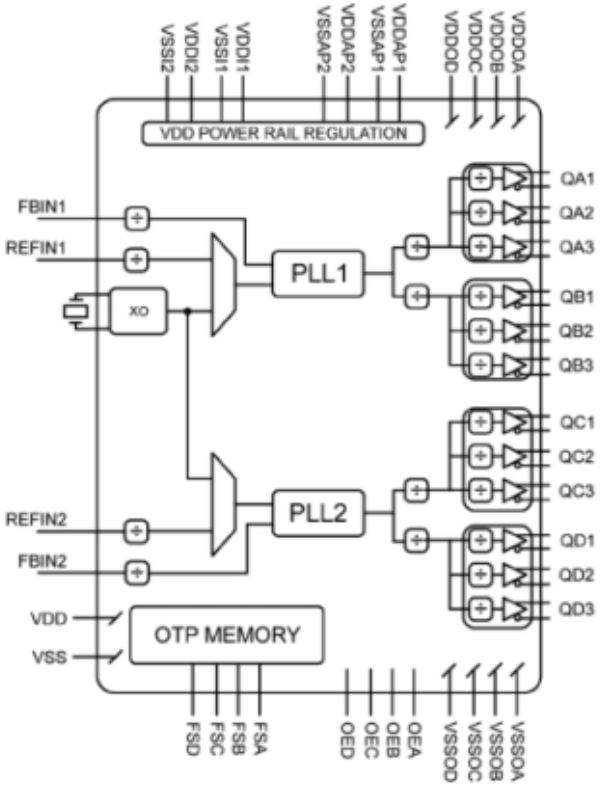
# SM803XXX

Flexible Ultra-Low Jitter Clock Synthesizer

Online Datasheet

## Features:

- Generates up to 12 differential or single-ended frequencies:
  - 75fs phase jitter @ 156.25MHz (1.875MHz to 20MHz)
  - 180fs phase jitter @ 156.25MHz (12KHz to 20MHz)
- Two PLL synthesizers to generate multiple frequencies
- Independently programmable output logic and frequency
- Output logic: LVPECL, LVDS, HCSL, LVCMOS
- Selectable input:
  - Crystal: 12MHz to 50MHz
  - Reference Input: 12MHz to 850MHz
- No external crystal oscillator capacitors required
- 3.3V or 2.5V operating power supply
- Separate output power supplies:
  - Each bank can be at different levels
- Feedback input pins for use as zero delay buffer
- On chip power supply regulation for excellent power – - supply noise immunity
- Temperature Range:
  - Commercial 0°C to +70°C
  - Industrial -40°C to +85°C
- Available in 84-pin 7mm × 7mm QFN package




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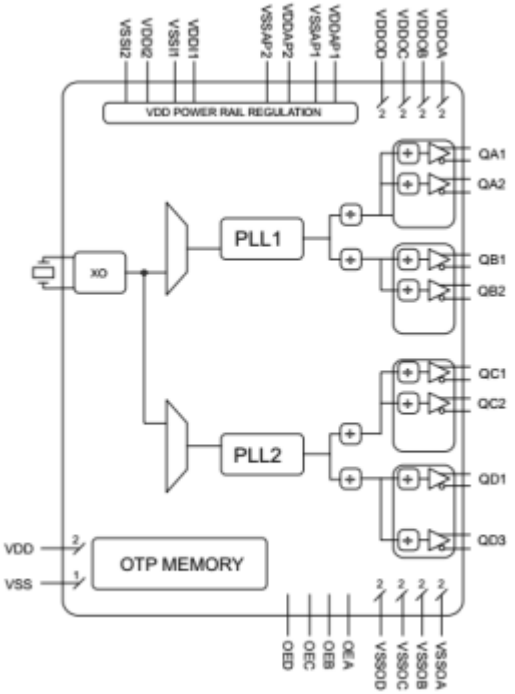
# SM813XXX

Flexible Ultra-Low Jitter Clock Synthesizer

Online Datasheet

## Features:

- Generates up to 18 differential or single-ended frequencies:
  - <65fs phase jitter @ 156.25MHz (1.875MHz to 20MHz)
  - <115fs phase jitter @ 156.25MHz (12KHz to 20MHz)
- Two PLL synthesizers to generate multiple frequencies
- Independently programmable output logic and frequency
- Output logic: LVPECL, LVDS, HCSL, LVCMOS
- Selectable input:
  - Crystal: 31.25MHz to 156.25MHz
- No external crystal oscillator capacitors required
- 3.3V or 2.5V operating power supply
- Separate output power supplies:
  - Each bank can be at different levels (4 banks of 2 – - outputs each)
- On chip power supply regulation for excellent power supply - – noise immunity
- Supports Commercial or Industrial temperature ranges
- Temperature Range:
  - Commercial 0°C to +70°C
  - Industrial -40°C to +85°C
- Available in 48-pin 7mm × 7mm QFN package





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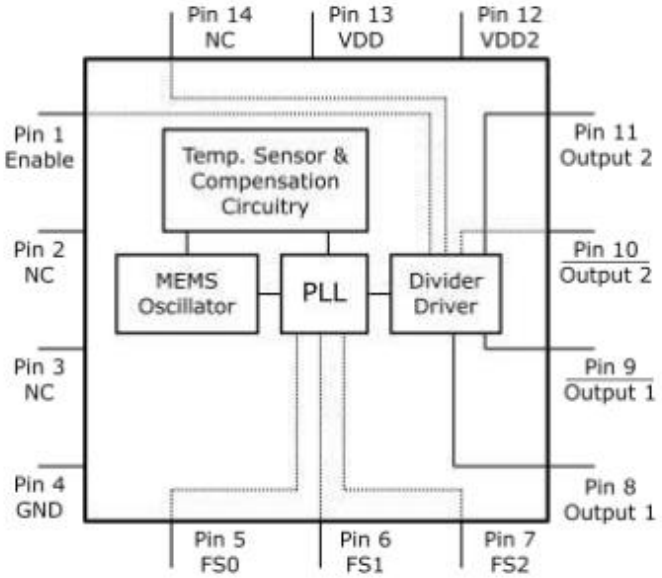
# DSC2XXX

Low-Jitter Configurable Dual-Output Oscillator

Online Datasheet

## Features:

- Wide Freq. Range: 2.3 to 460MHz
- Two configurable independent outputs:
  LVCMOS =1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range: -20°C to 105°C
- High Supply Noise Rejection: -50dBc
- Pin-Selectable Configurations:
- 3-bit Output Frequency Combinations
- Miniature Footprint of 3.2mm x 2.5mm, 14-pin
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Supply Range of 2.25V to 3.6V
- DSC20xx supports pin control
- DSC21xx supports I²C interface
- DSC22xx supports SPI interface





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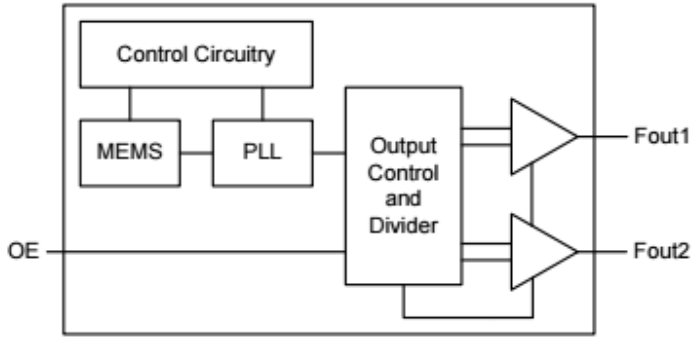
# DSC2311

Crystal-less™ Configurable Two-Output Clock Generator

Online Datasheet

## Features:

- Two Simultaneous CMOS Outputs:
  - Output 1 Range: 2.3 to 170MHz
  - Output 2 Range: 2.3 to 170MHz
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25 ppm; ±50 ppm
- Space Saving 6-pin 2.5 x 2.0mm Package
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- High Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than crystal-based clock -
    – generator designs
- Supply Range of 2.25V to 3.6V
- OE input to enable/disable output





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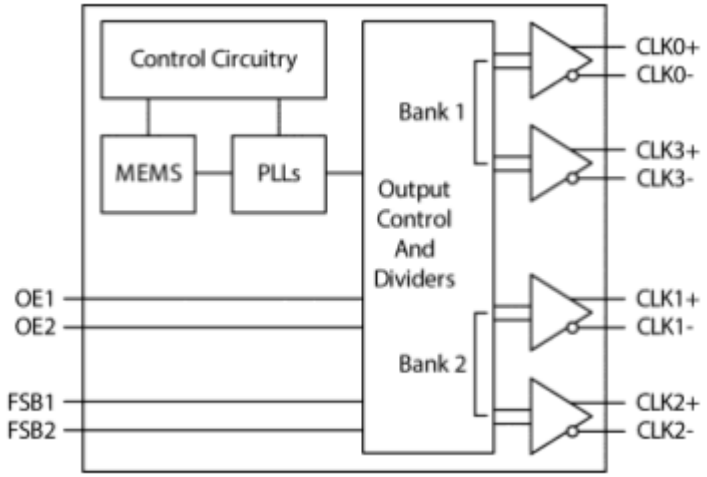
# DSC400

Configurable Four Output, Low Jitter Crystal-less™ Clock Generator

Online Datasheet

## Features:

- Wide frequency range: 2.3MHz to 460MHz
- Four format-configurable outputs: LVCMOS=1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25ppm, ±50ppm
- Wide Temperature Range:
  - Industrial: -40°C to +85°C
  - Ext. commercial: -20°C to +70°C
- High Supply Noise Rejection: -50dBc
- 20-pin QFN footprint (5.0mm x 3.2mm)
- Excellent shock and vibration immunity:
  - Qualified to MIL-STD-883
- Available pin-selectable frequency table:
  - 1 pin per bank for two frequency sets
- High Reliability: 20x better MTF than quartz -- based devices
- Wide supply range of 2.25V to 3.6V
-





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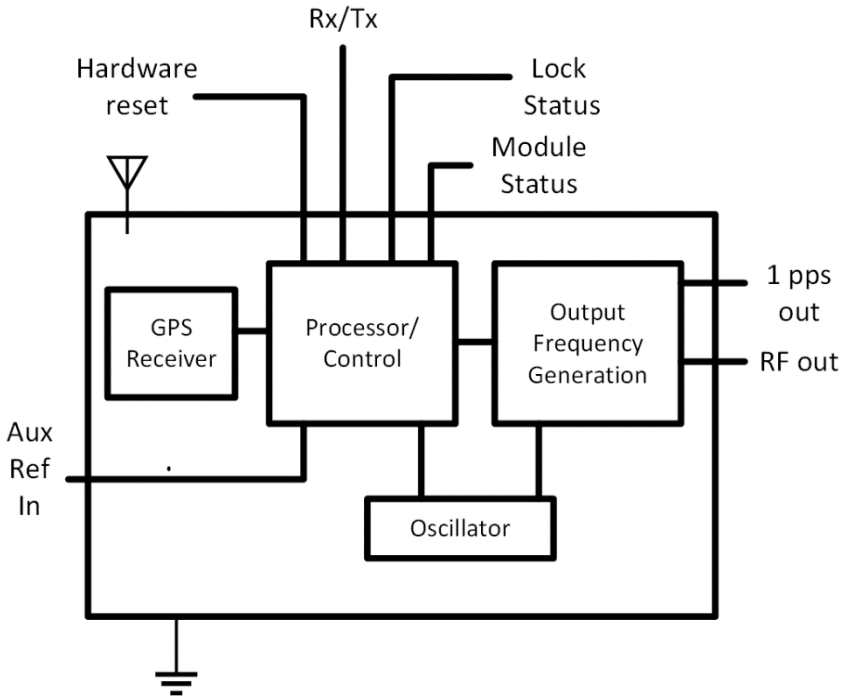
# MD-2610-OCXO

Compact GNSSDOCXO

Online Datasheet

## Features:

- Smallest GPSDO on market
- Embedded TCXO
- Frequency Range: 5 to 40 MHz
- 10 MHz
- Standard Frequency: 10 MHz
- Number of PPS outputs: 1
- Output: CMOS
- Footprint: 25 x 20 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Auxiliary PPS Input
- Embedded GPS Receiver
- GNSS Signal Types: GPS, GLONASS, QZSS, WAAS, MSAS, EGNOS,GAGAN
- 1.5 us holdover for 10 hours at constant temperature
- 8 us holdover for 24 hours at constant temperature




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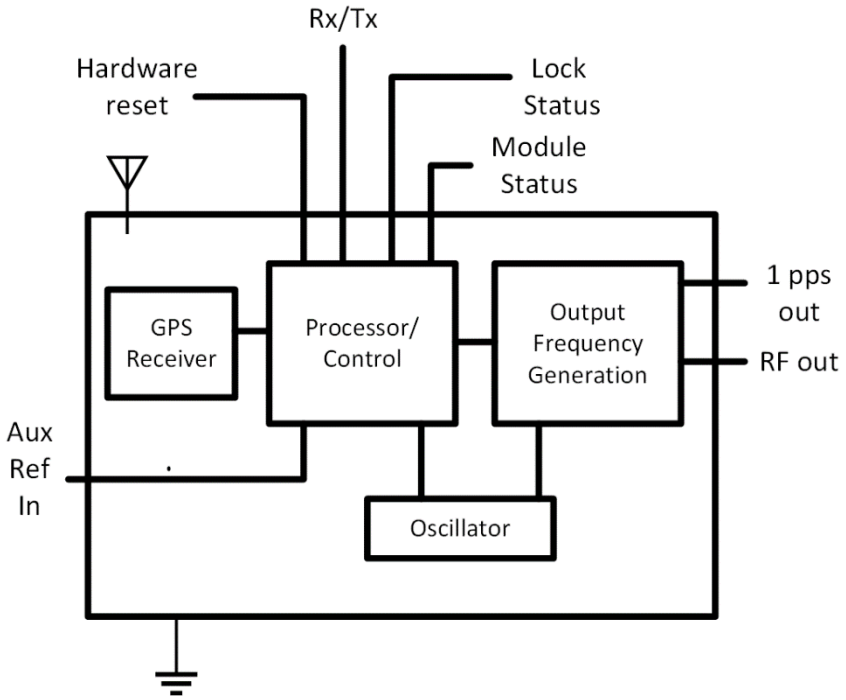
# MD-2610-TCXO

Compact GNSSDTCXO

Online Datasheet

## Features:

- Smallest GPSDO on market
- Embedded OCXO
- Frequency Range: 5 to 40 MHz
- 10 MHz
- Standard Frequency: 10 MHz
- Number of PPS outputs: 1
- Output: CMOS
- Footprint: 25 x 20 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Auxiliary PPS Input
- Embedded GPS Receiver
- GNSS Signal Types: GPS, GLONASS, QZSS, WAAS, MSAS, EGNOS,GAGAN
- 1.5 us holdover for 1.4 hours at constant temperature
- 400 us holdover for 24 hours at constant temperature




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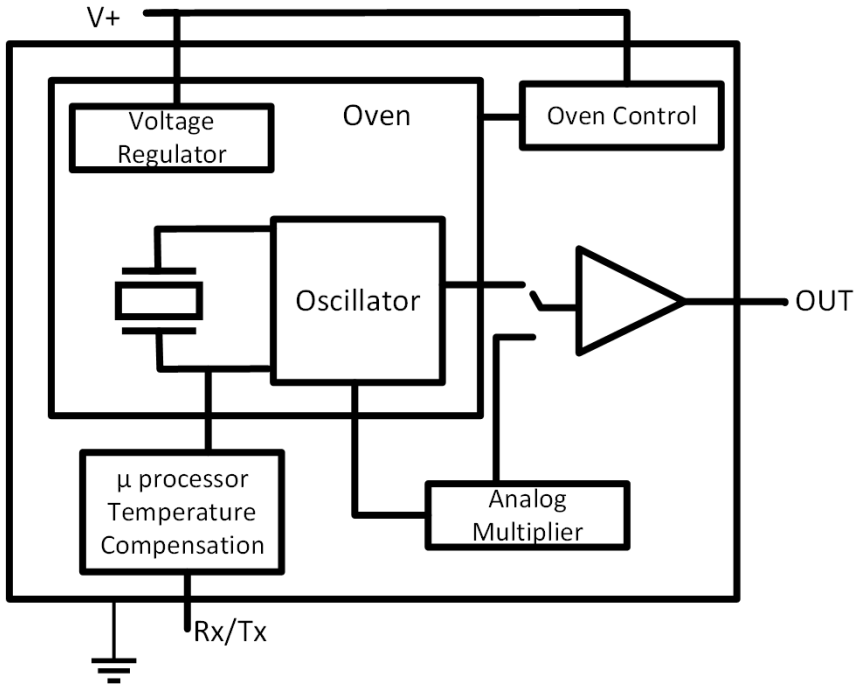
# MD-173

Coefficient OCXO

Online Datasheet

## Features:

- Serial interface provides frequency vs. temperature information
- Frequency Range: 5 to 20 MHz
- Standard Frequencies: 5,10 MHz
- Output: CMOS, Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 5, 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.8 ppb
- Aging per Day: 0.06 ppb
- Serial communications Interface




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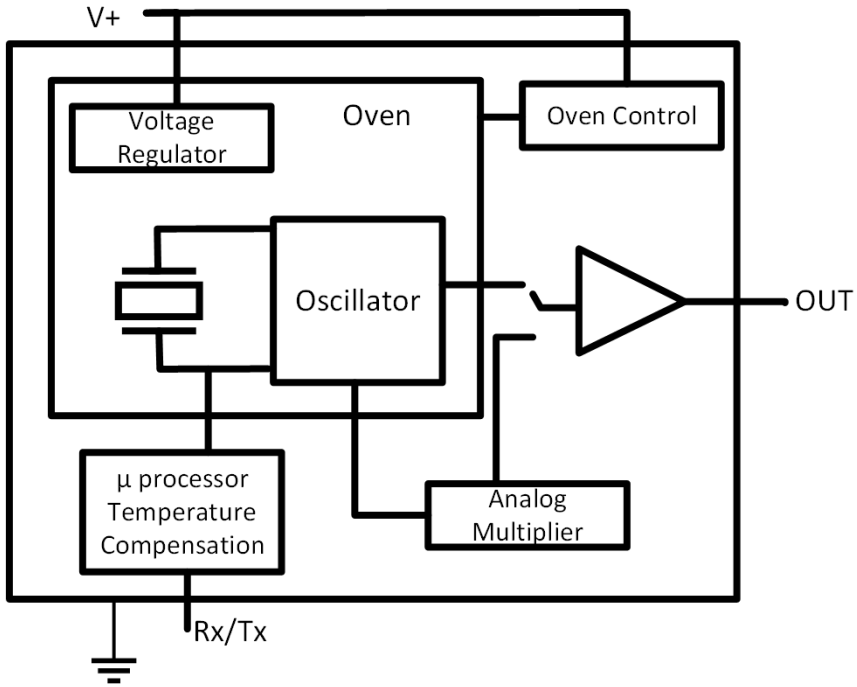
# MD-223

Coefficient OCXO

Online Datasheet

## Features:

- Serial interface provides frequency vs. temperature information
- Frequency Range: 10 to 30.72 MHz
- Output: CMOS
- Footprint: 25 x 22 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 3 ppb
- Aging per Day: 0.5 ppb
- Serial communications Interface




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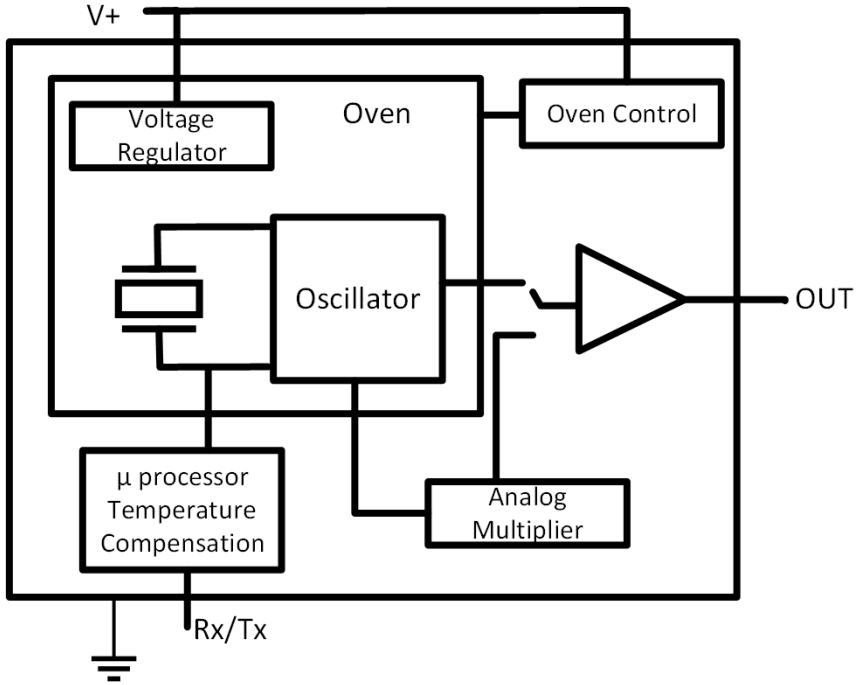
# MD-228

Coefficient OCXO

Online Datasheet

## Features:

- Serial interface provides frequency vs. temperature information
- Frequency Range: 10 to 20 MHz
- Standard Frequencies: 10, 20 MHz
- Output: CMOS
- Footprint: 25 x 22 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 3 ppb
- Aging per Day: 0.1 ppb
- Serial communications Interface




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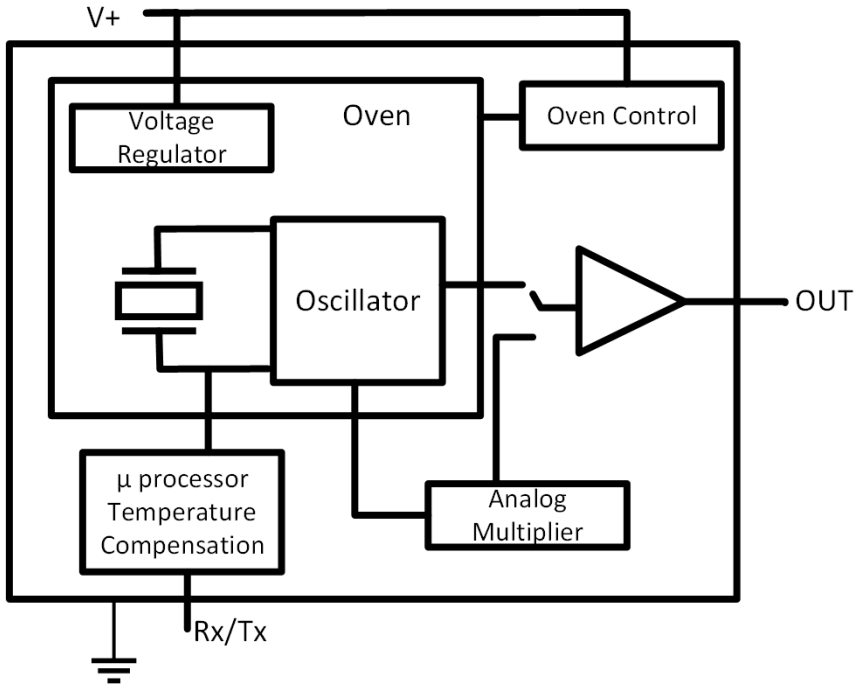
# MD-403

Coefficient OCXO

Online Datasheet

## Features:

- Serial interface provides frequency vs. temperature information
- Frequency Range: 10 to 40 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1 W
- Temperature Range: -40 to 95 °C
- Temperature Stabilty over Operating Temperature Range: 10 ppb
- Aging per Day: 1 ppb
- Serial communications Interface




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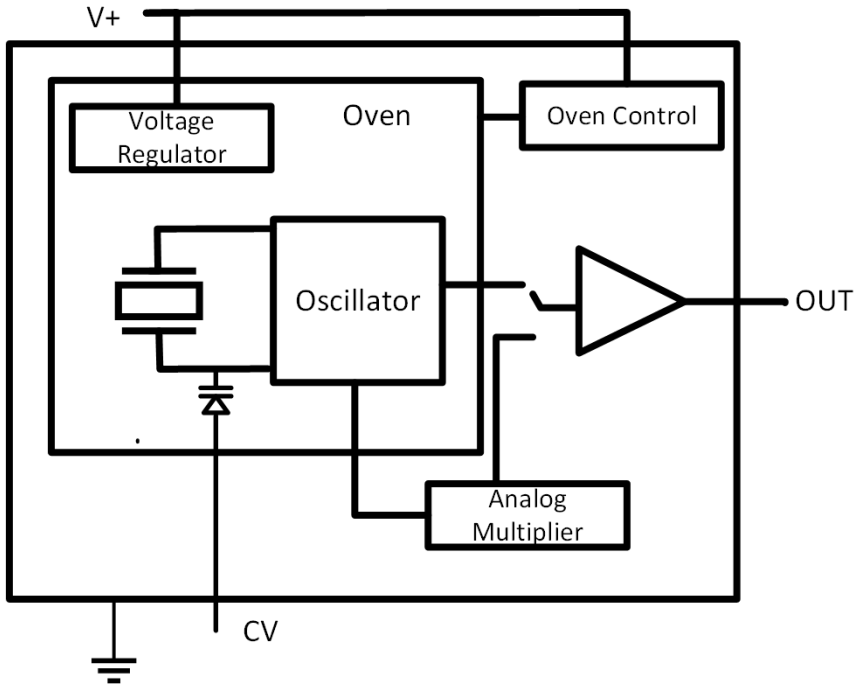
# OX-171

High stability OCXO

Online Datasheet

## Features:

- Highest Stability OCXO in portfolio
- Frequency Range: 5 to 20 MHz
- Standard Frequencies: 5, 10, 20 MHz
- Output: CMOS, Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 3.3, 5, 12 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.4 ppb
- Temperature Stabilty -20 to 70°C: 0.6 ppb
- Temperature Stabilty -40 to 85°C: 0.8 ppb
- Aging per Day: 0.06 ppb
- Aging per Year: 15 ppb
- ADEV @ 1 s tau: 5.00E-12 @10 MHz carrier




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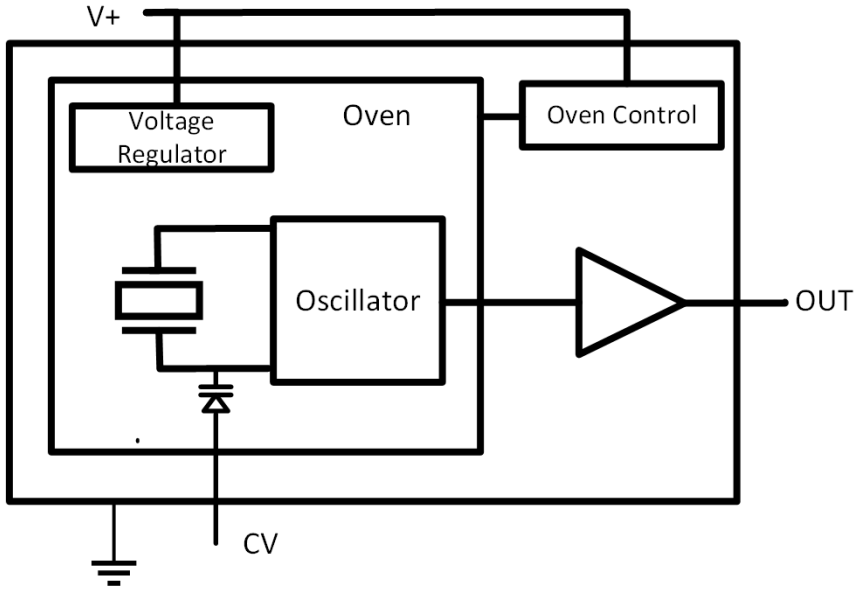
# OX-208

High Stability OCXO

Online Datasheet

## Features:

- High Stability, 1x1 OCXO
- Frequency Range: 5 to 20 MHz
- 10 MHz
- Standard Frequency: 10 MHz
- Output: CMOS, Sine
- Footprint: 25 x 25 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 2 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.4 ppb
- Temperature Stabilty -20 to 70°C: 0.6 ppb
- Temperature Stabilty -40 to 85°C: 0.8 ppb
- Aging per Day: 0.15 ppb
- Aging per Year: 20 ppb
- ADEV @ 1 s tau: 5.00E-12 @10 MHz carrier




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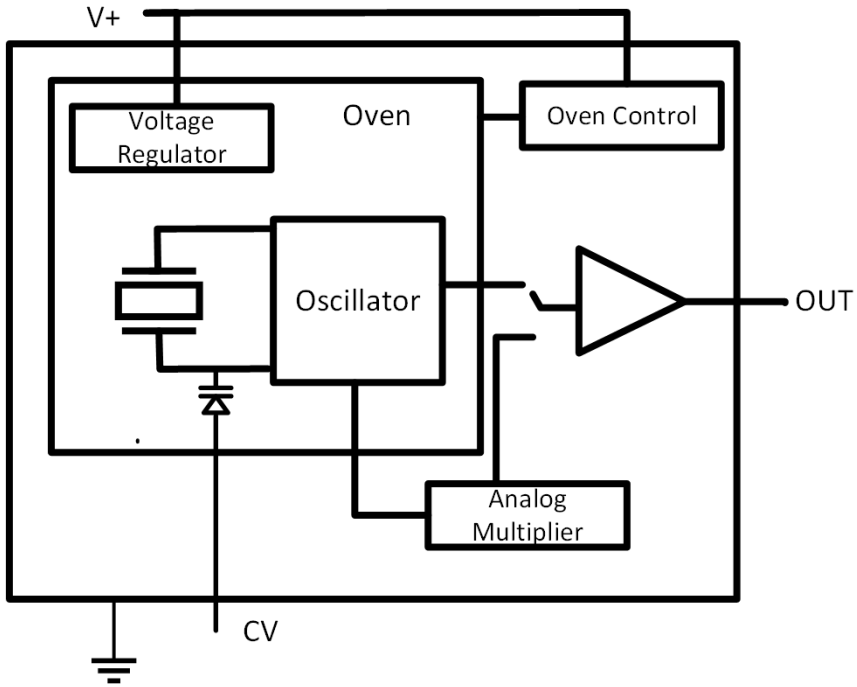
# OX-221

High Stability OCXO

Online Datasheet

## Features:

- High Stability  22x25 mm OCXO
- Frequency Range: 10 to 30.72 MHz
- Standard Frequencies: 10, 20, 30.72 MHz
- Output: CMOS
- Footprint: 25 x 22 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.35 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 3 ppb
- Temperature Stabilty -20 to 70°C: 3 ppb
- Temperature Stabilty -40 to 85°C: 3 ppb
- Aging per Day:  0.5 ppb
- Aging per Year:  60 ppb




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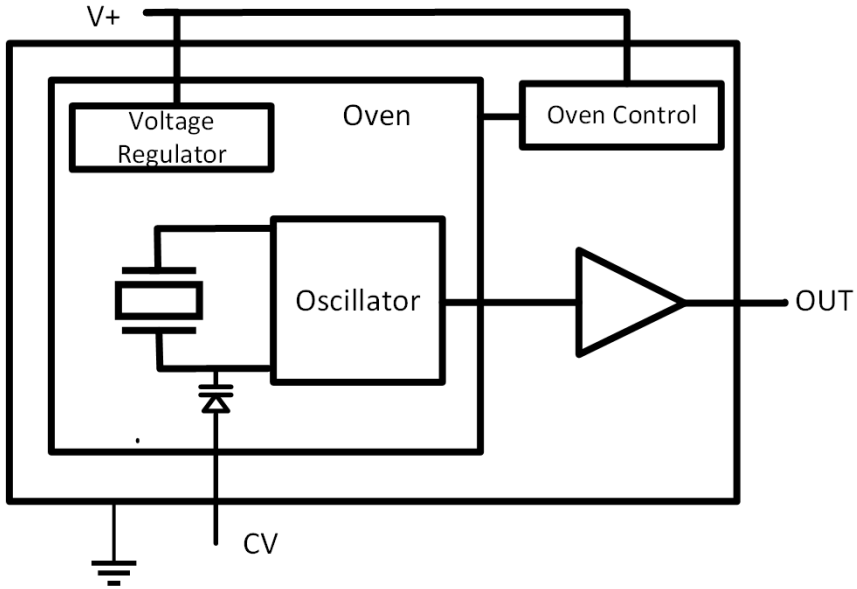
# OX-228

High stability OCXO

Online Datasheet

## Features:

- High Stability  22x25 mm OCXO
- Frequency Range: 10 to 20 MHz
- Standard Frequencies: 10, 20 MHz
- Output: CMOS
- Footprint: 25 x 22 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.35 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 1 ppb
- Temperature Stabilty -20 to 70°C: 1 ppb
- Temperature Stabilty -40 to 85°C: 1 ppb
- Aging per Day:  0.1 ppb
- Aging per Year:  200 ppb




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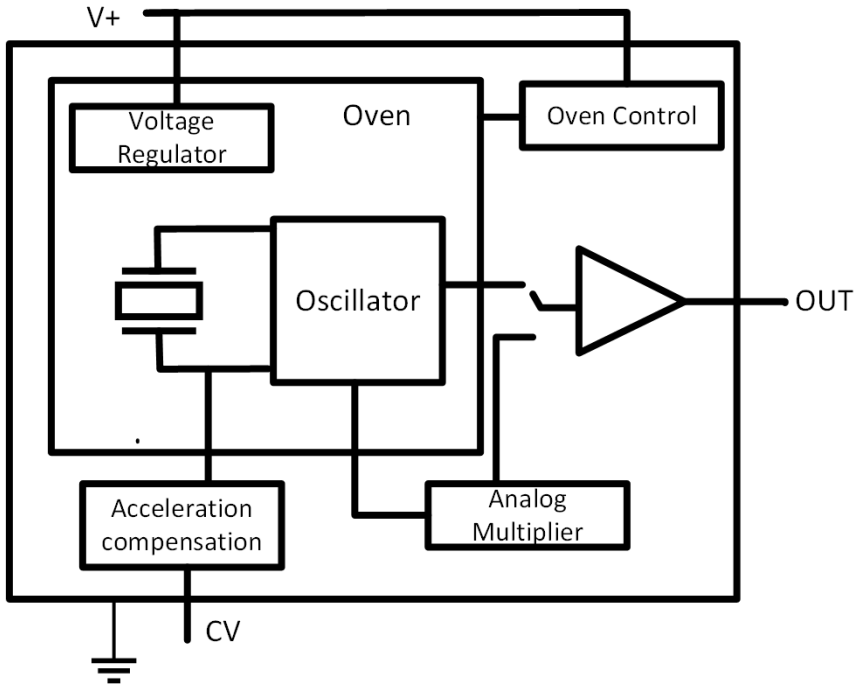
# OX-043

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -170 dBc/Hz @10 MHz carrier




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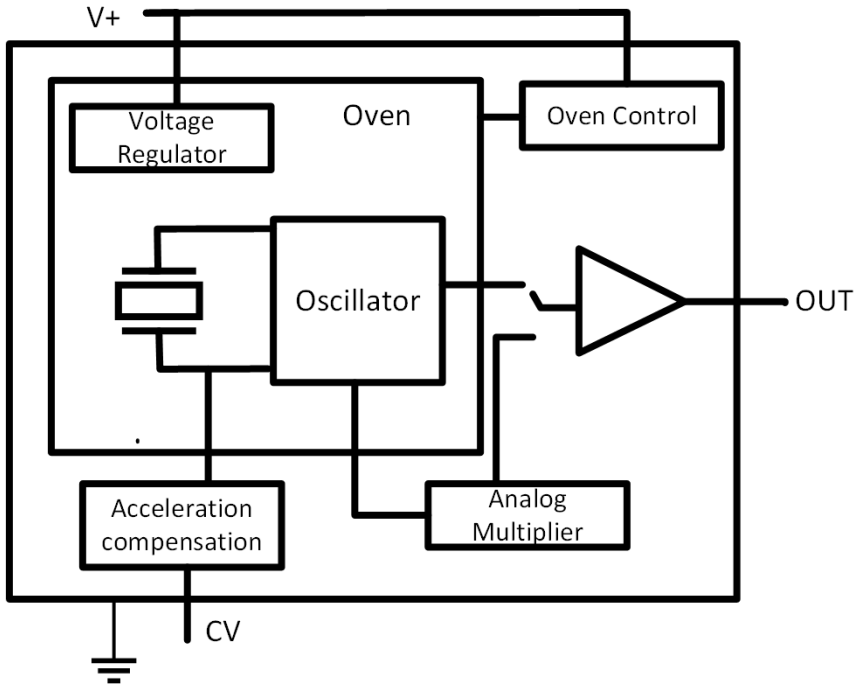
# OX-046

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 50 to 250 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.05 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @100 MHz carrier




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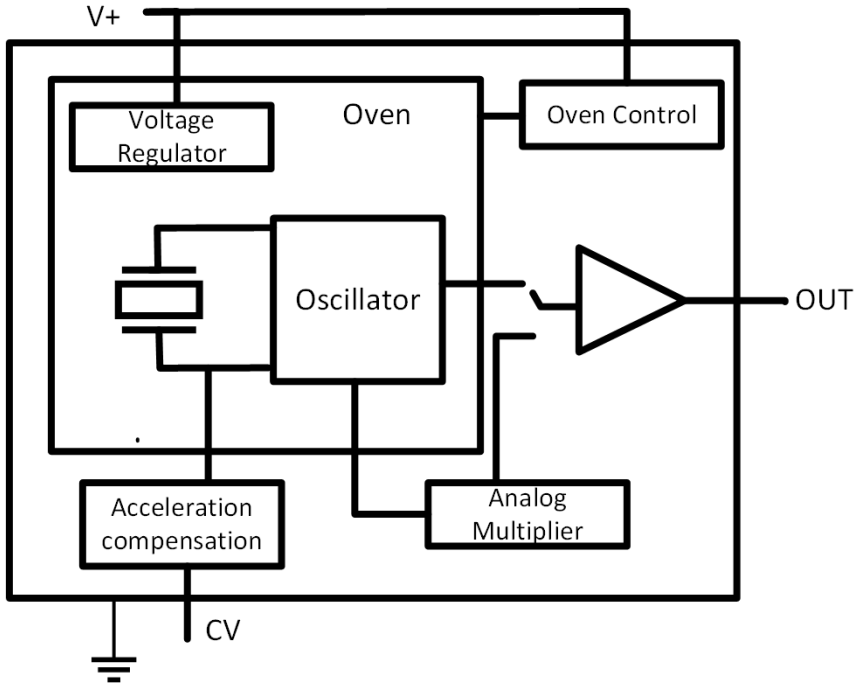
# OX-080

Low g OCXO

Online Datasheet

## Features:

- Smallest form factor Low g OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 38 x 38 mm, chassis
- Supply Voltage: 12 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -127 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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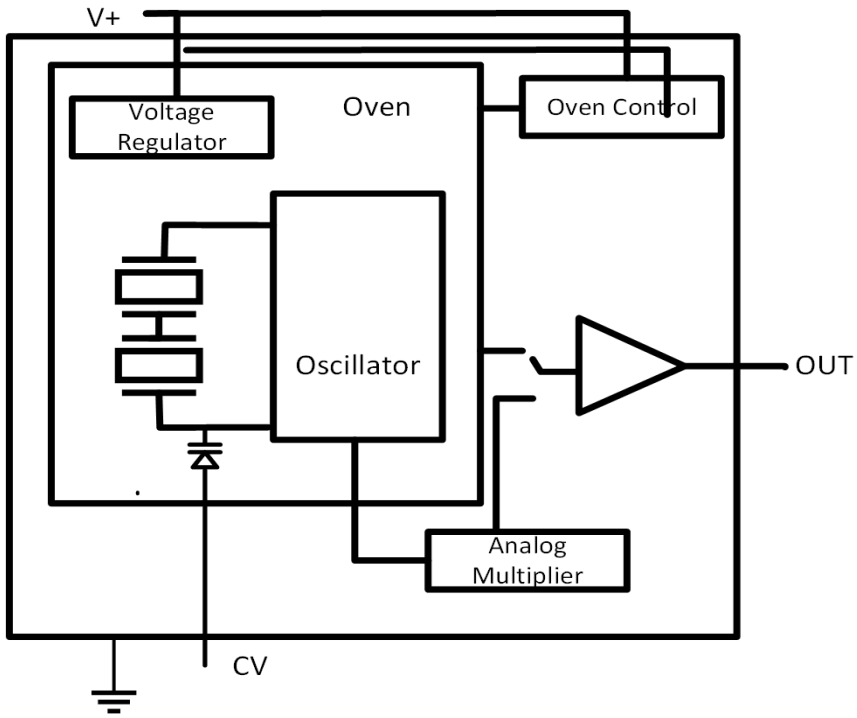
# OX-407

Low g OCXO

Online Datasheet

## Features:

- dual crystal, small form factor, low g OCXO
- Target Market: Military
- Frequency Range: 10 to 50 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.07 ppb/g
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Phase Noise 10 Hz offset: -84 dBc/Hz @40 MHz carrier
- Phase Noise 100 kHz offset: -150 dBc/Hz @40 MHz carrier




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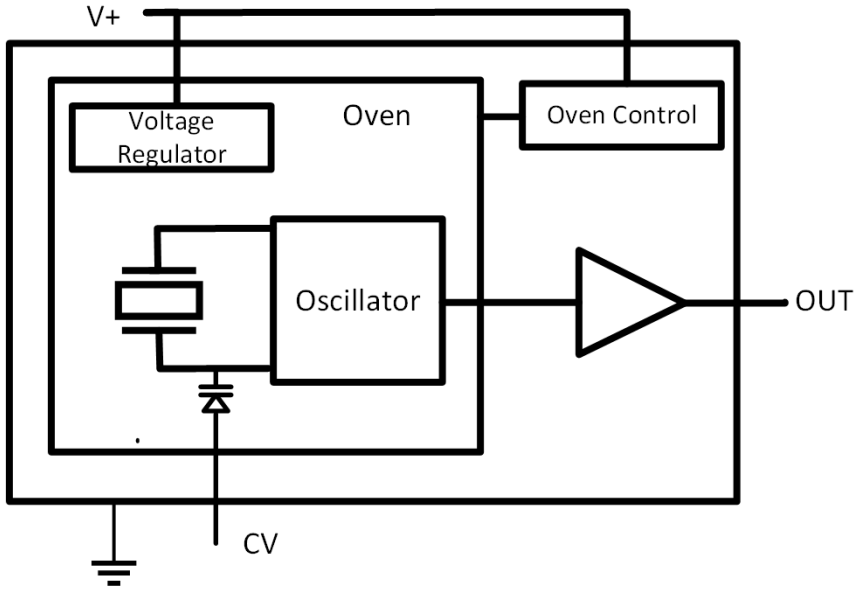
# OX-990

Low g OCXO

Online Datasheet

## Features:

- passive cancellation low g OCXO
- Target Market: Military
- Frequency Range: 60 to 120 MHz
- Output: Sine
- Footprint: 58 x 48 mm, chassis
- Supply Voltage: 15 V
- Power: 3 W
- 0.5 ppb/g
- Temperature Range: -40 to 85 °C




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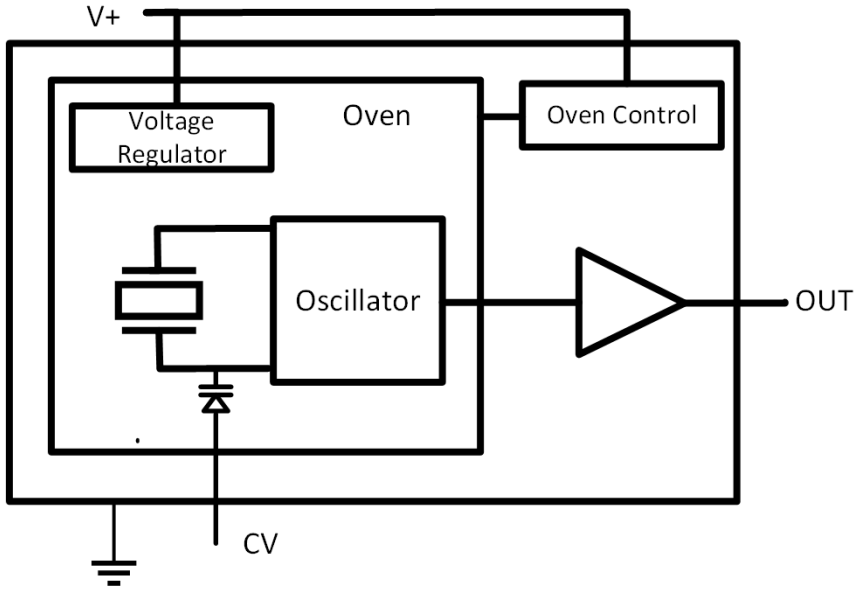
# OX-174

Low noise OCXO

Online Datasheet

## Features:

- High Stabilty, Low phase noise oscillator
- Frequency Range: 5 to 20 MHz
- Output: CMOS, Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 5, 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 10 ppb
- Aging per Year: 100 ppb




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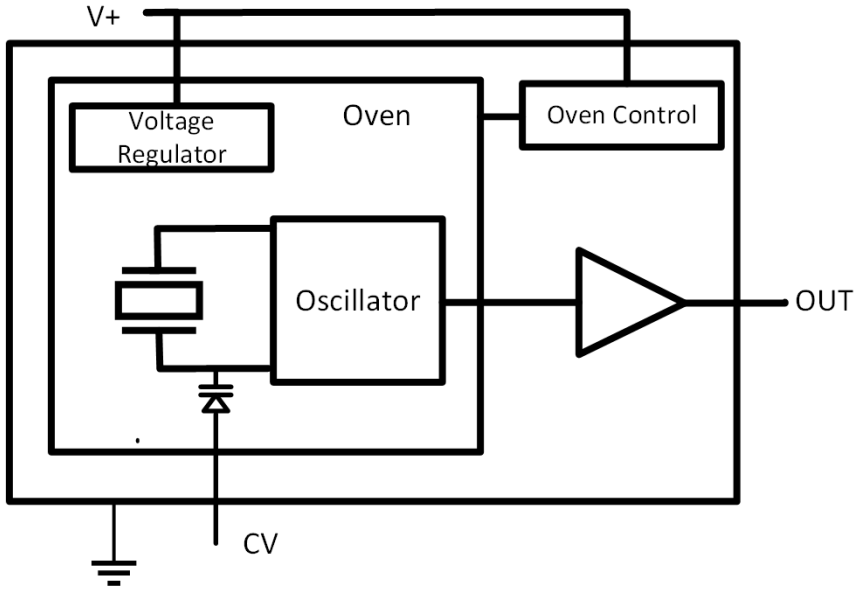
# OX-175

Low noise OCXO

Online Datasheet

## Features:

- High Stabilty, Low phase noise oscillator
- Frequency Range: 50 to 130 MHz
- Output: Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -176 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Year: 200 ppb




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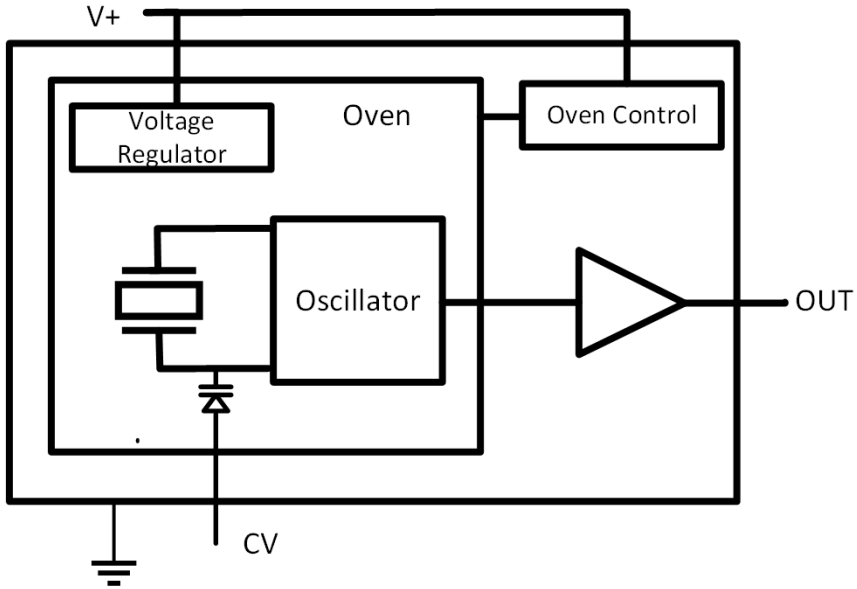
# OX-045

Low noise OCXO

Online Datasheet

## Features:

- Low close in phase noise with excellent daily aging
- Target Market: Test and Measurement
- 10 MHz
- Standard Frequency: 10 MHz
- Output: Sine
- Footprint: 51 x 51 mm, through hole
- Supply Voltage: 12, 15 V
- Power: 2 W
- Temperature Range: -40 to 70 °C
- Phase Noise 10 Hz offset: -140 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -163 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 5 ppb




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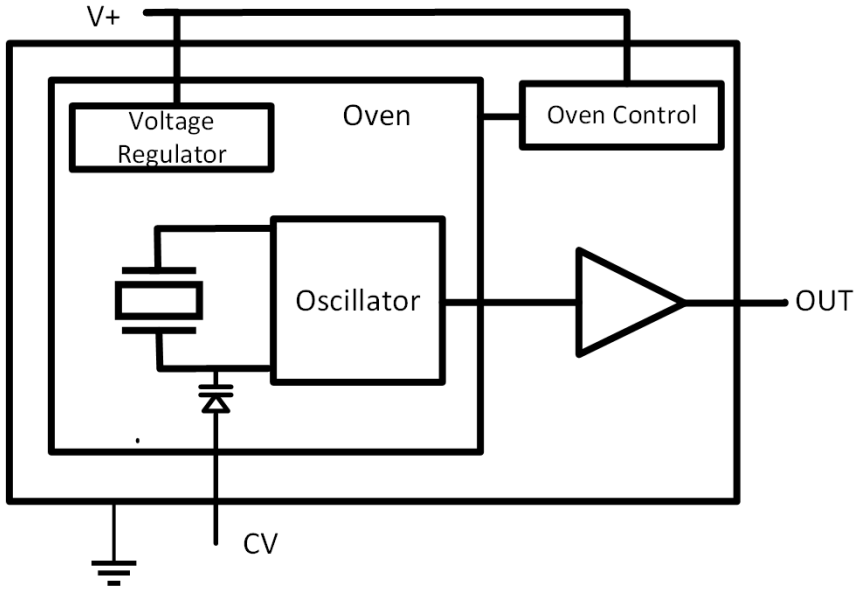
# OX-204

Low noise OCXO

Online Datasheet

## Features:

- Low Phase Noise Oscillator
- Target Market: Test and Measurement
- Frequency Range: 10 to 20 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 5, 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -140 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 20 ppb
- Aging per Year: 30 ppb




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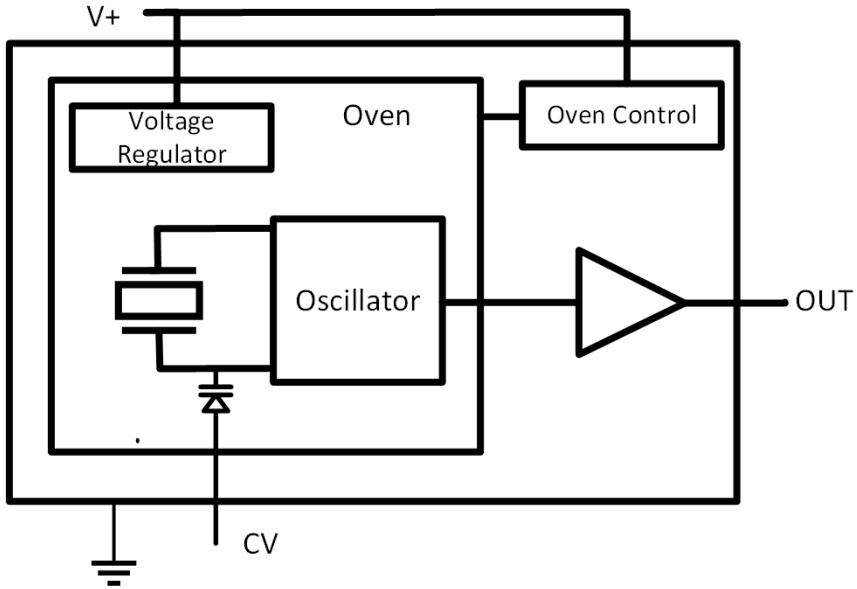
# OX-205

Low noise OCXO

Online Datasheet

## Features:

- Low Phase Noise Oscillator
- Target Market: Test and Measurement
- Frequency Range: 80 to 120 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -45 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -178 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 200 ppb
- Aging per Year: 200 ppb





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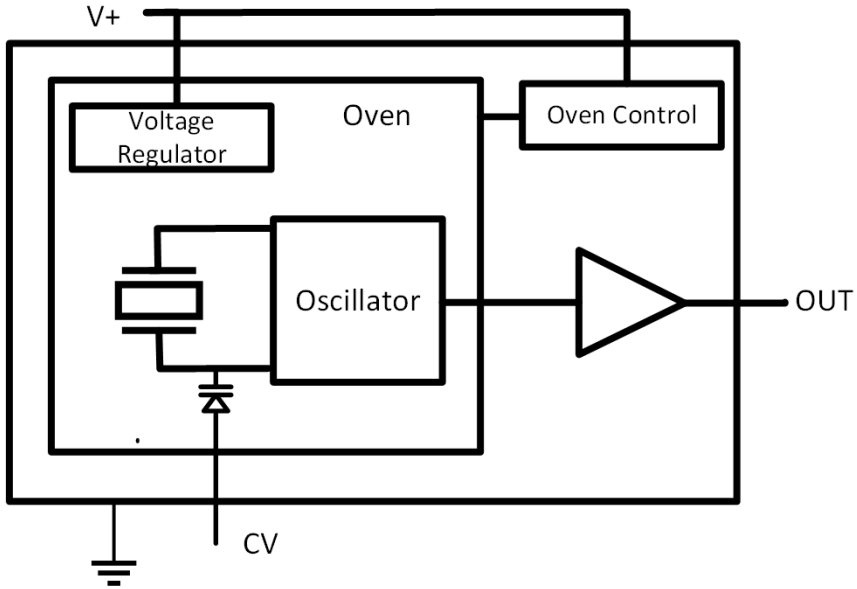
# OX-209

Low noise OCXO

Online Datasheet

## Features:

- Frequency Range: 20 to 35 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -115 dBc/Hz @20 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @20 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 50 ppb
- Aging per Year: 100 ppb




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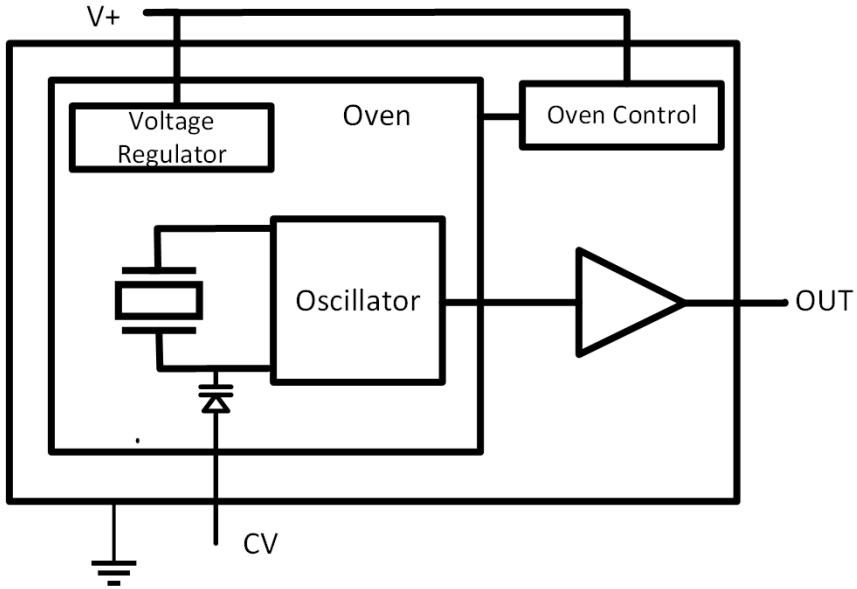
# OX-304

Low noise OCXO

Online Datasheet

## Features:

- smallest form factor low noise oscillator
- Target Market: Test and Measurement
- Frequency Range: 10 to 20 MHz
- Output: Sine
- Footprint: 20 x 20 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -173 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 20 ppb
- Aging per Year: 30 ppb




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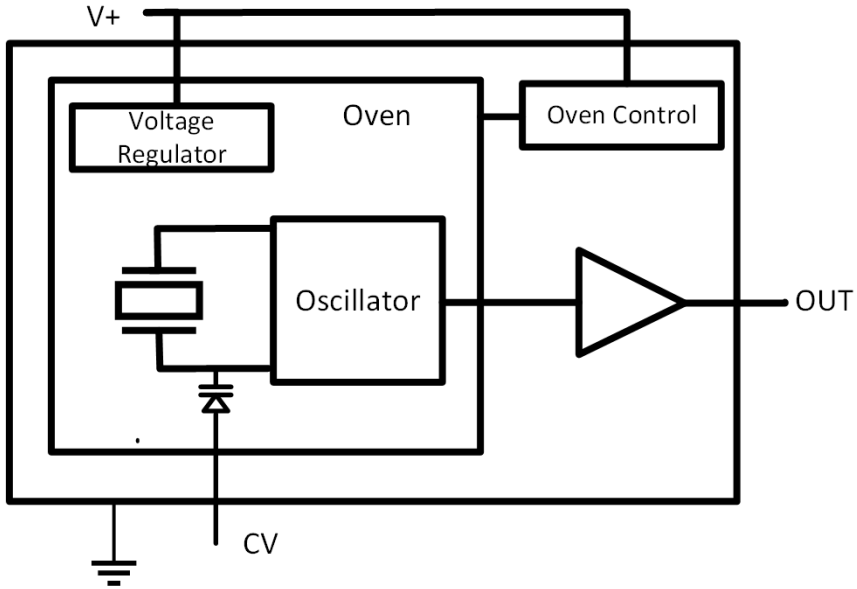
# OX-305

Low noise OCXO

Online Datasheet

## Features:

- smallest form factor low noise oscillator
- Target Market: Test and Measurement
- Frequency Range: 80 to 120 MHz
- 100 MHz
- Standard Frequency: 100 MHz
- Output: Sine
- Footprint: 20 x 20 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -178 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 200 ppb
- Aging per Year: 200 ppb




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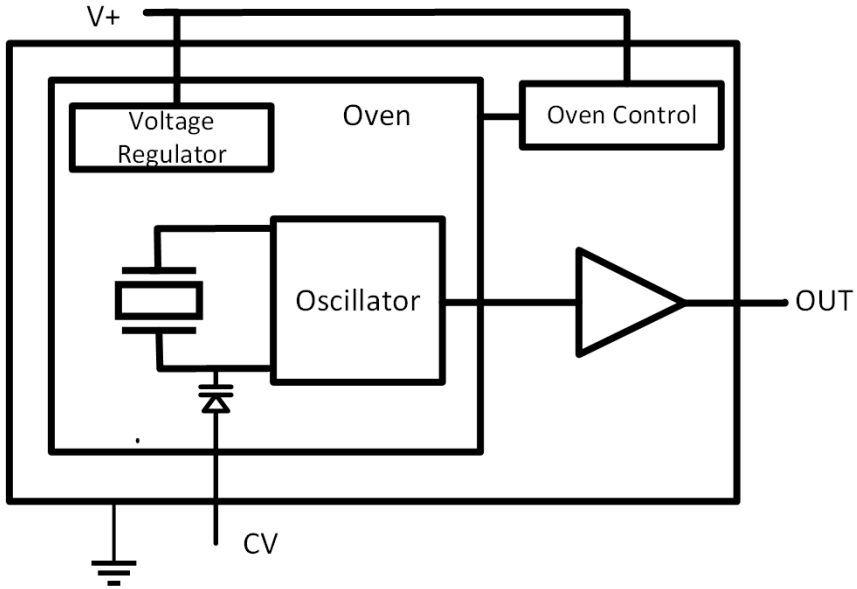
# OX-405

Low noise OCXO

Online Datasheet

## Features:

- low noise, small factor OCXO
- Frequency Range: 80 to 120 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -95 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 50 ppb
- Aging per Year: 300 ppb




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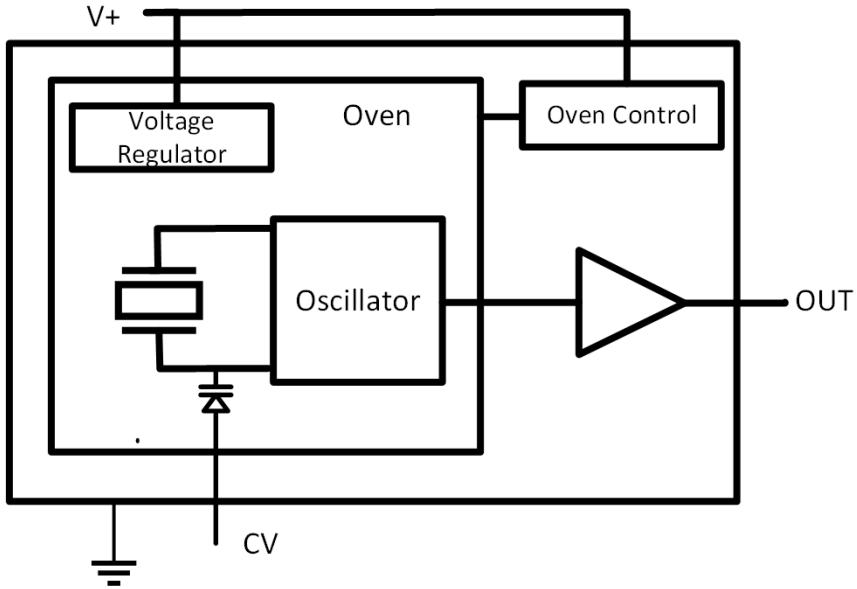
# EX-219

Low Power Space OCXO

Online Datasheet

## Features:

- Only space qualified EMXO
- Target Market: Space
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 26 x 24 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 700 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 0.1 ppm
- Aging per Year: 0.2 ppm
- 20 g Vibration




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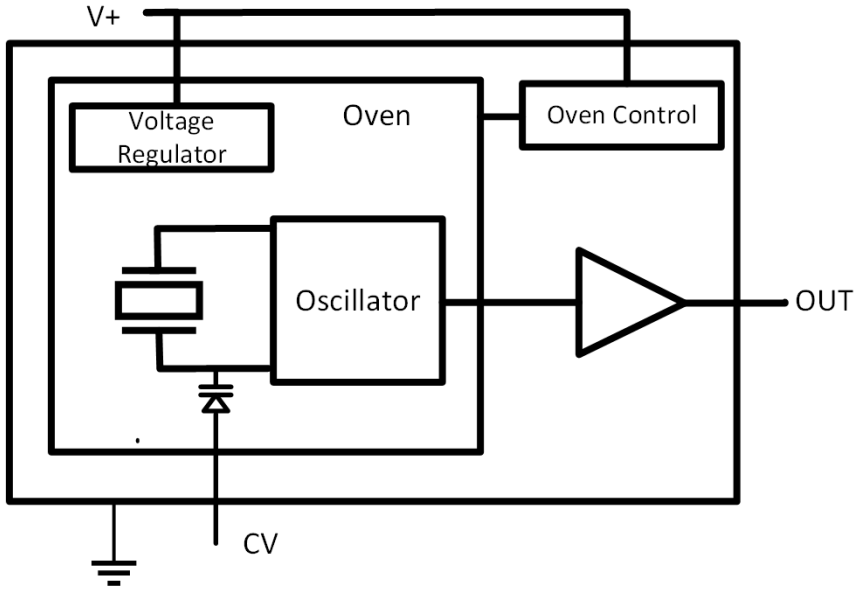
# EX-400

Low power OCXO

Online Datasheet

## Features:

- Frequency Range: 10 to 80 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 350mW
- Temperature Range: -55 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.1 ppm
- Aging per Year: 0.2 ppm
- Phase Noise 10 Hz offset: -110 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -140 dBc/Hz @10 MHz carrier




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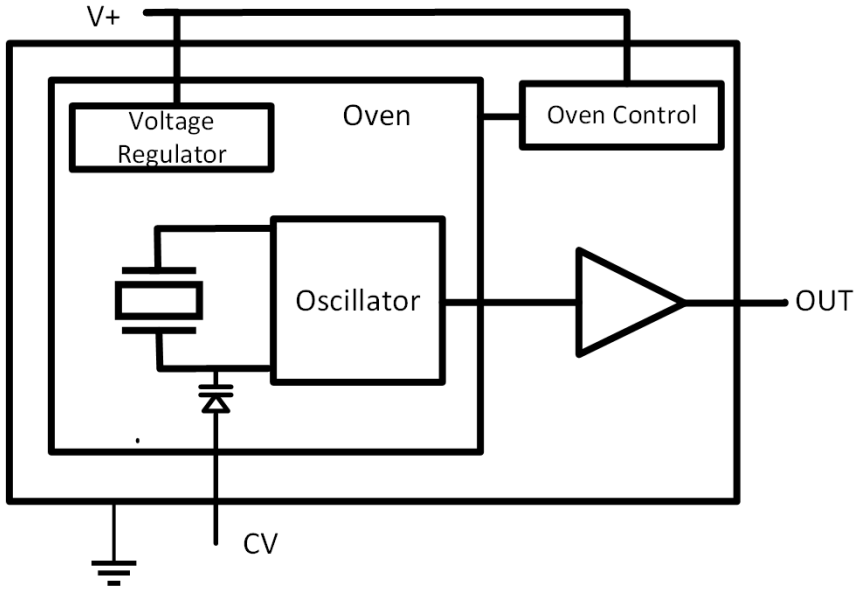
# EX-401

Low power OCXO

Online Datasheet

## Features:

- Frequency Range: 10 to 100 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.03 ppm
- Aging per Year: 0.1 ppm
- Phase Noise 10 Hz offset: -125 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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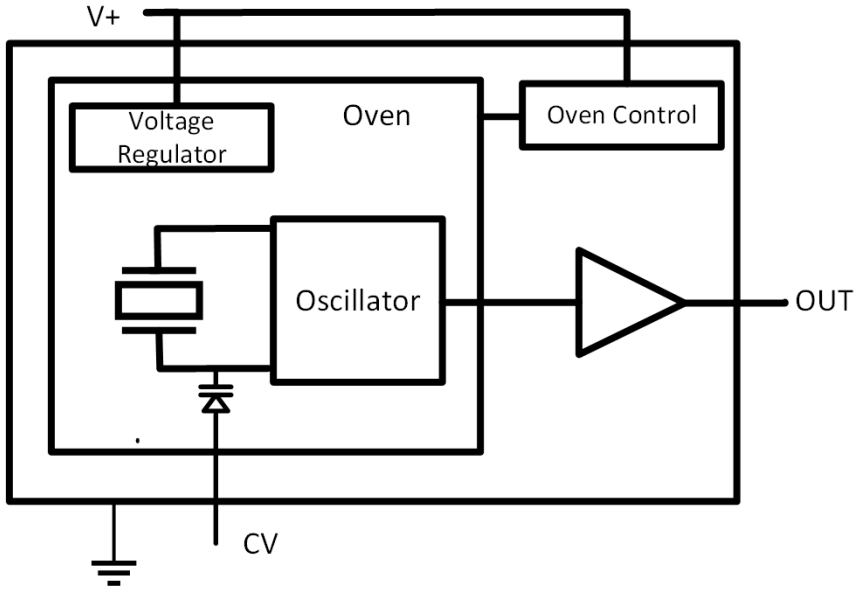
# EX-421

Low power OCXO

Online Datasheet

## Features:

- OCXO performance at ~ 1/5 the power
- Frequency Range: 10 to 100 MHz
- Output: CMOS, Sine
- Footprint: 13 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.03 ppm
- Aging per Year: 0.1 ppm
- Phase Noise 10 Hz offset: -125 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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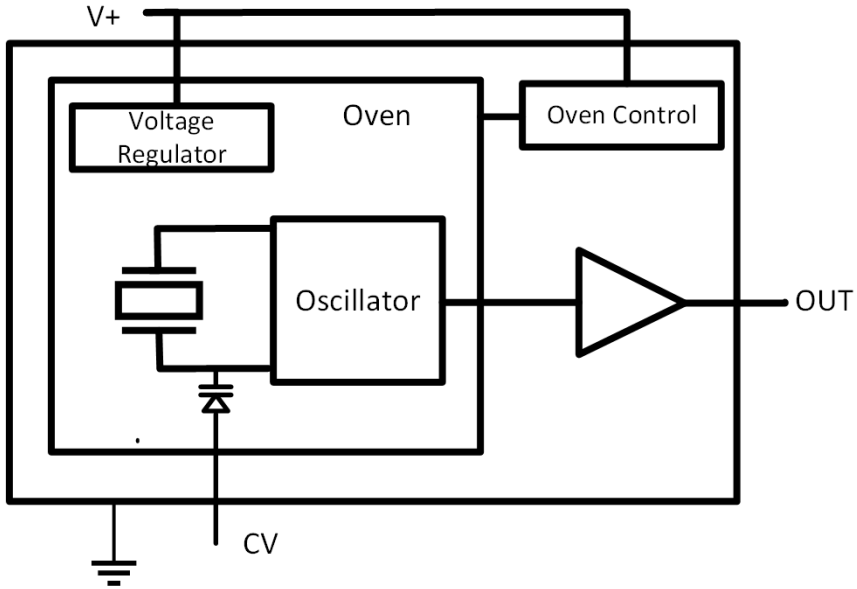
# OX-249

Space OCXO

Online Datasheet

## Features:

- High Stability Space OCXO
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 35 x 20 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Day: 2 ppb
- Phase Noise 100 kHz offset: -163 dBc/Hz @50 MHz carrier




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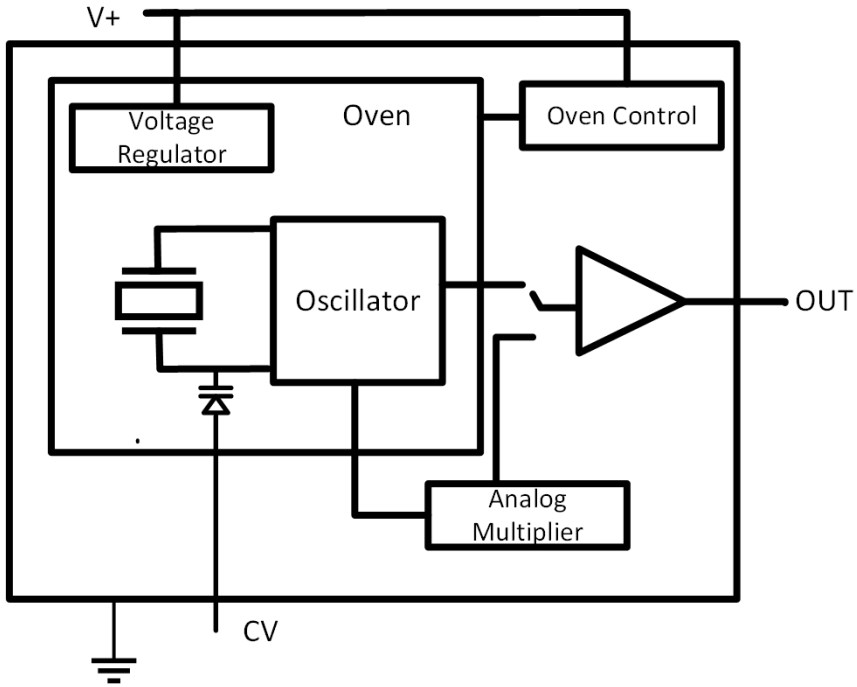
# OX-200

Standard OCXO

Online Datasheet

## Features:

- Standard 1x1 OCXO
- Frequency Range: 10 to 100 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 3.3, 5, 12 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 2 ppb
- Temperature Stabilty -20 to 70°C: 5 ppb
- Temperature Stabilty -40 to 85°C: 10 ppb
- Aging per Day: 0.1 ppb
- Aging per Year: 20 ppb




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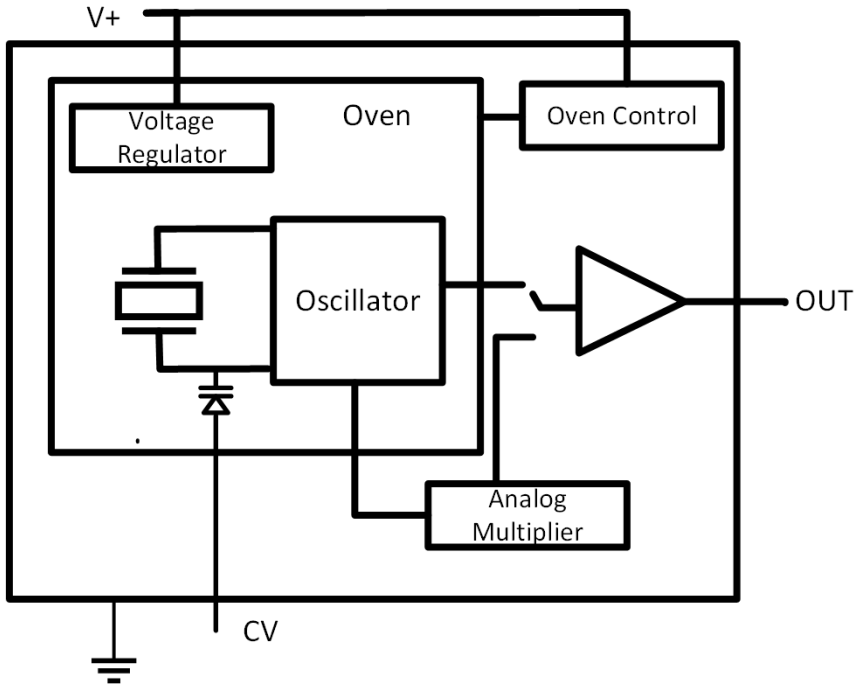
# OX-400

Standard OCXO

Online Datasheet

## Features:

- High Volume, Low Cost OCXO
- Frequency Range: 10 to 40 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 95 °C
- +/-5ppb over -40 to +85C




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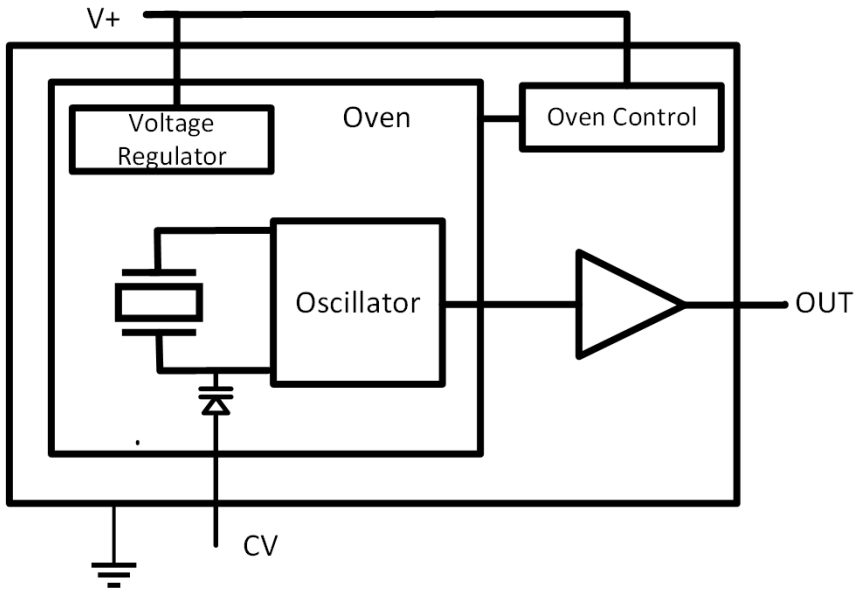
# OX-601

Standard OCXO

Online Datasheet

## Features:

- ASIC based OCXO
- Frequency Range: 10 to 40 MHz
- Standard Frequencies: 10, 20, 38.4 MHz
- Output: CMOS
- Footprint: 9 x 7 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 500 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 10 ppb
- Temperature Stabilty -20 to 70°C: 10 ppb
- Temperature Stabilty -40 to 85°C: 10 ppb




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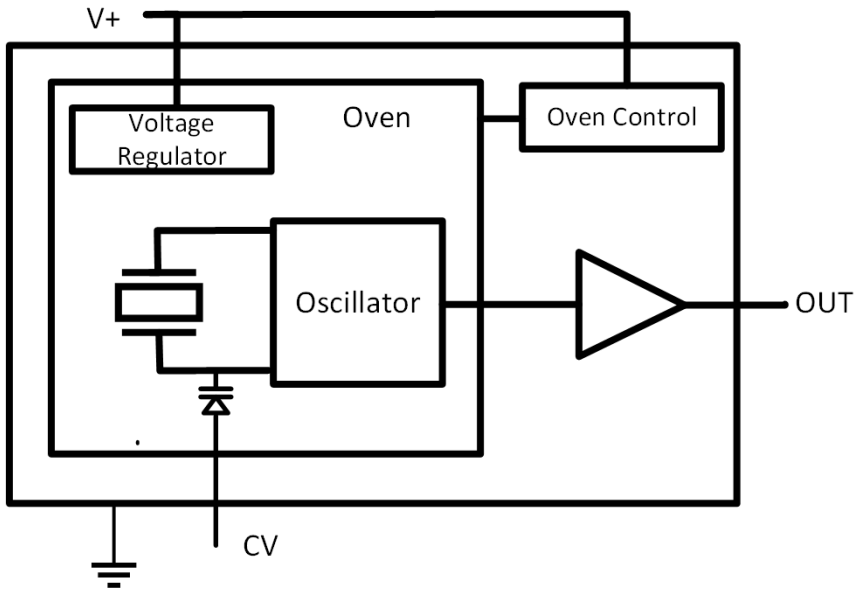
# OX-502

Standard OCXO

Online Datasheet

## Features:

- ASIC based OCXO
- Frequency Range: 10 to 40 MHz
- Standard Frequencies: 10. 12.8, 30, 38.4 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 500 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 10 ppb
- Temperature Stabilty -20 to 70°C: 10 ppb
- Temperature Stabilty -40 to 85°C: 10 ppb




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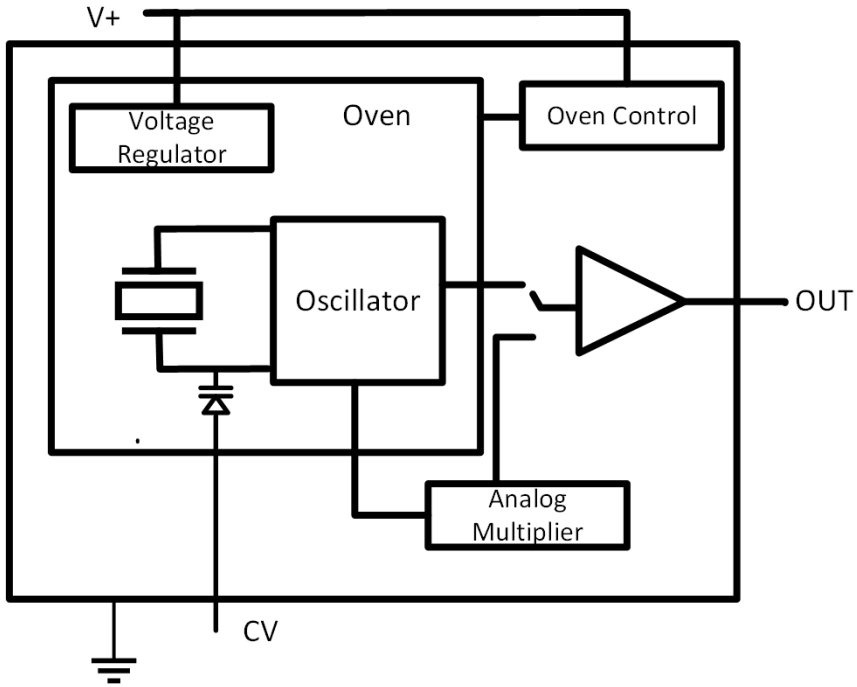
# OX-220

Standard OCXO

Online Datasheet

## Features:

- High Volume, Low Cost OCXO
- Frequency Range: 10 to 40 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Sine
- Footprint: 25 x 22 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 10 ppb
- Temperature Stabilty -20 to 70°C: 10 ppb
- Temperature Stabilty -40 to 85°C: 10 ppb
- Aging per Day: 0.5 ppb
- Aging per Year: 60 ppb




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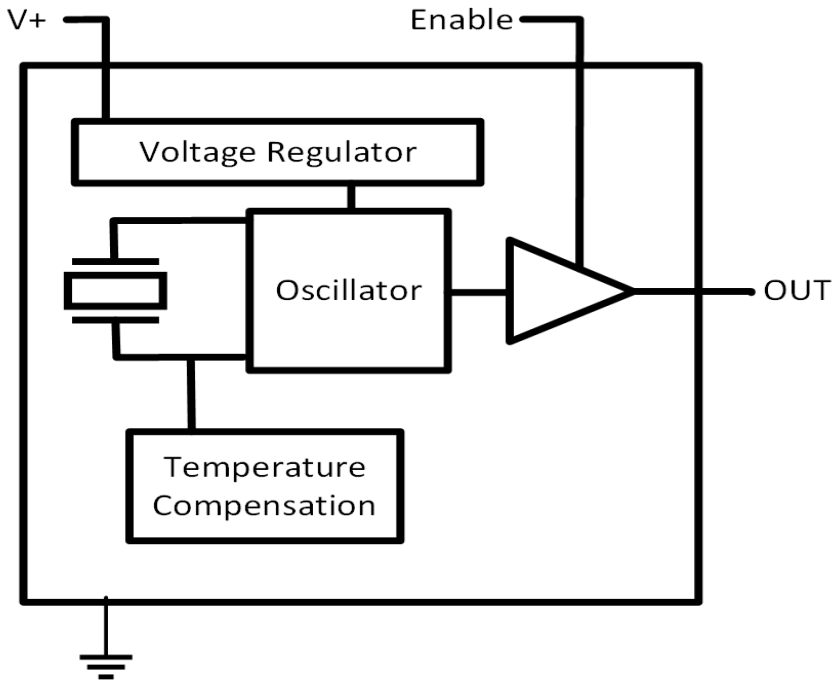
# VT-802

Standard TCXO

Online Datasheet

## Features:

- Frequency Range: 2 to 50 MHz
- Output: CMOS
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 2.5, 3, 3.3 V
- Power: 7.5 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 2 ppm
- Temperature Stabilty -40 to 85°C: 2 ppm
- Aging per Day: 0.01 ppm




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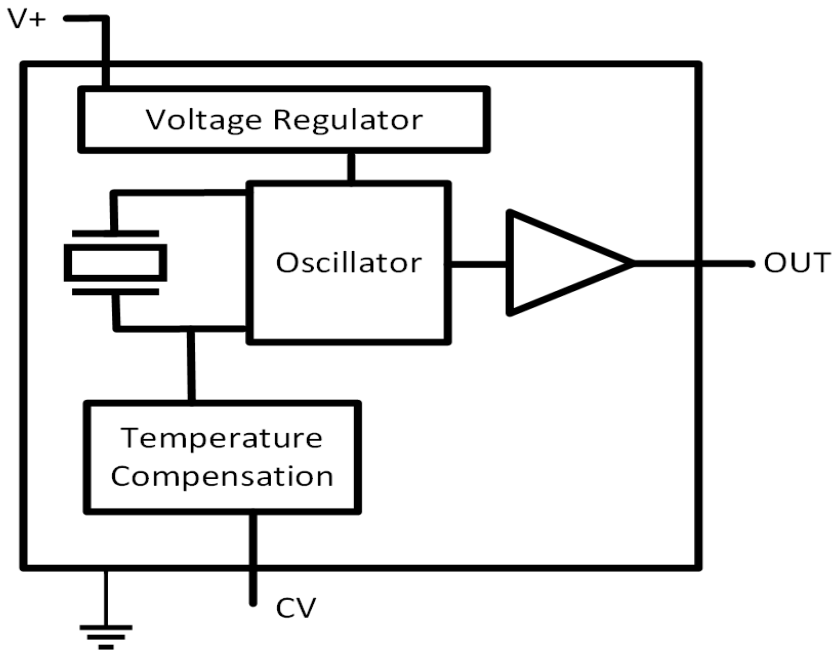
# VT-820

Standard TCXO

Online Datasheet

## Features:

- Frequency Range: 8 to 45 MHz
- Output: Clipped Sine
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3, 3.3 V
- Power: 1.5 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.5 ppm
- Temperature Stabilty -40 to 85°C: 0.5 ppm
- Aging per Day: 0.01 ppm



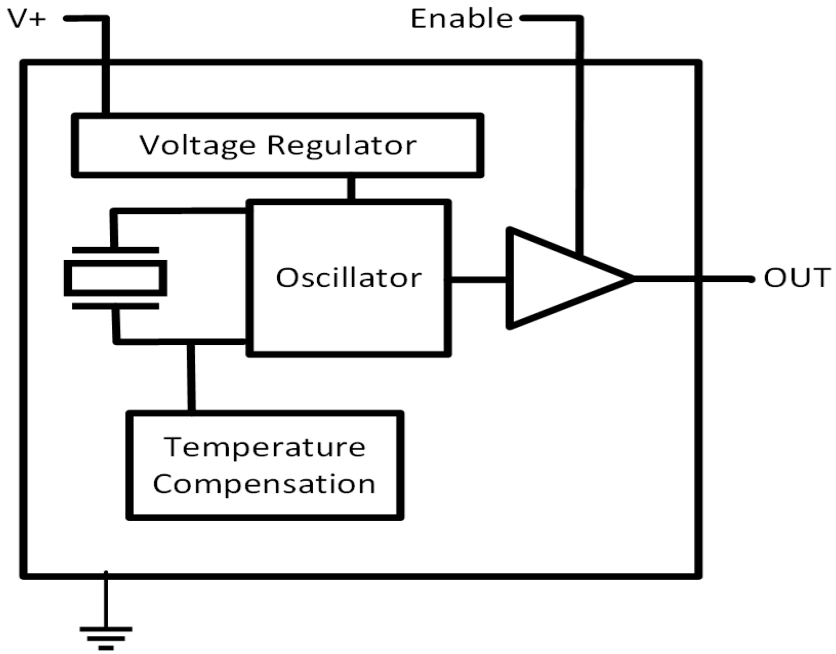
# VT-822

Standard TCXO

Online Datasheet

## Features:

- Frequency Range: 4 to 54 MHz
- Output: CMOS
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 9.9 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 2 ppm
- Temperature Stabilty -40 to 85°C: 2 ppm
- Aging per Day: 0.01 ppm




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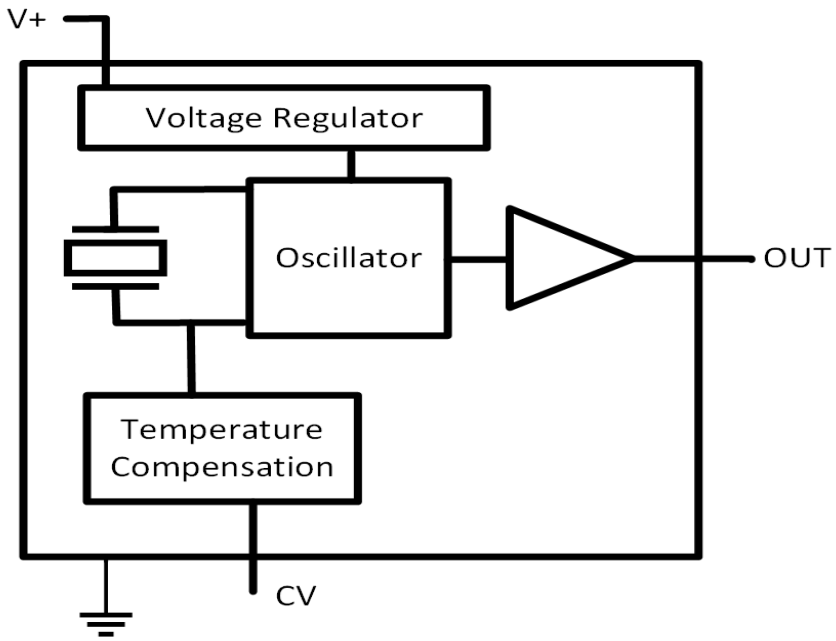
# VT-841

Standard TCXO

Online Datasheet

## Features:

- Similar to VT-841 but 4 pins
- Frequency Range: 10 to 52 MHz
- Output: Clipped Sine
- Footprint: 2.5 x 2 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3.3 V
- Power: 5.6 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.5 ppm
- Temperature Stabilty -40 to 85°C: 1 ppm
- Aging per Day: 0.01 ppm




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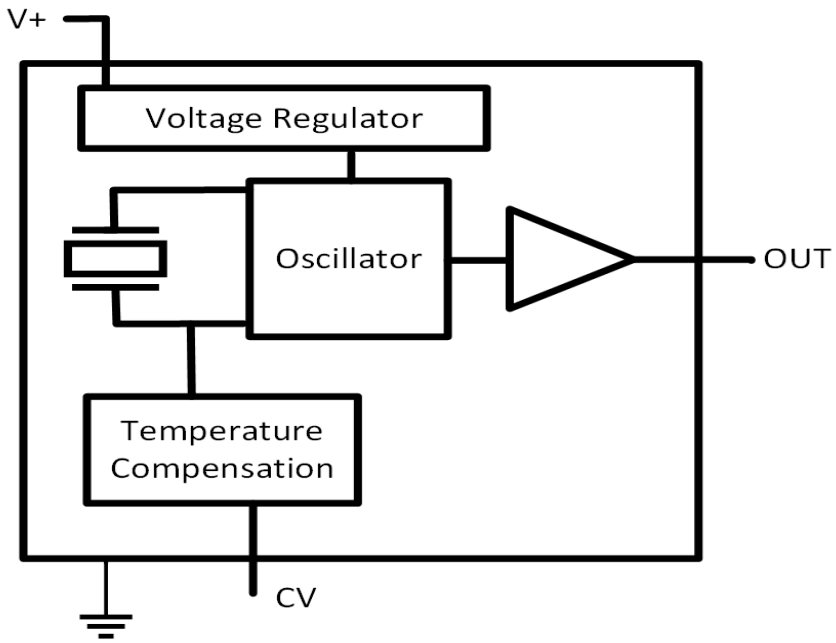
# VT-860

Standard TCXO

Online Datasheet

## Features:

- Smallest TCXO
- Frequency Range: 13 to 52 MHz
- Output: Clipped Sine
- Footprint: 2 x 1.6 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3, 3.3 V
- Power: 4.14 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.5 ppm
- Temperature Stabilty -40 to 85°C: 0.5 ppm
- Aging per Day: 0.01 ppm




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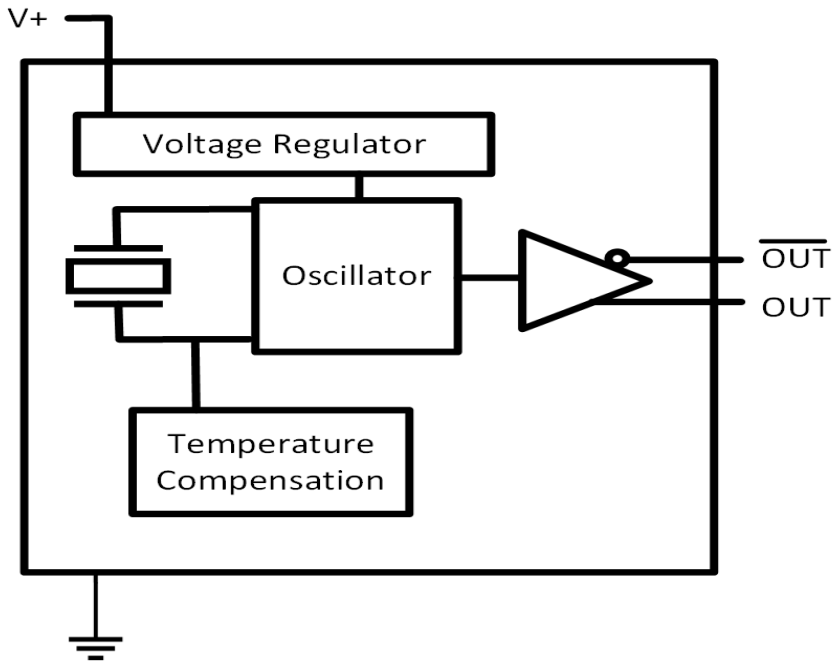
# TX-500

Stratum 3 TCXO

Online Datasheet

## Features:

- Frequency Range: 50 to 160 MHz
- Output: CMOS, Clipped Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.28 ppm
- Aging per Year: 1 ppm




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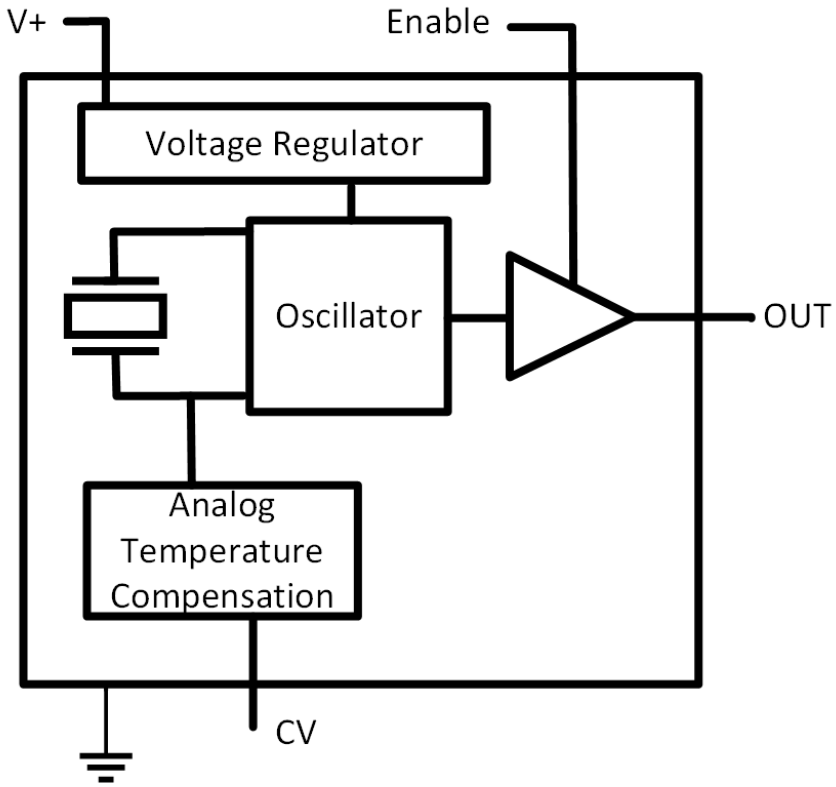
# TX-801

**Stratum 3 TCXO**

Online Datasheet

## Features:

- Frequency Range: 6.4 to 52 MHz
- Standard Frequencies: 10, 12.8, 20, 24.576, 25 MHz
- Output: CMOS, Clipped Sine
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 5.94 mW
- Temperature Range: -40 to 105 °C
- Temperature Stabilty 0 to 70°C: 0.1 ppm
- Temperature Stabilty -40 to 85°C: 0.28 ppm
- Temperature Stabilty over Operating Temperature Range: 2 ppm





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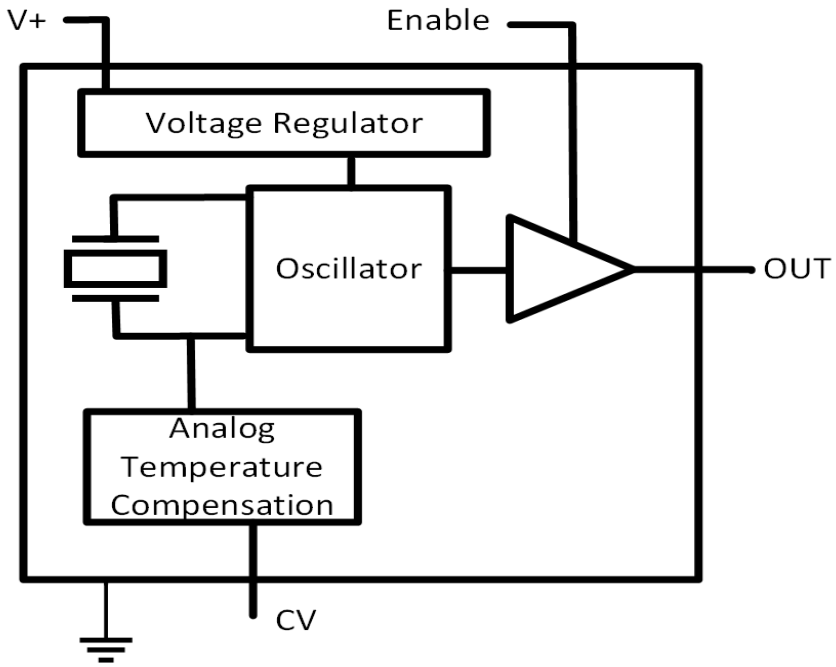
# VT-803

Stratum 3 TCXO

Online Datasheet

## Features:

- High Stability, small form factor TCXO
- Frequency Range: 10 to 52 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Clipped Sine
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 11.55 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 0.1 ppm
- Temperature Stabilty -40 to 85°C: 0.28 ppm
- Aging per Day: 0.01 ppm




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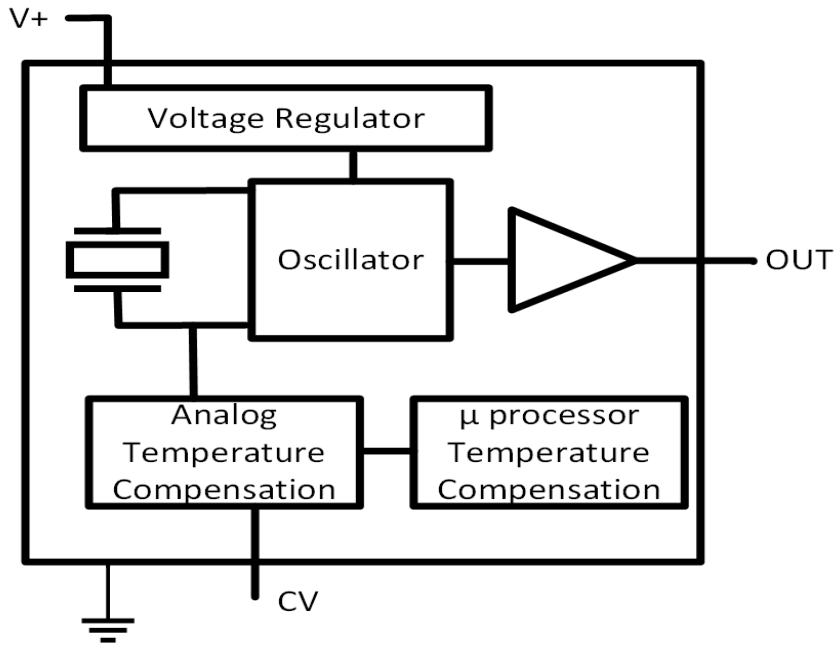
# MX-503

Microprocessor corrected TCXO

Online Datasheet

## Features:

- OCXO temperature stability at just 40 mW
- Frequency Range: 8 to 50 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 40 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 20 ppb
- Temperature Stabilty -20 to 70°C: 20 ppb
- Temperature Stabilty -40 to 85°C: 30 ppb
- Aging per Day: 5 ppb




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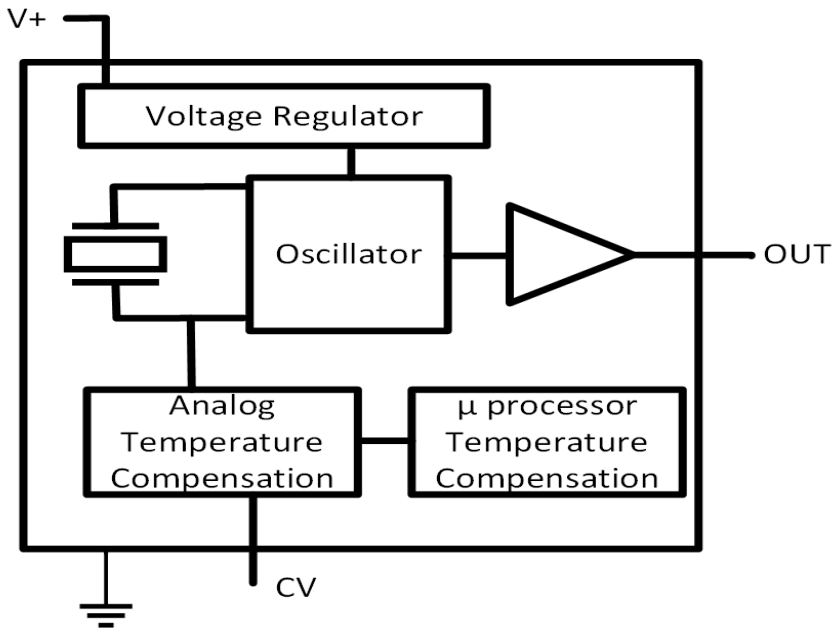
# MX-505

Microprocessor corrected TCXO

Online Datasheet

## Features:

- Microprocessor based temperature correction
- Frequency Range: 8 to 40 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, through hole
- Supply Voltage: 3.3 V
- Power: 40 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 30 ppb
- Temperature Stabilty -20 to 70°C: 30 ppb
- Temperature Stabilty -40 to 85°C: 50 ppb
- Aging per Day: 8 ppb




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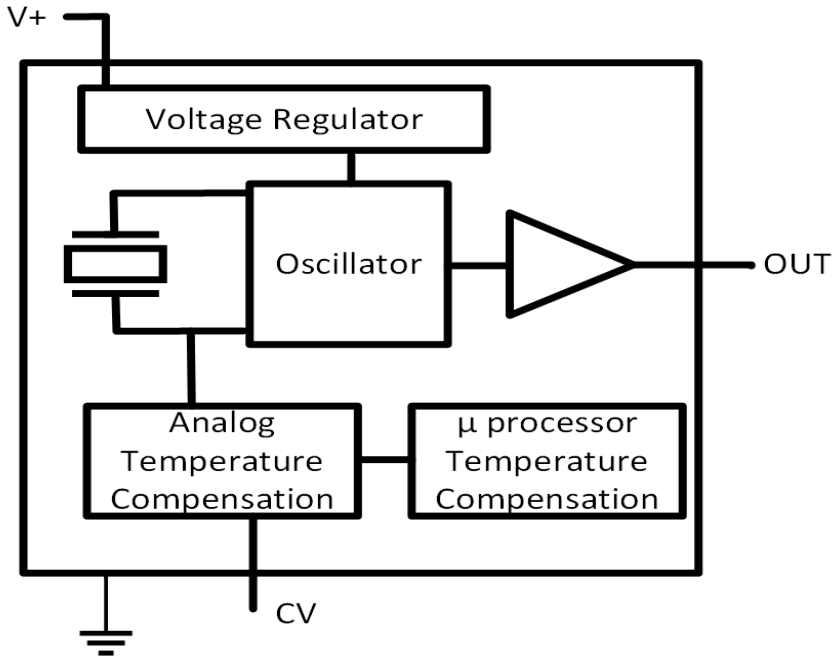
# MX-600

Microprocessor corrected TCXO

Online Datasheet

## Features:

- Microprocessor based temperature correction
- Frequency Range: 8 to 40 MHz
- Output: CMOS
- Footprint: 9 x 7 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 40 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty 0 to 70°C: 20 ppb
- Temperature Stabilty -20 to 70°C: 20 ppb
- Temperature Stabilty -40 to 85°C: 30 ppb
- Aging per Day: 5 ppb




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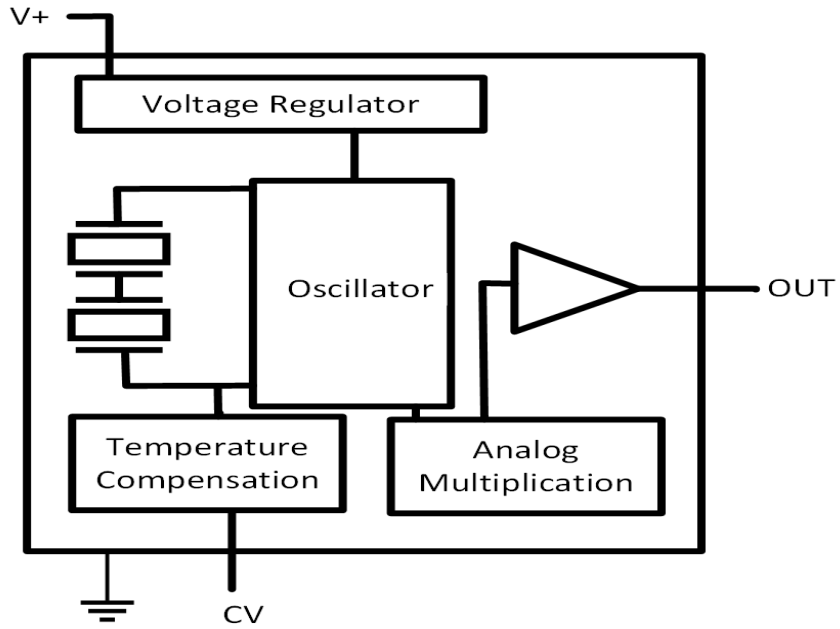
# TX-708

Low g TCXO

Coming Soon

## Features: COMING SOON

- High frequency, low g
- Target Market: Military
- Frequency Range: 96 to 160 MHz
- Standard Frequencies: 98.208, 100, 115.2, 120, 144, 150, 155.52, 160 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 121 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -75 dBc/Hz @150 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @150 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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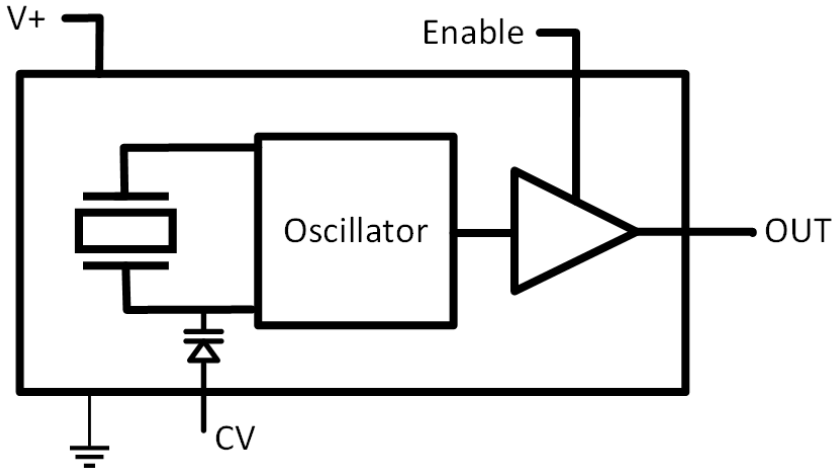
# VV-701

Standard VCXO

Online Datasheet

## Features:

- Frequency Range: 1.544 to 77.76 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 150 ppm
- Phase Noise 10 Hz offset: -64 dBc/Hz @61.44 MHz carrier
- Phase Noise 100 kHz offset: -164 dBc/Hz @61.44 MHz carrier




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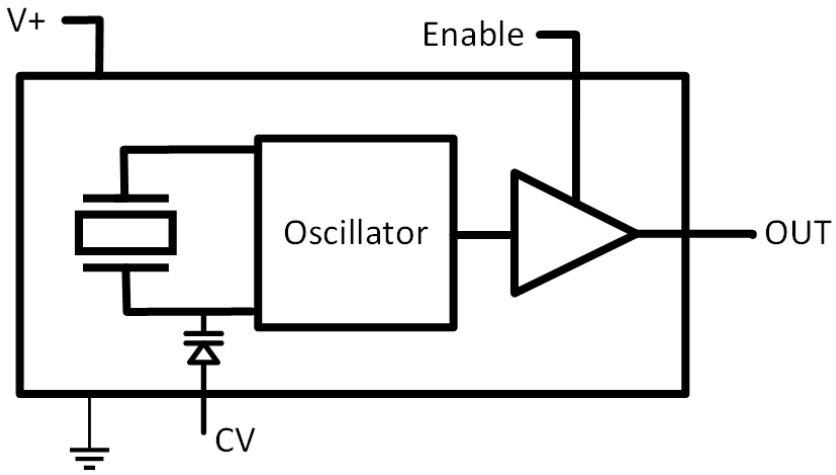
# VV-800

Standard VCXO

Online Datasheet

## Features:

- Frequency Range: 1.544 to 77.76 MHz
- Output: CMOS
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 49.5 mW
- Temperature Range: -40 to 85 °C
- Pull Range: 150 ppm
- Phase Noise 10 Hz offset: -63 dBc/Hz @61.44 MHz carrier
- Phase Noise 100 kHz offset: -157 dBc/Hz @61.44 MHz carrier




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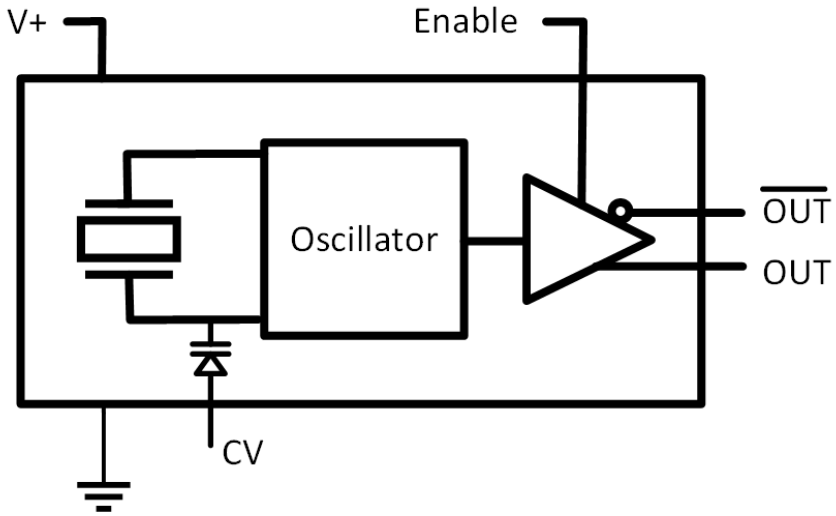
# VX-705

Standard VCXO

Online Datasheet

## Features:

- Frequency Range: 77.76 to 170 MHz
- Output: CMOS, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 33 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -66 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -151 dBc/Hz @122.88 MHz carrier




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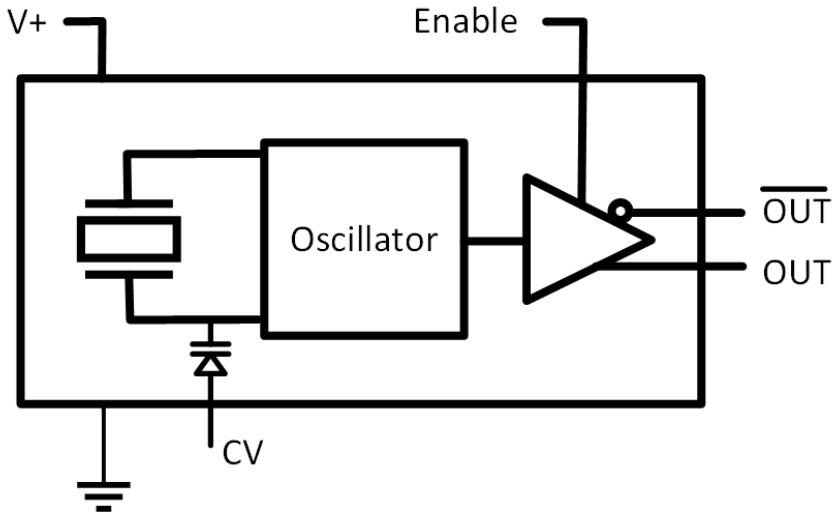
# VX-501

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 0.01 to 1.2 GHz
- Output: CMOS, Sine, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 132 mW
- Temperature Range: -40 to 85 °C
- Pull Range: 65 ppm
- Phase Noise 10 Hz offset: -76 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -166 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 30 ppm




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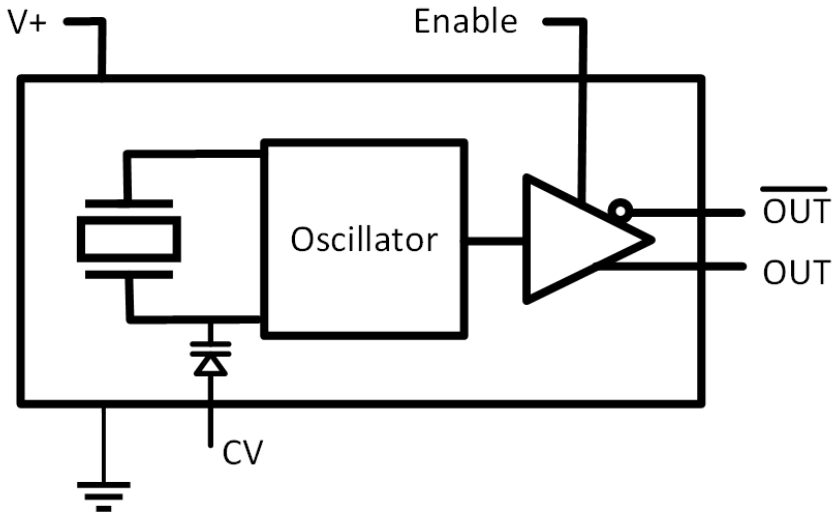
# VX-706

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 40 to 300 MHz
- Output: CMOS, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 75 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 60 ppm
- Phase Noise 10 Hz offset: -72 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -166 dBc/Hz @122.88 MHz carrier




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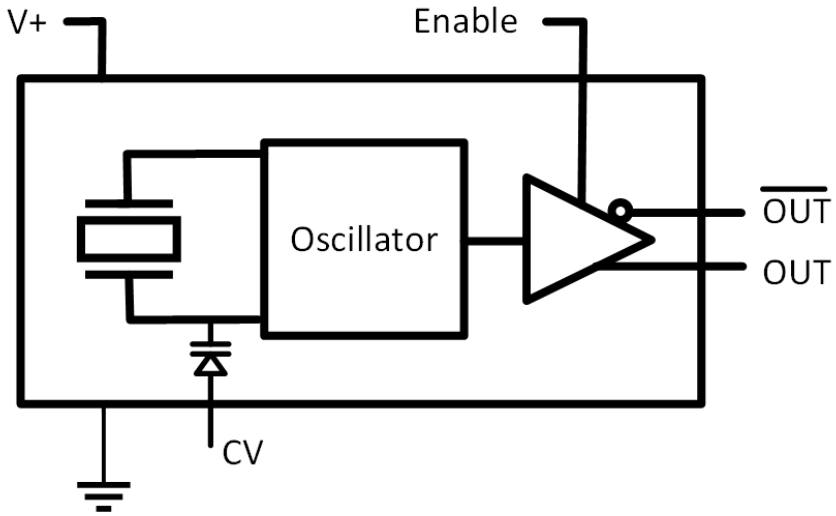
# VX-805

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 100 to 204.8 MHz
- Output: LVPECL
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 165 mW
- Temperature Range: -40 to 105 °C
- Absolute Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -68 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -157 dBc/Hz @122.88 MHz carrier




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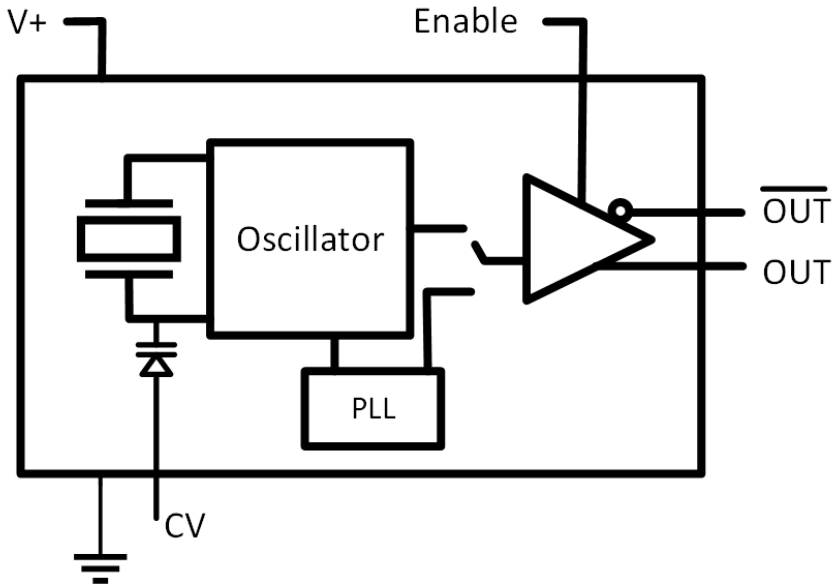
# VX-500

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 19.8 mW
- Temperature Range: -55 to 125 °C
- Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -60 dBc/Hz @52 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @52 MHz carrier




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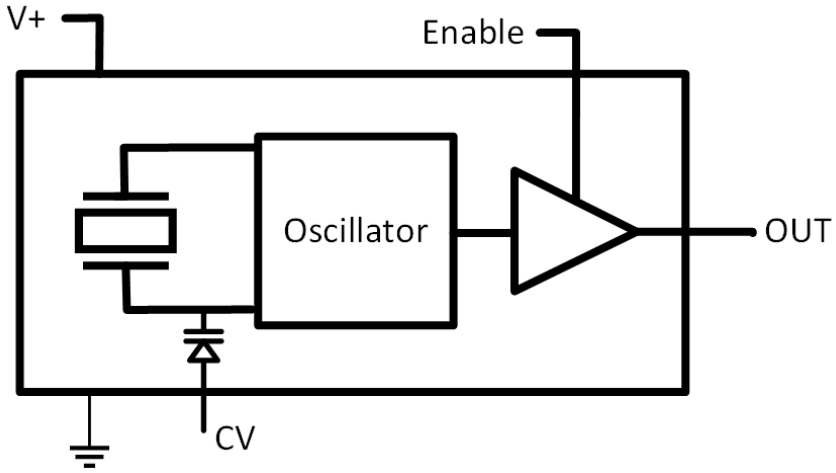
# VX-504

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 30 to 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Pull Range: 65 ppm
- Phase Noise 10 Hz offset: -72 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -161 dBc/Hz @122.88 MHz carrier




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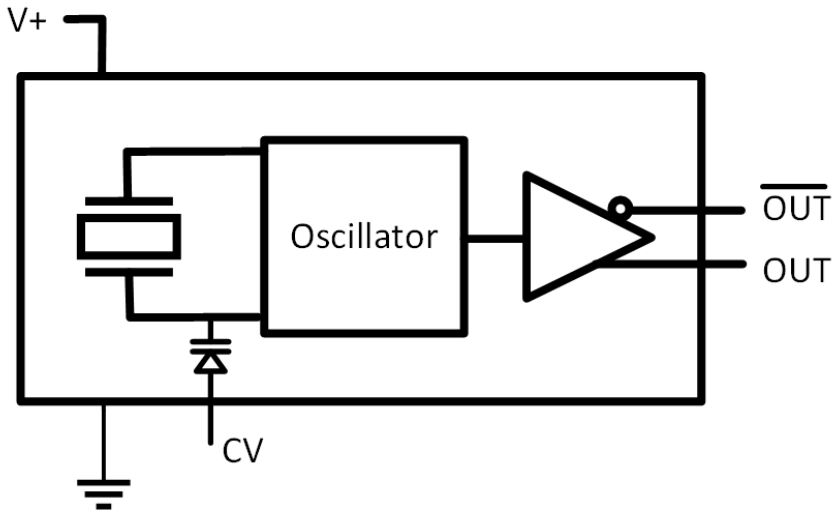
# DOC204898

Space VCXO

Online Datasheet

## Features:

- Popular for driving rad tolerant clock synchronizers and jitter cleaners
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Output: LVPECL
- Footprint: 25 x 25  mm, surface mount
- Supply Voltage: 3.3 V
- Power: 281 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 50 krad ELDRS
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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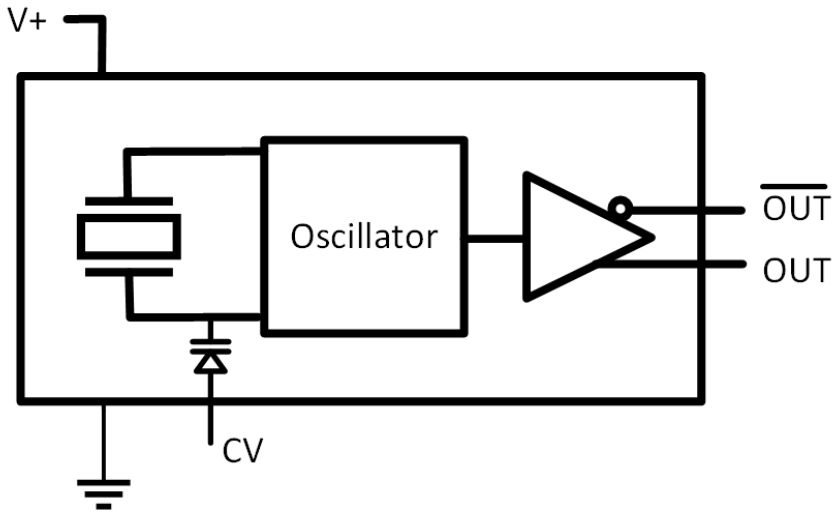
# DOC204899

Space VCXO

Online Datasheet

## Features:

- Target Market: Space
- Frequency Range: 80 to 200 MHz
- Output: LVDS
- Footprint: 25 x 25  mm, surface mount
- Supply Voltage: 3.3 V
- Power: 325 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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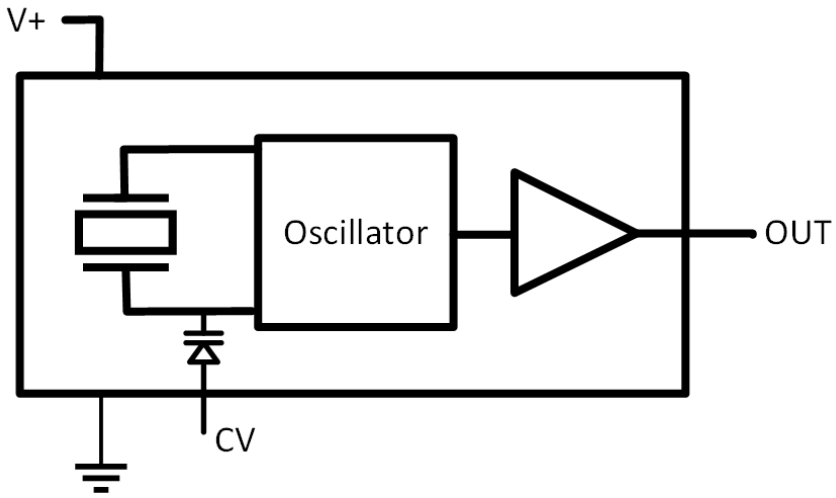
# DOC206218

Space VCXO

Online Datasheet

## Features:

- Target Market: Space
- Frequency Range: 1 to 100 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Absolute Pull Range: 50 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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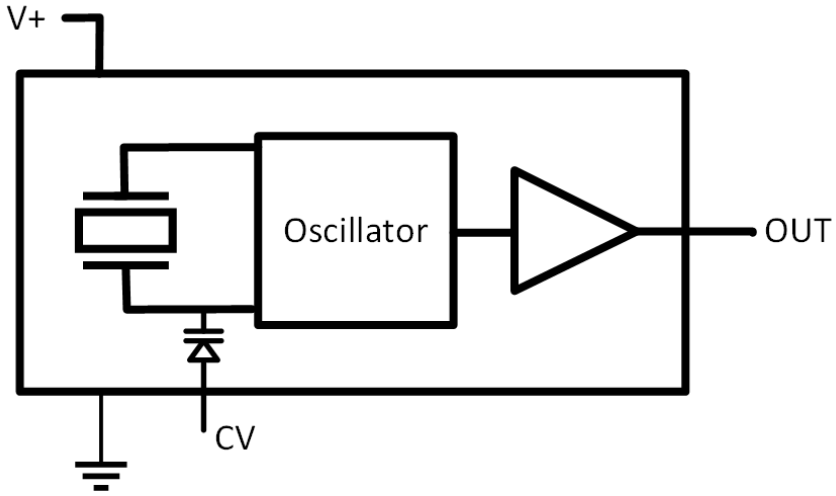
# VX-400

High temp VCXO

Online Datasheet

## Features:

- Frequency Range: 1 to 32.768 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 39.6 mW
- Temperature Range: -55 to 200 °C
- Temperature Stabilty over Operating Temperature Range: 0 ppm
- Absolute Pull Range: 50 ppm




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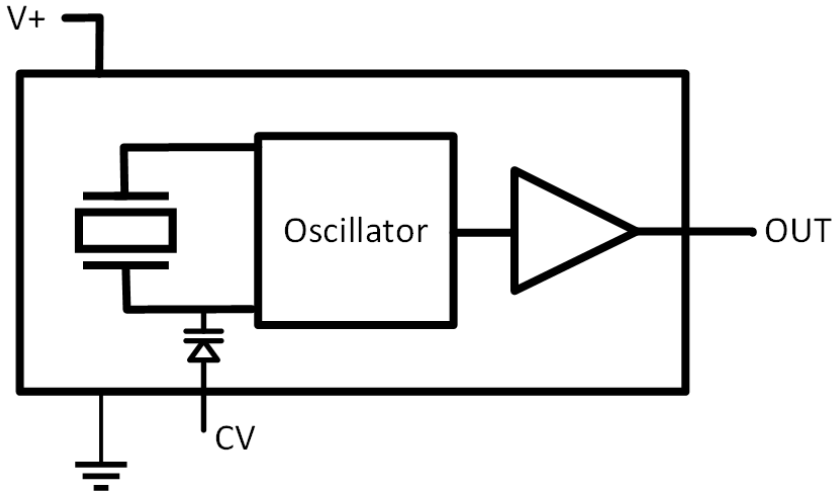
# VX-708

High temp VCXO

Online Datasheet

## Features:

- High temperature, small form factor VCO
- Frequency Range: 2 to 40 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 9.9 mW
- Temperature Range: -55 to 180 °C
- Absolute Pull Range: 25 ppm
- Phase Noise 10 Hz offset: −75 dBc/Hz @32 MHz carrier
- Phase Noise 100 kHz offset: -155 dBc/Hz @32 MHz carrier




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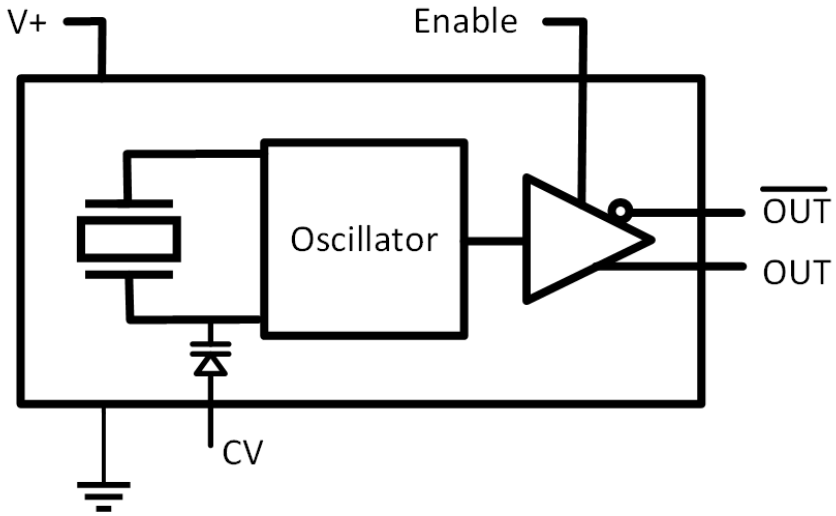
# VX-505

Mil temp range VCXO

Online Datasheet

## Features:

- Frequency Range: 20 to 800 MHz
- Output: CMOS, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 132 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 45 ppm
- Pull Range: 60 ppm
- Phase Noise 10 Hz offset: -76 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -161 dBc/Hz @100 MHz carrier




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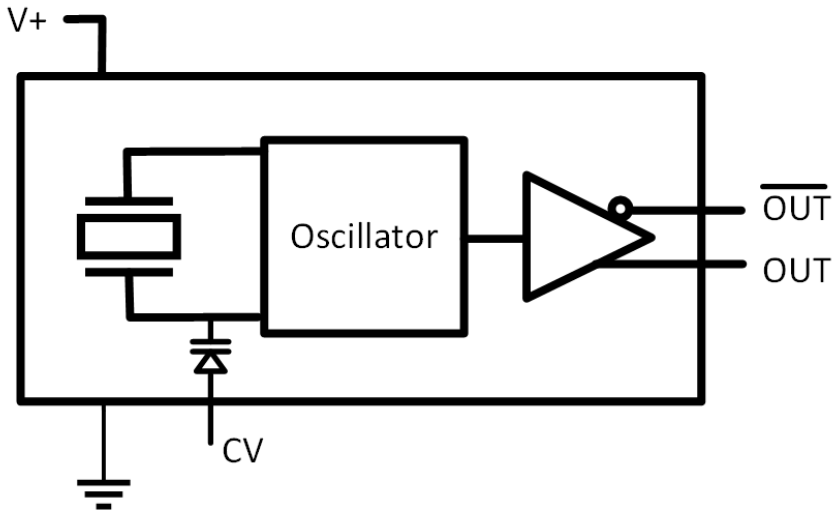
# VS-403

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 5 to 7 GHz
- Output: Sine
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 0 ppm
- Phase Noise 1kHz offset: -83 dBc/Hz @5898 MHz carrier
- Phase Noise 1 MHz offset: -140 dBc/Hz @5898MHz carrier




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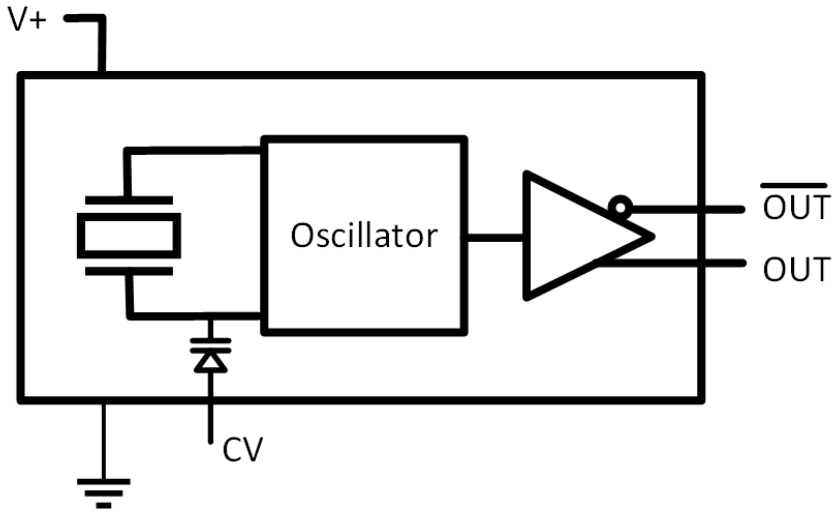
# VS-501

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 5 V
- Power: 500 mW
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 2 ppm
- Phase Noise 1kHz offset: -96 dBc/Hz @1700 MHz carrier
- Phase Noise 1 MHz offset: -156 dBc/Hz @1700MHz carrier




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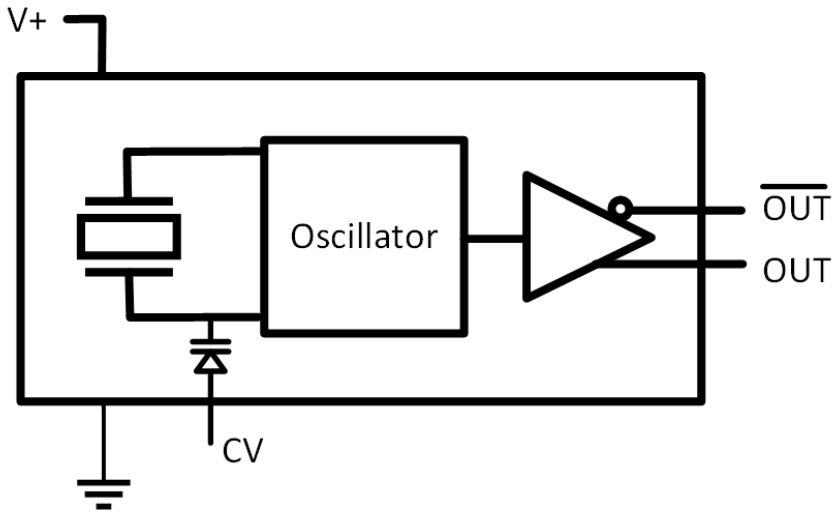
# VS-507

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 3 to 6 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 280.5 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 5 ppm
- Phase Noise 1kHz offset: -86 dBc/Hz @5898.24 MHz carrier
- Phase Noise 1 MHz offset: -146 dBc/Hz @5898.24MHz carrier




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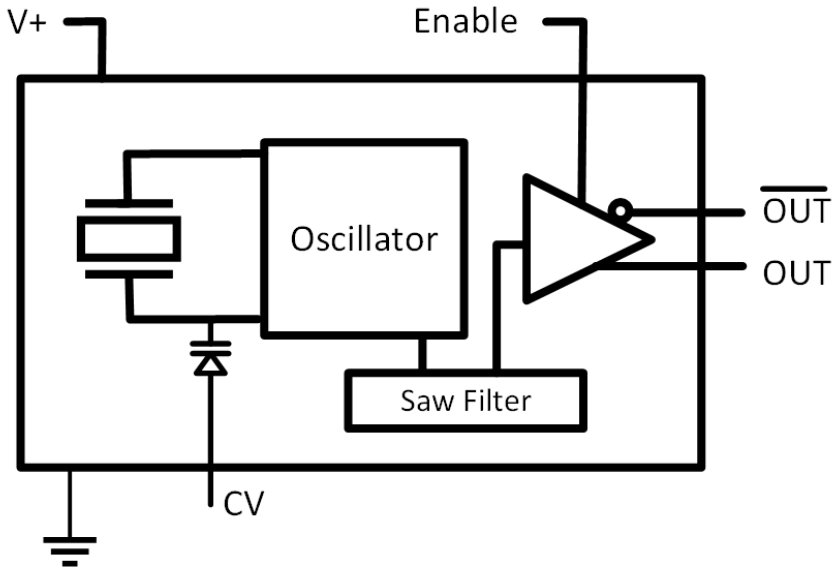
# VS-702

Single frequency VCSO

Online Datasheet

## Features:

- Low noise, high stability VCSO
- Frequency Range: 0.15 to 1 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 20 ppm
- Absolute Pull Range: 50 ppm
- Phase Noise 1kHz offset: -108 dBc/Hz @622.08 MHz carrier
- Phase Noise 1 MHz offset: -137 dBc/Hz @622.08MHz carrier




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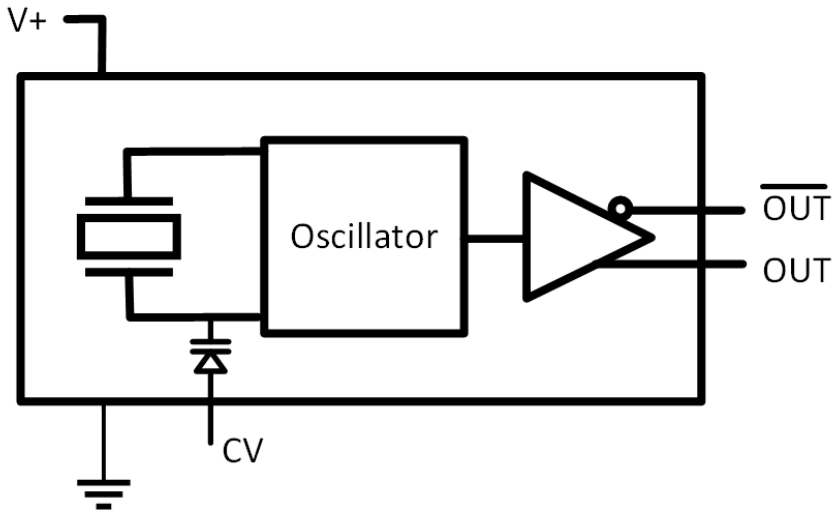
# VS-705

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 0.12288 to 1 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 240.9 mW
- Temperature Range: -40 to 85 °C




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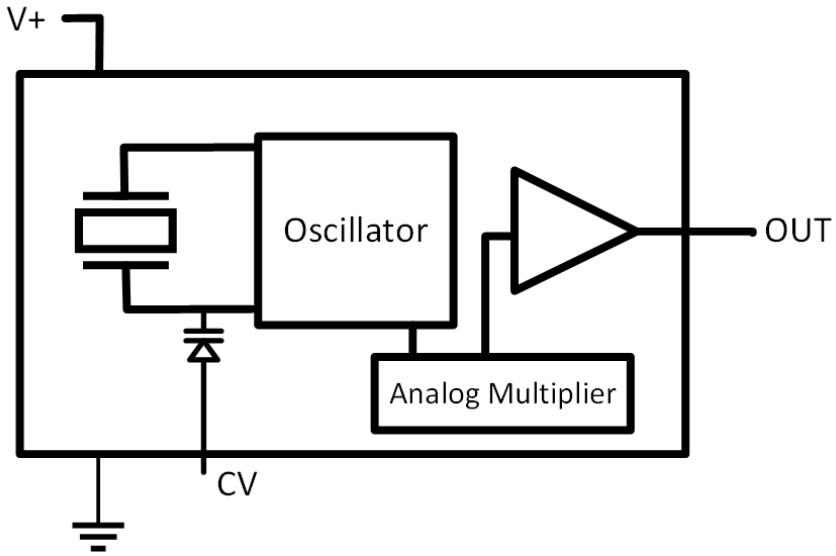
# VS-800

Single frequency VCSO

Online Datasheet

## Features:

- Smallest form factor, High Frequency VCSO in market
- Frequency Range: 0.8 to 3.2 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -95 dBc/Hz @2949.12 MHz carrier
- Phase Noise 1 MHz offset: -162 dBc/Hz @2949.12MHz carrier




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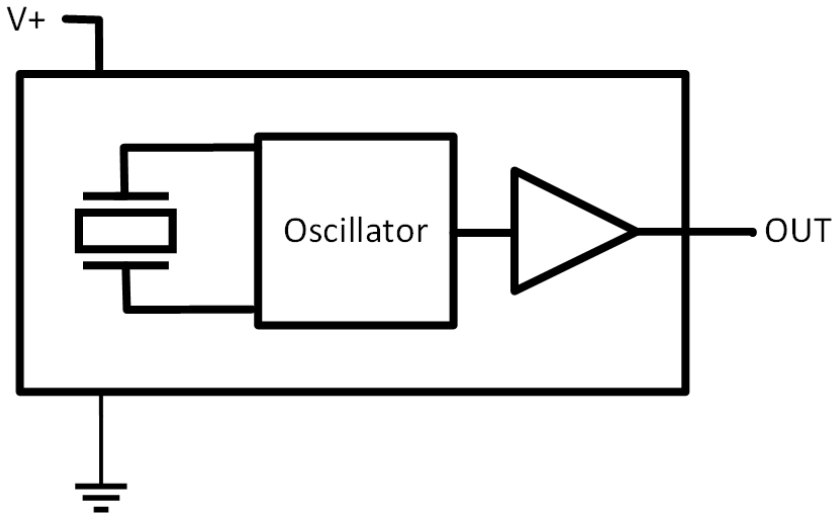
# PS-508

Low g SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




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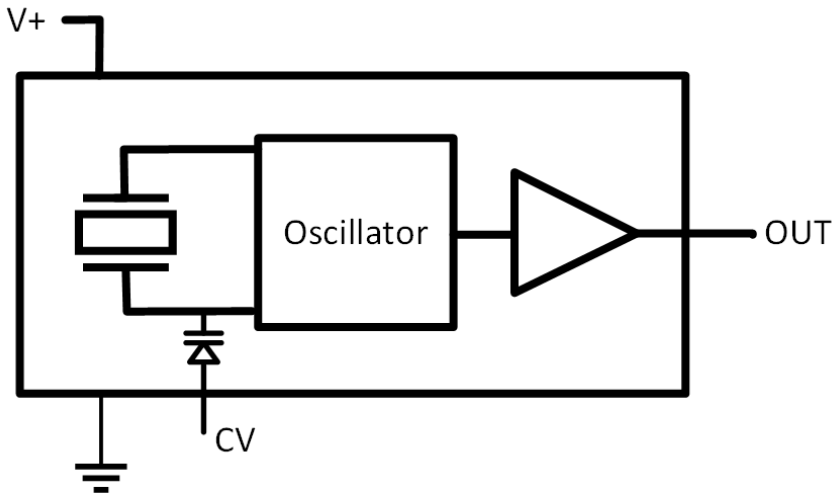
# VS-506

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 3 GHz
- Output: Sine
- Footprint: 14 x 9 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- 1.2ppb/g
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 20 ppm




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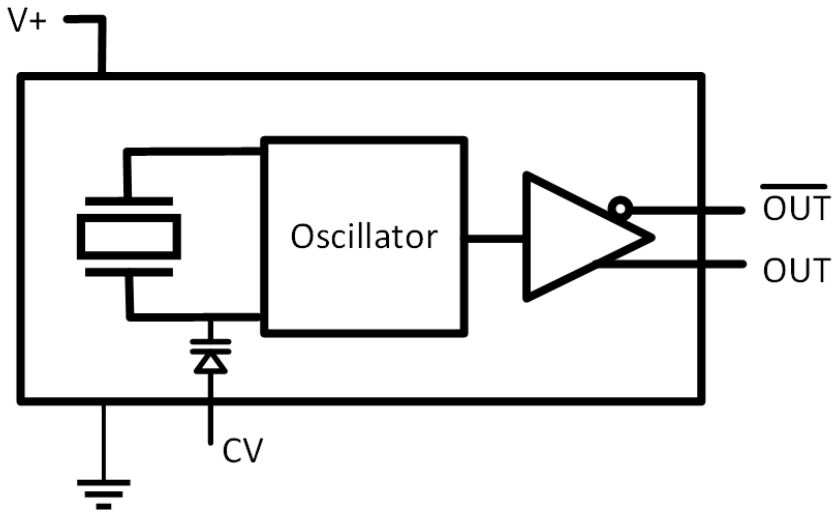
# VS-508

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 2.9 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 325 mW
- Temperature Range: 10 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -102 dBc/Hz @2000 MHz carrier
- Phase Noise 1 MHz offset: -150 dBc/Hz @2000MHz carrier




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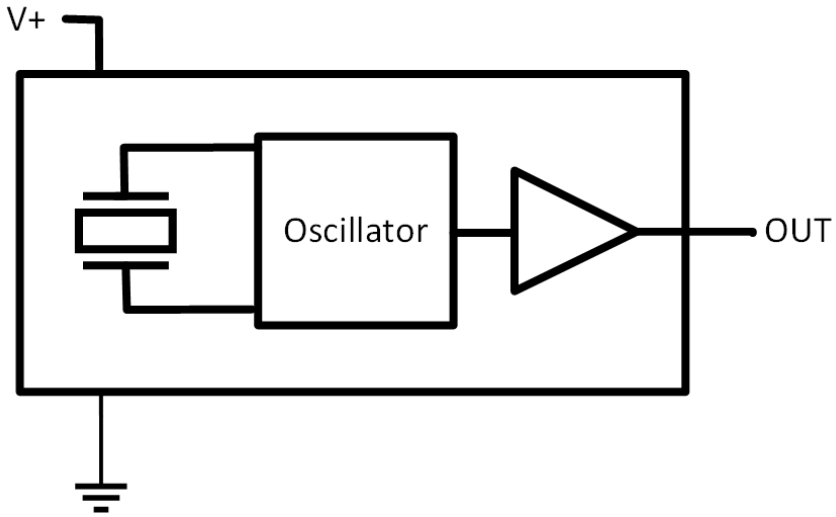
# PS-701

High shock SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: 10 to 85 °C
- 20000 g Shock, 0.2 ms Duration
- Phase Noise 10 Hz offset: -52 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -152 dBc/Hz @1000 MHz carrier




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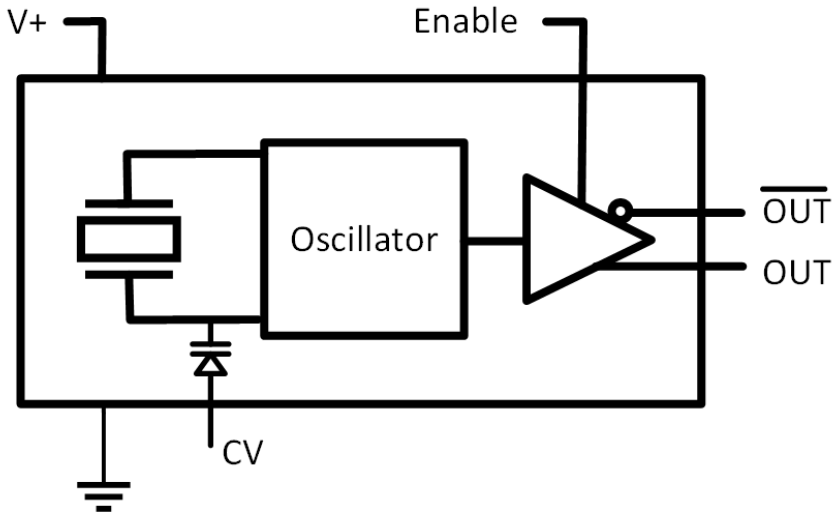
# VS-701

High shock VCSO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: 10 to 85 °C
- 20000 g Shock, 0.2 ms Duration
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -93 dBc/Hz @2000 MHz carrier
- Phase Noise 1 MHz offset: -158 dBc/Hz @2000MHz carrier




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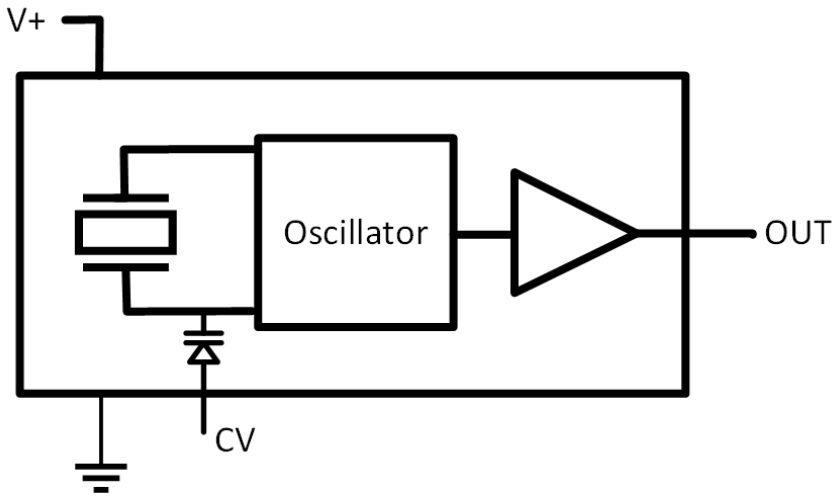
# DOC206559

Space VCSO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 0.3 to 1.5 GHz
- Output: Sine
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3, 5, 12 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 300 krad TID
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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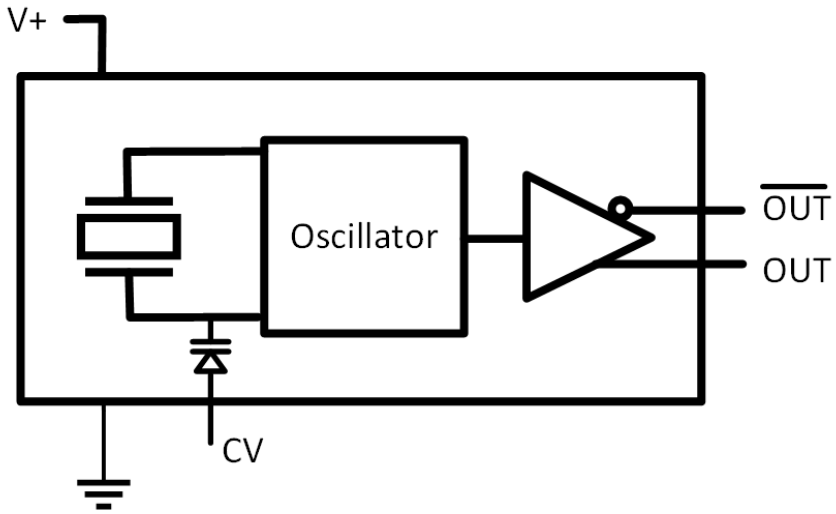
# DOC206906

Space VCSO

Online Datasheet

## Features:

- Internal Microchip SAW resonator
- Target Market: Space
- Frequency Range: 0.3 to 1 GHz
- Output: LVPECL
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 33 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 50 krad ELDRS
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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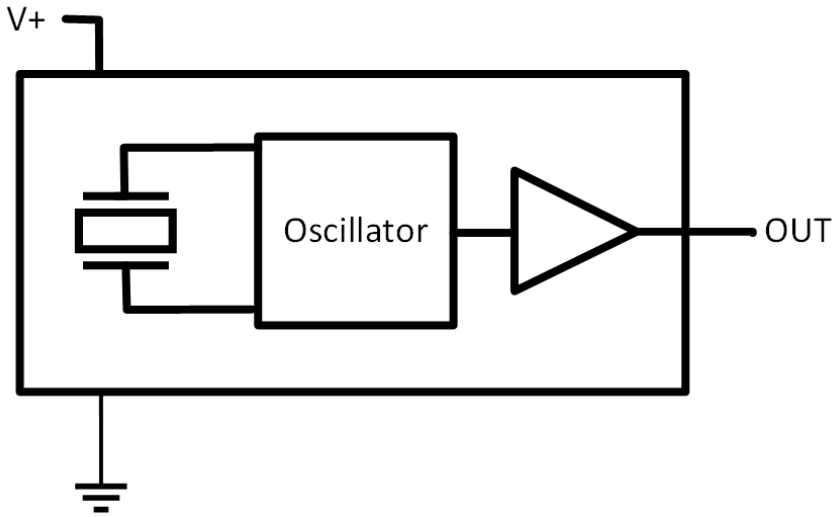
# PS-501

Standard SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




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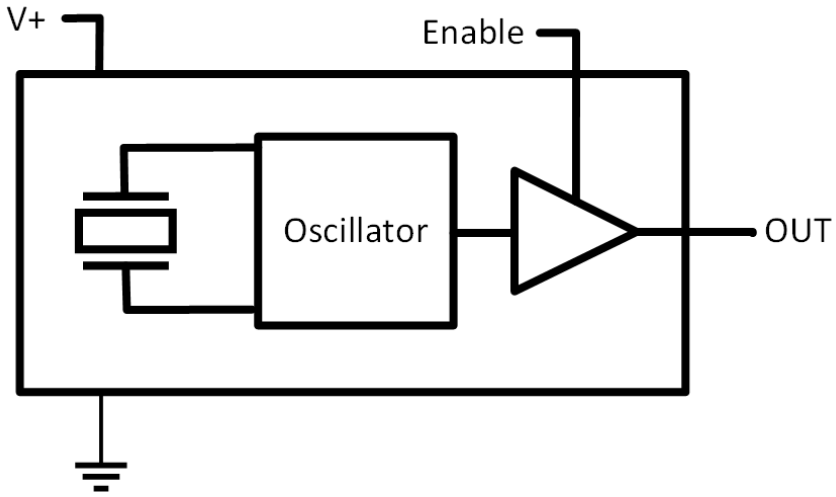
# PX-421

Standard XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 0.01 to 125 MHz
- Output: CMOS, TTL
- Footprint: 13 x 13 mm, through hole, surface mount
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 1.8 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- Aging per Year: 3 ppm




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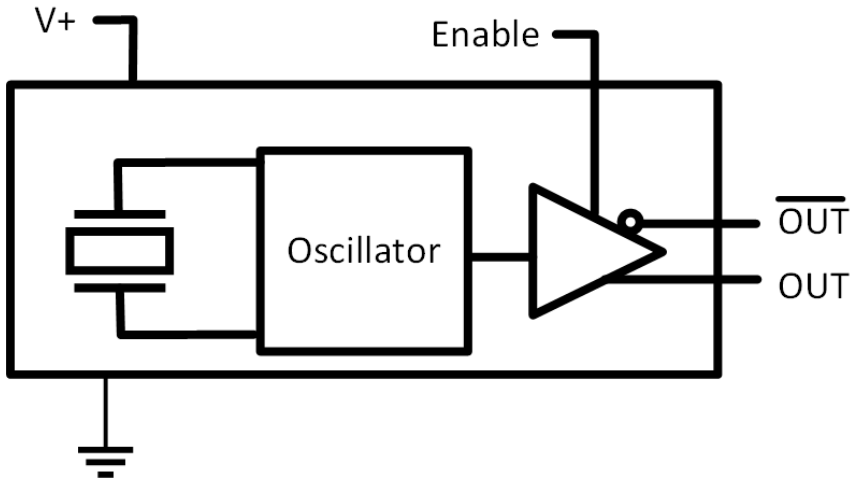
# PX-706

Standard XO

Online Datasheet

## Features:

- Frequency Range: 40 to 300 MHz
- Output: CMOS, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- Aging per Year: 0 ppm




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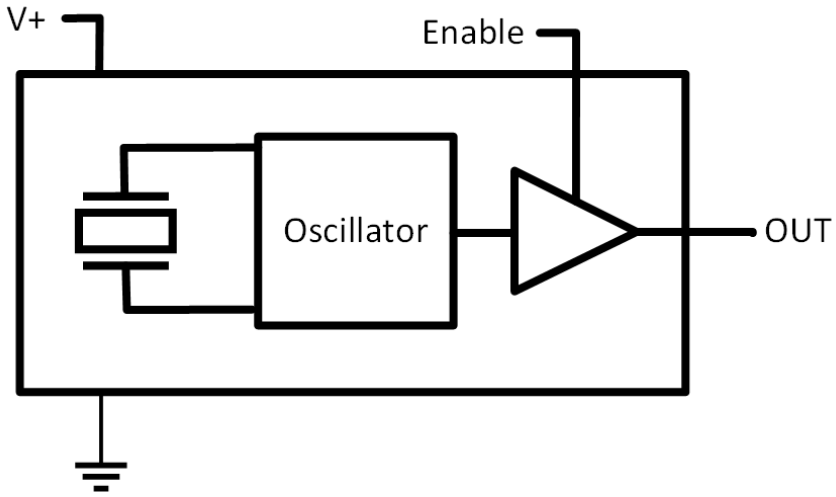
# VC-801

Standard XO

Online Datasheet

## Features:

- Frequency Range: 0.03277 to 125 MHz
- Output: CMOS
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 9 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- 12k to 20 MHz jitter: 500 fs-rms @ 125 MHz




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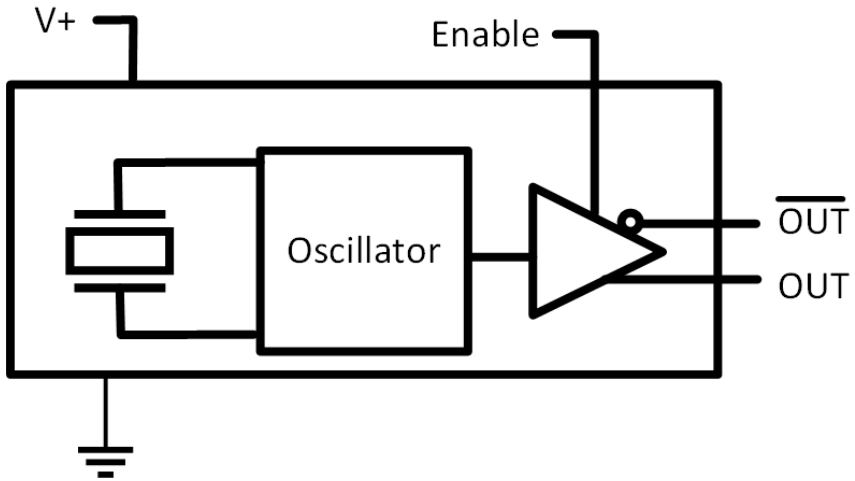
# VC-806

Standard XO

Online Datasheet

## Features:

- Frequency Range: 25 to 250 MHz
- Output: LVPECL, LVDS
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 150 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- 12k to 20 MHz jitter: 300 fs-rms @ 155.52 MHz




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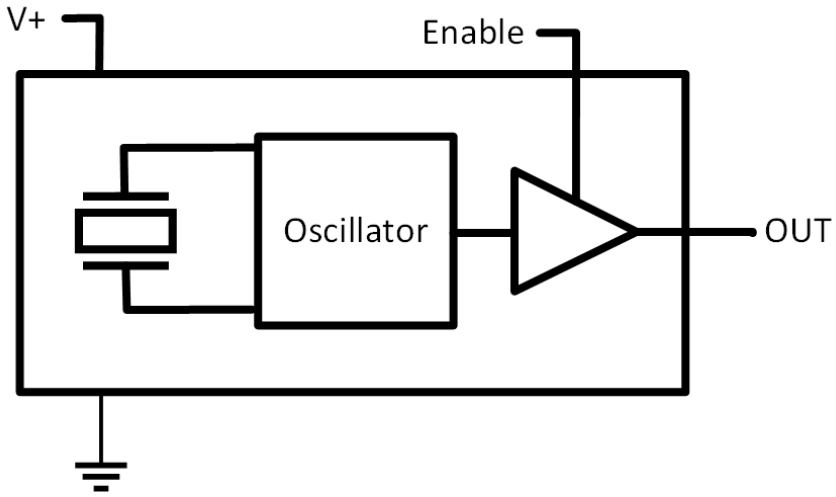
# VC-820

Standard XO

Online Datasheet

## Features:

- Frequency Range: 0.625 to 133 MHz
- Output: CMOS
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3.3 V
- Power: 4.5 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- 12k to 20 MHz jitter: 61 fs-rms @ 125 MHz




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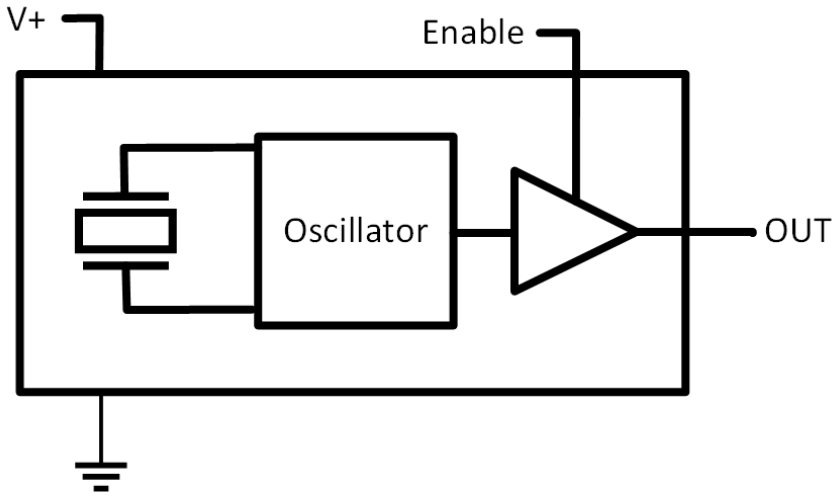
# VC-840

Standard XO

Online Datasheet

## Features:

- Frequency Range: 0.75 to 60 MHz
- Output: CMOS
- Footprint: 2.5 x 2 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3.3 V
- Power: 4.5 mW
- Temperature Range: -40 to 105 °C
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- 12k to 20 MHz jitter: 177 fs-rms @ 25 MHz




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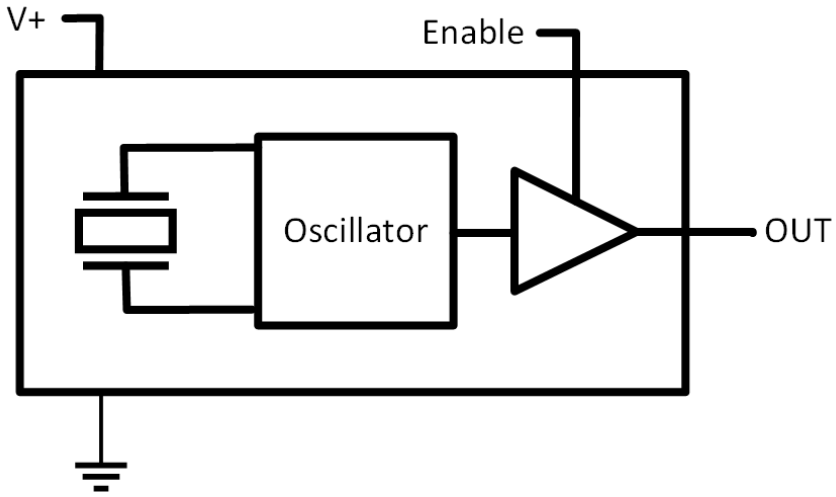
# VCC1

Standard XO

Online Datasheet

## Features:

- Frequency Range: 1.024 to 190 MHz
- Standard Frequencies: 20, 24.576, 25 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 9 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 25 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- 12k to 20 MHz jitter: 500 fs-rms @ 125 MHz




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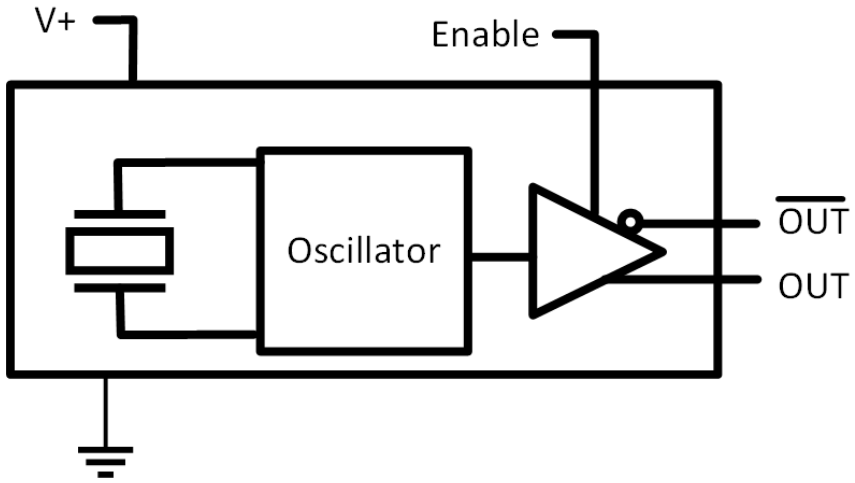
# VCC6

Standard XO

Online Datasheet

## Features:

- Frequency Range: 10 to 275 MHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 150 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 20 ppm
- Temperature Stabilty -40 to 85°C: 20 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- 12k to 20 MHz jitter: 300 fs-rms @ 155.52 MHz




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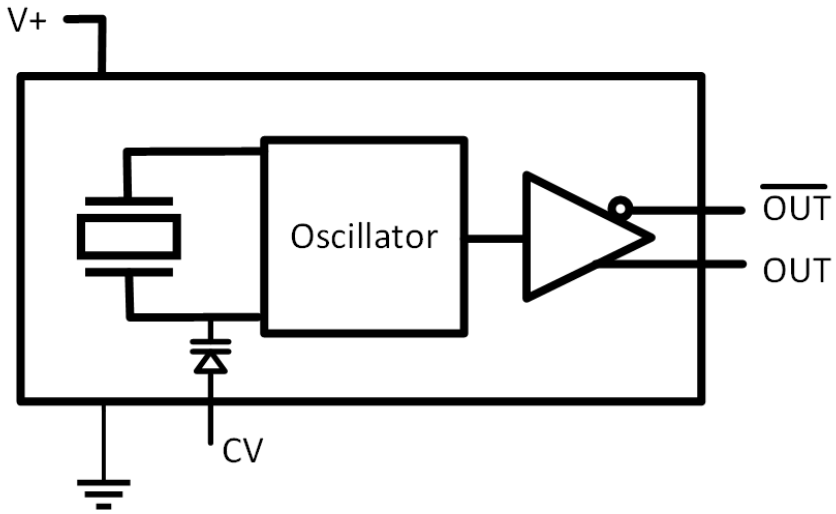
# XO-400

Standard XO

Online Datasheet

## Features:

- Frequency Range: 15 to 250 MHz
- Output: LVPECL
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 264 mW
- Temperature Range: -40 to 85 °C




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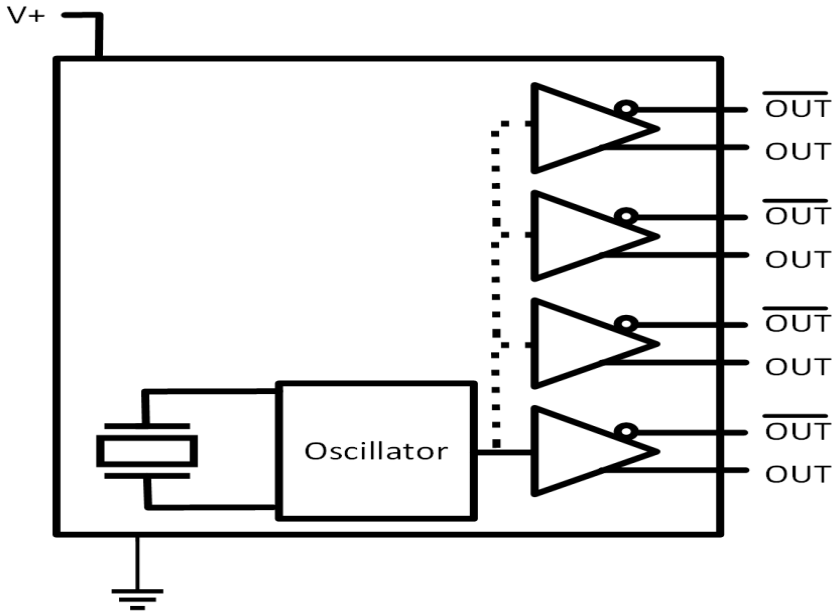
# DOC203679

Space XO

Online Datasheet

## Features:

- Ideal for driving RTG4 FPGA
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2,4 pairs
- Output: LVDS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company


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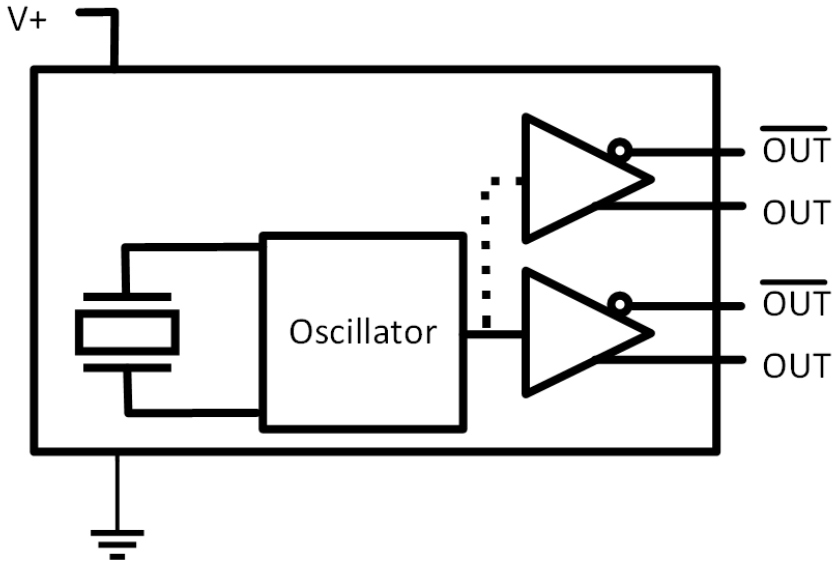
# DOC203810

Space XO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVPECL
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 50 krad ELDRS
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company

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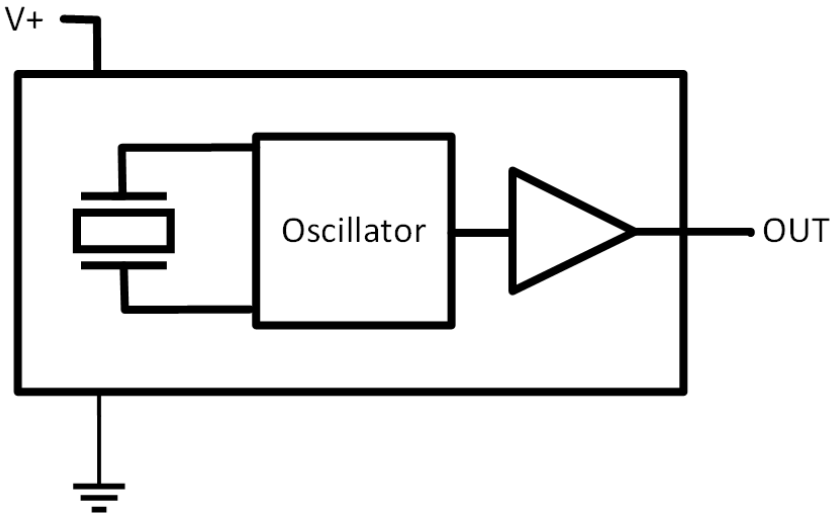
# DOC204900

Space XO

Online Datasheet

## Features:

- SET/SEU free to >90 MeV-cm2/mg
- Target Market: Space
- Frequency Range: 12 to 160 MHz
- Output: CMOS
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 250 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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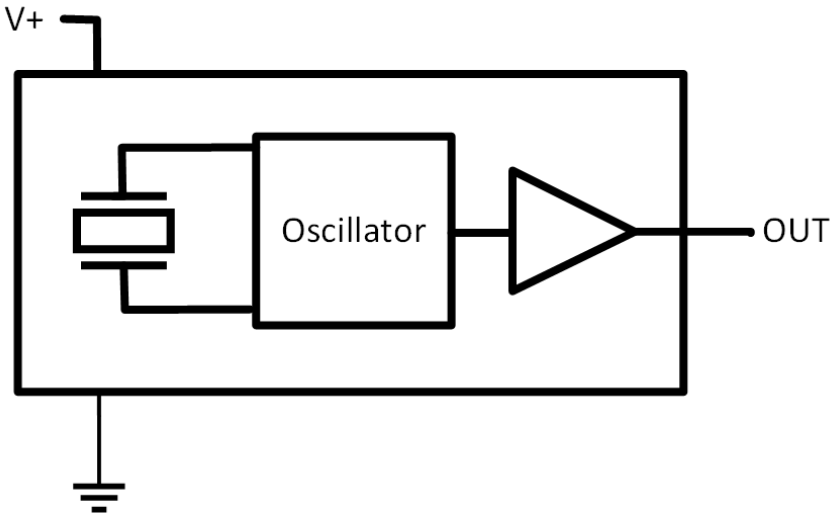
# DOC206379

Space XO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 12 to 100 MHz
- Output: CMOS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 241 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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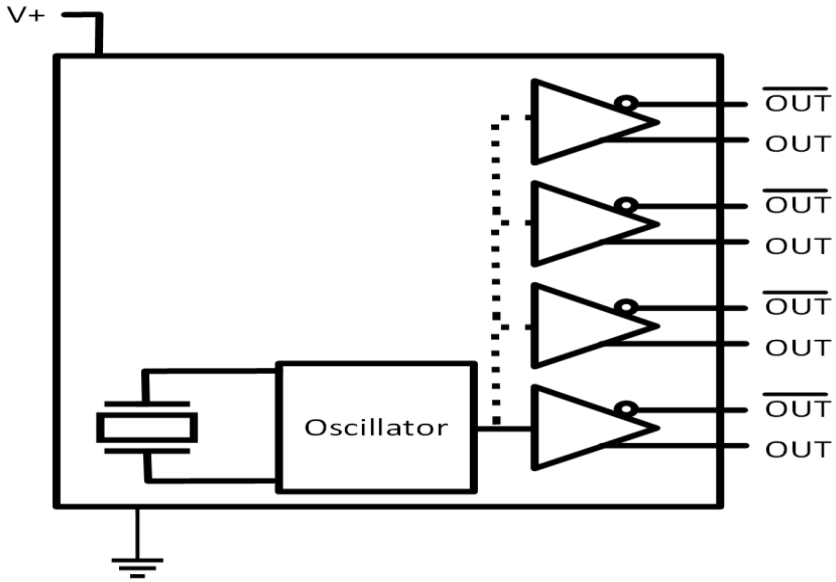
# DOC206903

Space XO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2,4 pairs
- Output: LVDS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 250 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company


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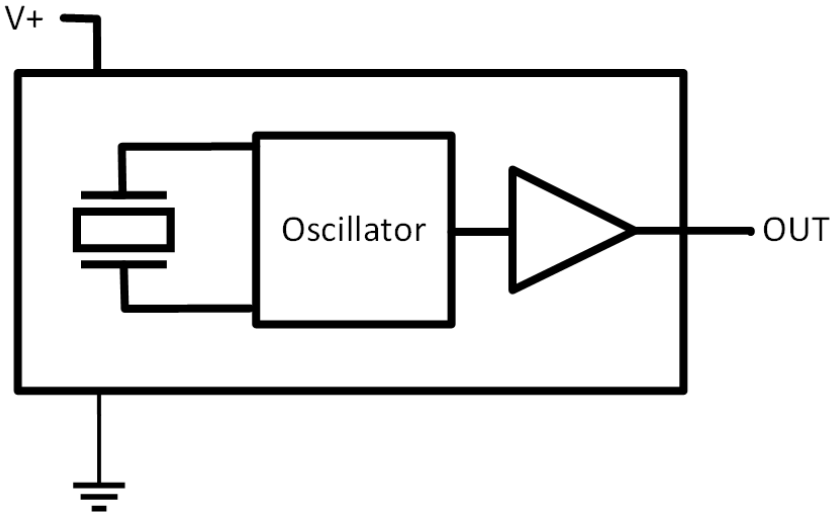
# OS-68338

Space XO

Online Datasheet

## Features:

- Ruggedized CMOS output Space XO with 100 krad tolerance
- Target Market: Space
- Frequency Range: 0.35 to 100 MHz
- Output: CMOS, TTL
- Footprint: multiple options, see specification mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 19.8 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company


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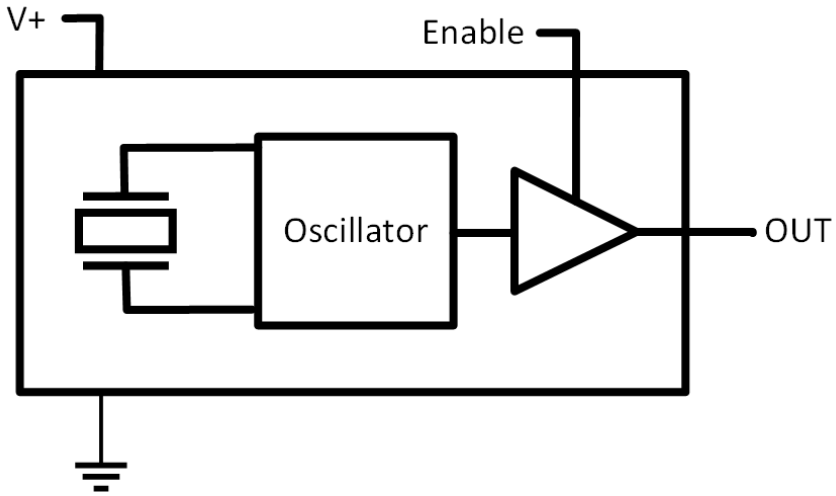
# PX-420

High temp XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 0.5 to 40 MHz
- Output: CMOS
- Footprint: 13 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 1000 g Shock, 0.5 ms Duration




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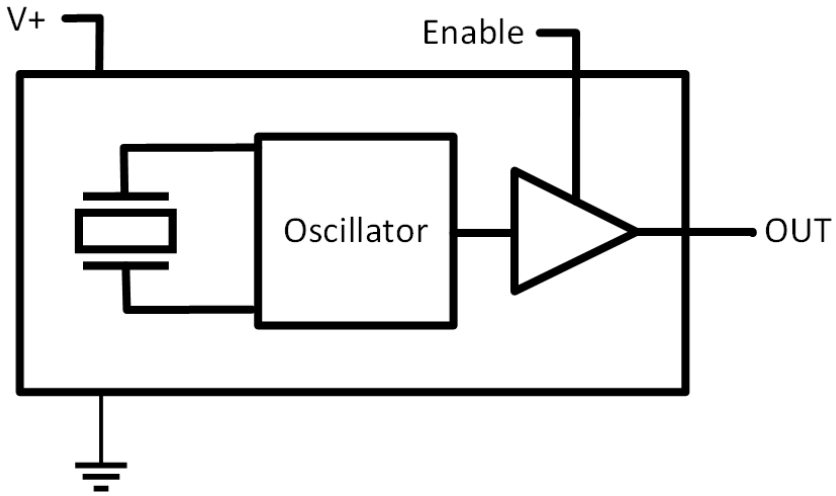
# PX-570

High temp XO

Online Datasheet

## Features:

- Frequency Range: 0.5 to 40 MHz
- Output: CMOS
- Footprint: 8.5 x 8 mm, through hole, surface mount
- Supply Voltage: 1.8, 2.5, 3, 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 1000 g Shock, 0.5 ms Duration
- 20 g Vibration




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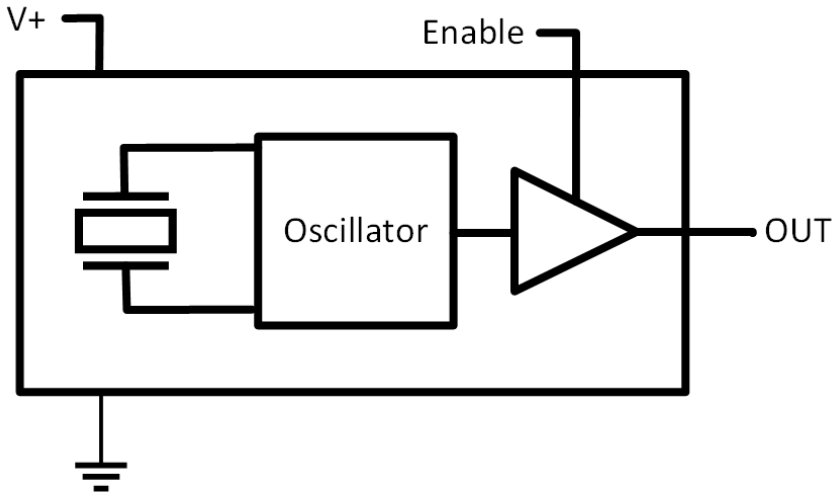
# PX-610

High temp XO

Online Datasheet

## Features:

- Target Market: Energy
- Frequency Range: 0.032768 to 40 MHz
- Output: CMOS
- Footprint: Ø9.65 mm, through hole
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 1000 g Shock, 0.5 ms Duration
- 20 g Vibration




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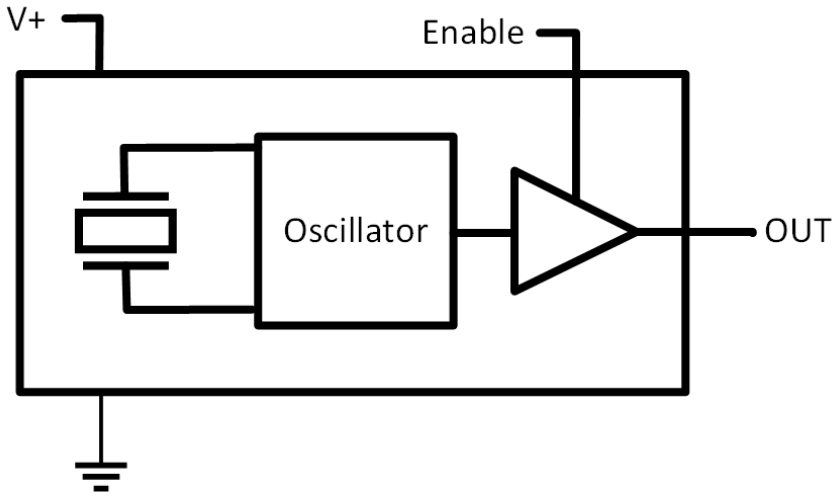
# PX-702

High temp XO

Online Datasheet

## Features:

- Target Market: Energy
- Frequency Range: 0.5 to 50 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3, 3.3, 5 V
- Power: 1.8 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 3000 g Shock, 0.3 ms Duration
- 30 g Vibration




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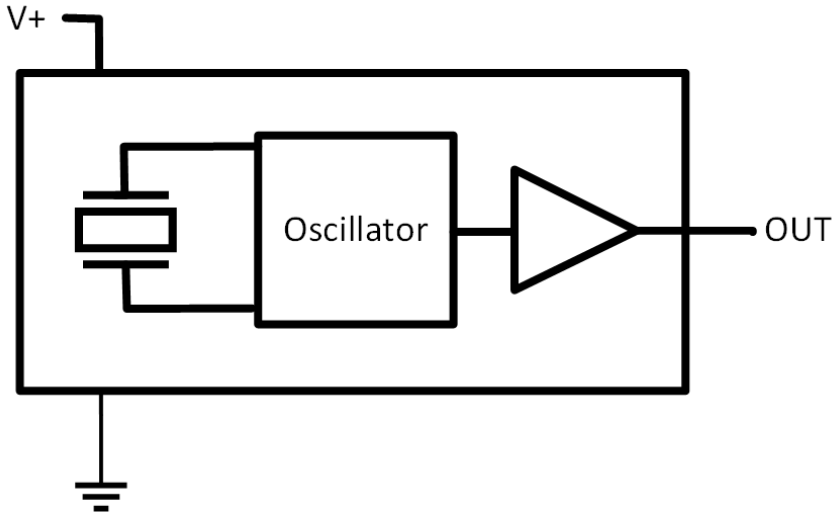
# HT-RTC-XO

Real time clock XO

Online Datasheet

## Features:

- Stand alone high temp low power Xos at 32.768 kHz
- Target Market: Energy
- 0.032768 MHz
- Standard Frequency: 0.032768 MHz
- Output: CMOS
- Footprint: multiple options, see specification mm, through hole, surface mount
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 33 mW
- Temperature Range: -55 to 200 °C
- Temperature Stabilty over Operating Temperature Range: 100 ppm




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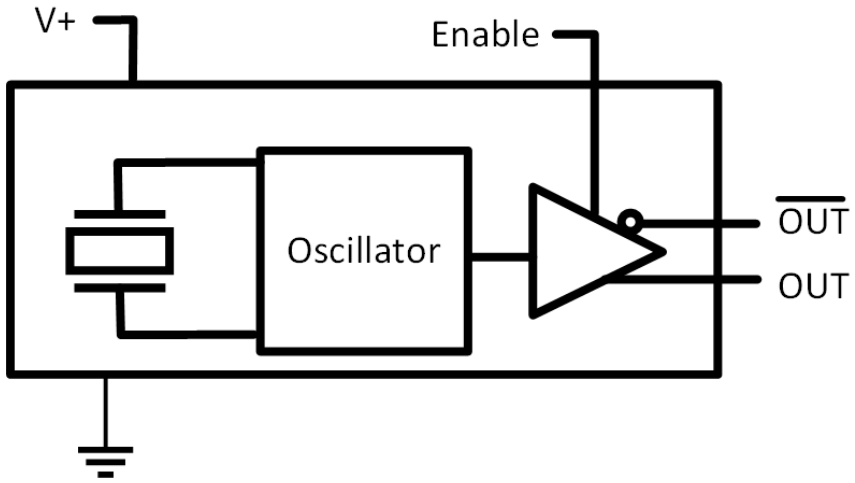
# VC-711

Low jitter XO

Online Datasheet

## Features:

- Frequency Range: 10 to 170 MHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 152.5 mW
- Temperature Range: -40 to 105 °C
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- 12k to 20 MHz jitter: 100 fs-rms @ 156.25 MHz




Vectron™ | a Microchip company


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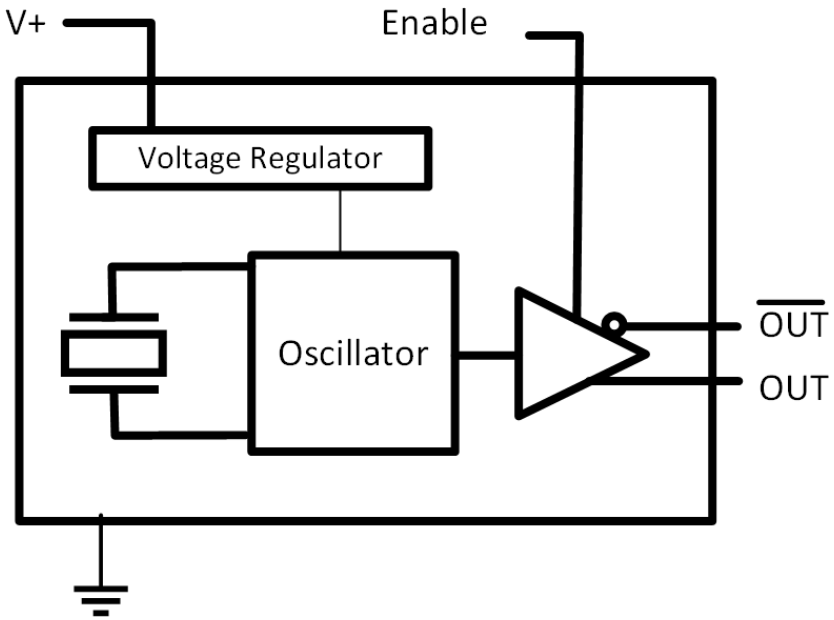
# VC-827

Low jitter XO

Online Datasheet

## Features:

- Frequency Range: 20 to 170 MHz
- Output: LVPECL, LVDS
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 152.5 mW
- Temperature Range: -40 to 105 °C
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- 12k to 20 MHz jitter: 130 fs-rms @ 156.25 MHz




Vectron™ | a Microchip company

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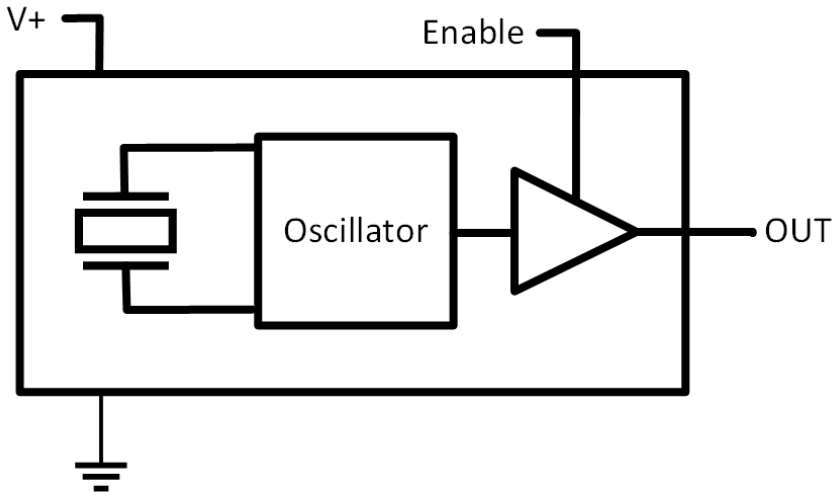
# PX-400

Precision XO

Online Datasheet

## Features:

- Frequency Range: 0.000001 to 200 MHz
- Output: CMOS, TTL
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 2.7 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm




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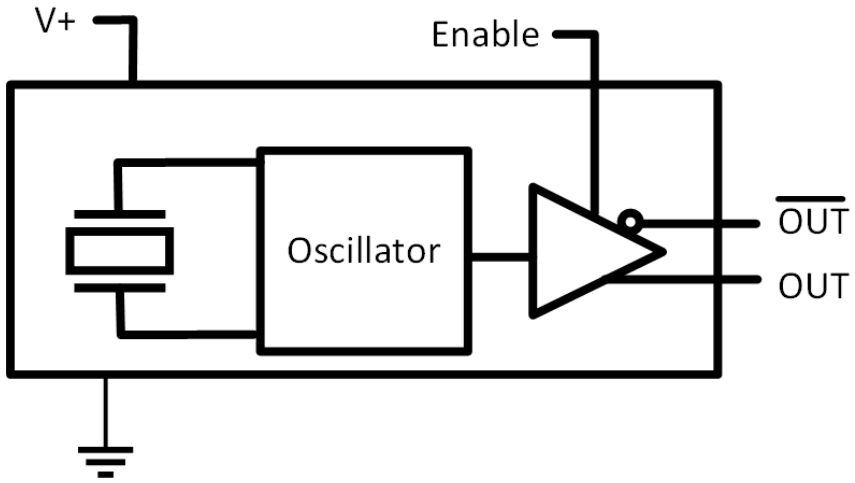
# PX-500

Precision XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




Vectron™ | a Microchip company

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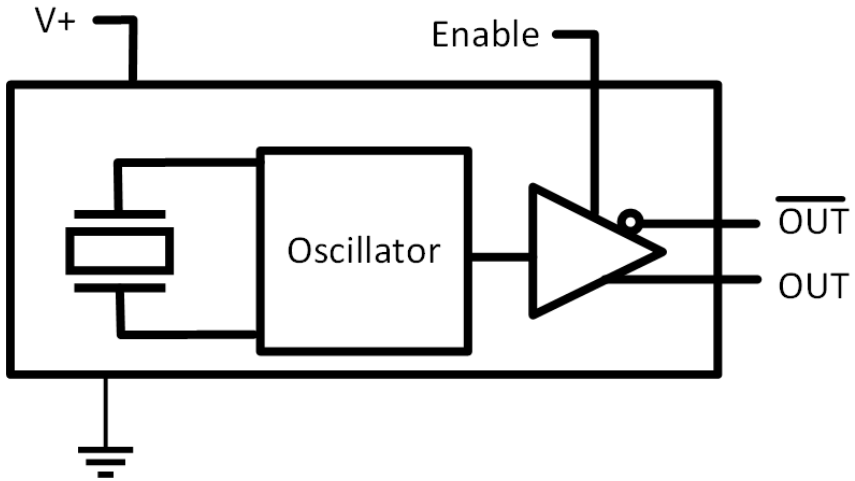
# PX-700

Precision XO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




Vectron™ | a Microchip company


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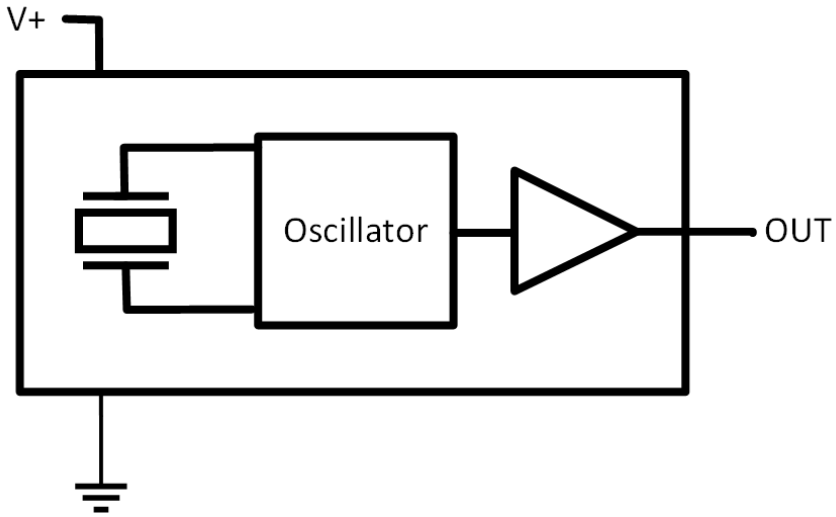
# PX-422

High shock XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 1 to 80 MHz
- Output: CMOS, TTL
- Footprint: 12 x 12 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 350 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 25 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- Aging per Year: 3 ppm




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<< BACK

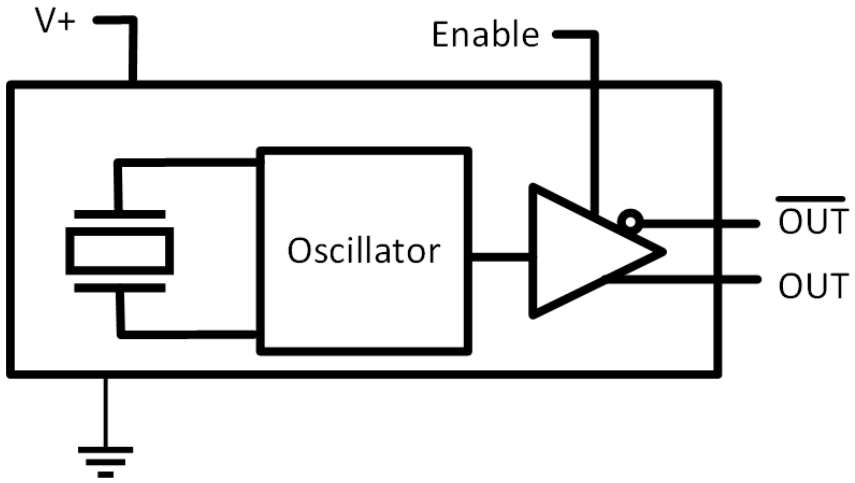
# PX-507

High shock XO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 2.7 mW
- Temperature Range: -55 to 125 °C
- 100 g Shock, 6 ms Duration




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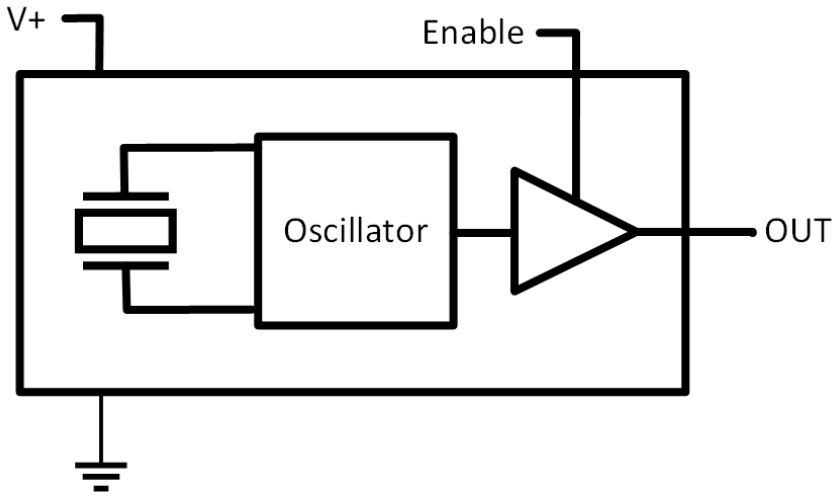
# PX-571

High shock XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 0.01 to 125 MHz
- Output: CMOS, TTL
- Footprint: 9 x 9 mm, through hole
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 27 mW
- Temperature Range: -55 to 125 °C
- 100 g Shock, 6 ms Duration




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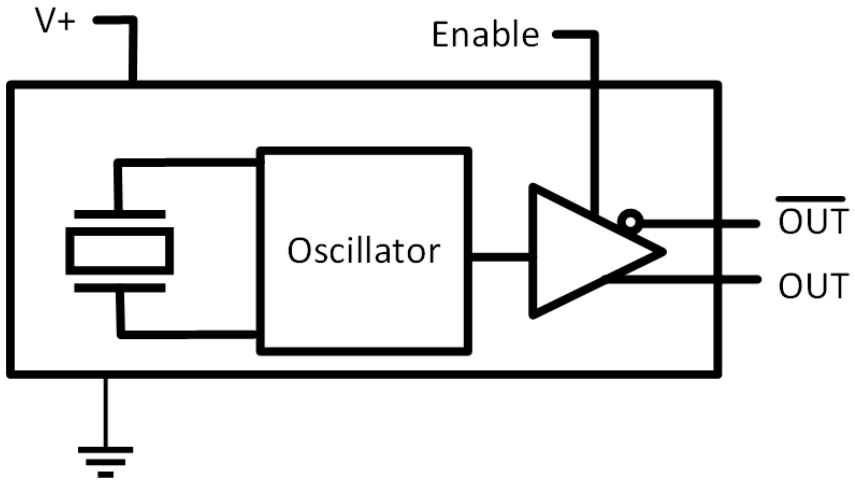
# VC-709

Low power XO

Online Datasheet

## Features:

- Frequency Range: 13.5 to 220 MHz
- Output: LVPECL, LVDS, HCSL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3, 3.3 V
- Power: 105 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 2 ppm
- 12k to 20 MHz jitter: 150 fs-rms @ 156.25 MHz




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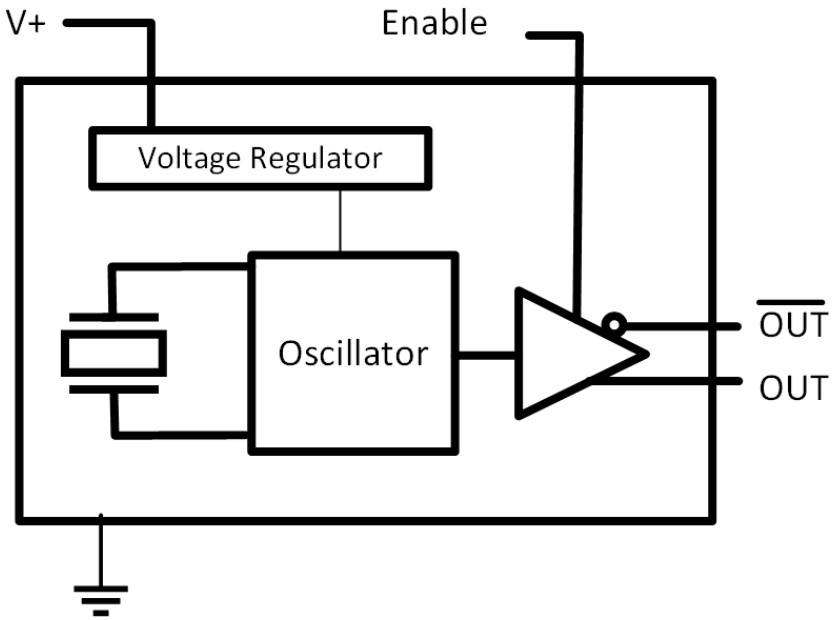
# VC-826

Low Power XO

Online Datasheet

## Features:

- Frequency Range: 20 to 170 MHz
- Standard Frequencies: 25, 50, 125 MHz
- Output: LVPECL, LVDS
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 35 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- 12k to 20 MHz jitter: 175 fs-rms @ 100 MHz




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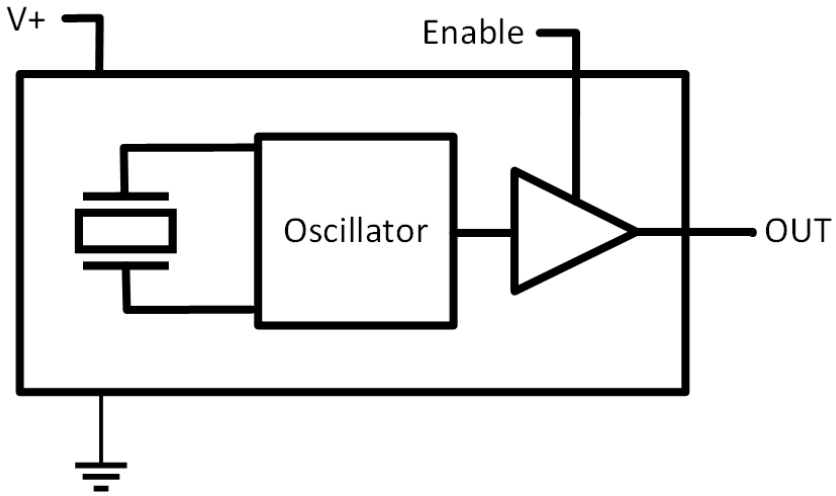
# PX-504

Low g XO

Online Datasheet

## Features:

- Frequency Range: 30 to 180 MHz
- Standard Frequencies: 50, 80, 100, 120, 122.88, 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- Aging per Year: 0 ppm




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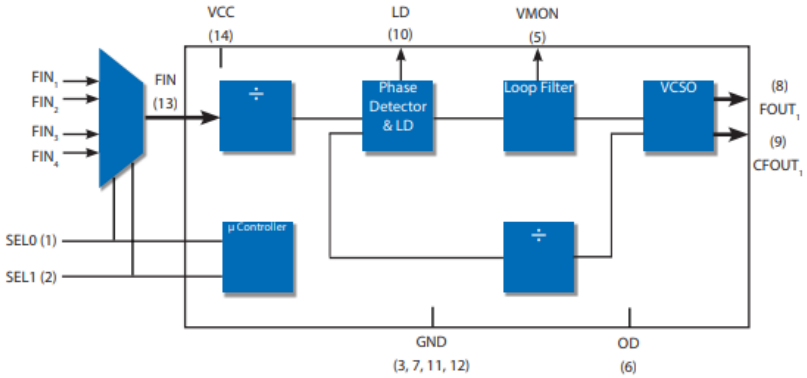
# FX-400

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 1.5 to 800 MHz
- Output: CMOS, LVPECL, LVDS
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 6 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 800 MHz
- Number of Inputs: 4
- Input Logic: CMOS, LVPECL, LVDS




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# FX-402

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 125 to 850 MHz
- Number of RF outputs: 2
- Output: LVPECL, LVDS
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.5 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 400 MHz
- Number of Inputs: 4
- Input Logic: CMOS, LVPECL, LVDS

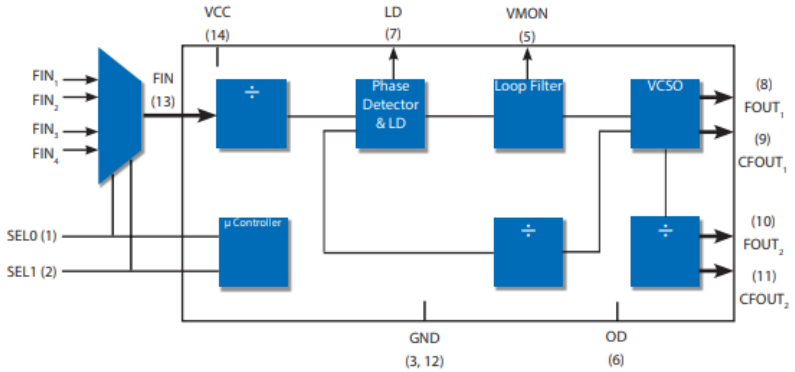



Figure 1. Functional block diagram

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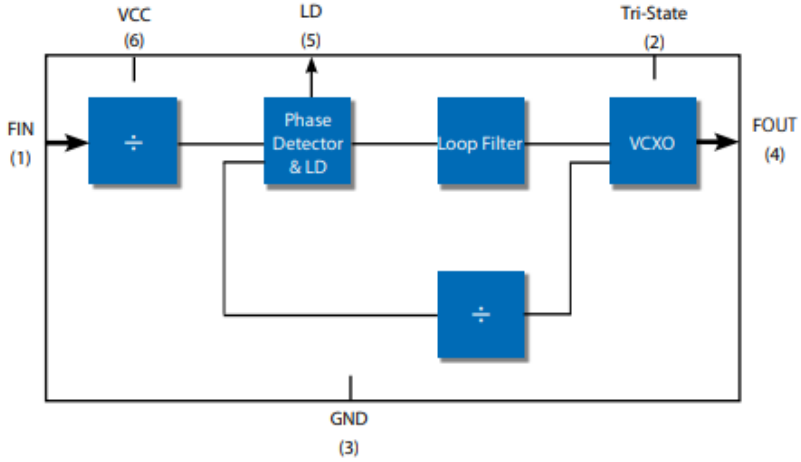
# FX-500

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 0.01 to 80 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 10 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 78 MHz
- Number of Inputs: 1
- Input Logic: CMOS, TTL




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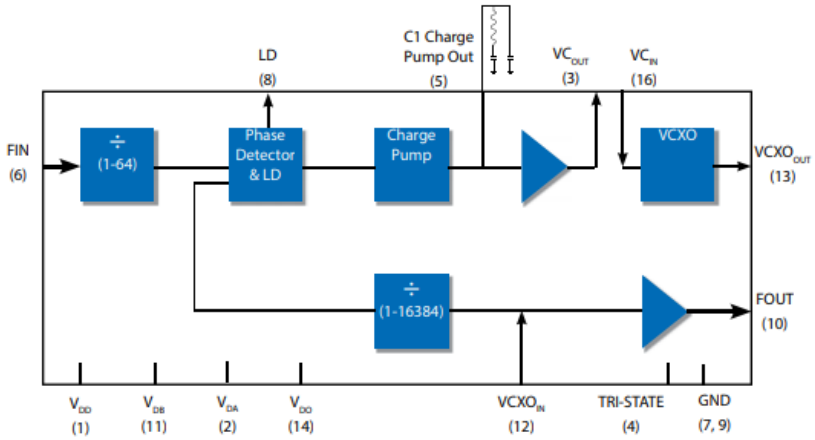
# FX-700

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 0.01 to 80 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 4 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 78 MHz
- Number of Inputs: 1
- Input Logic: CMOS, TTL




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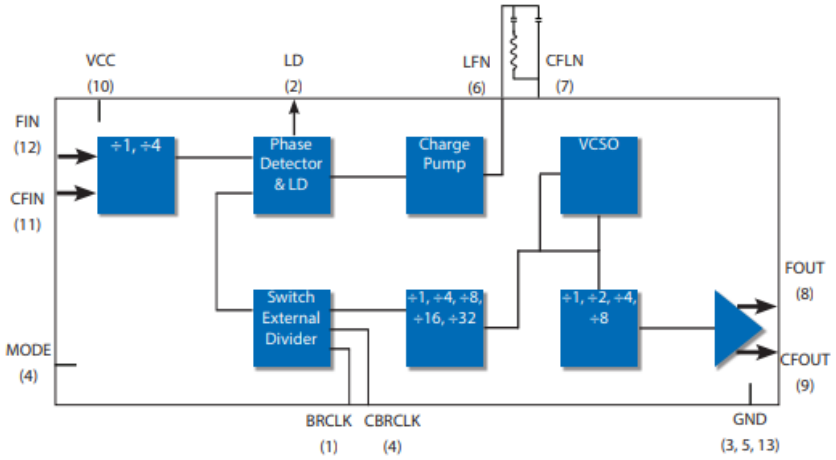
# FX-702

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 0.062 to 1.2 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 6 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 1 to 1000 MHz
- Number of Inputs: 1
- Input Logic: CMOS, LVPECL, LVDS




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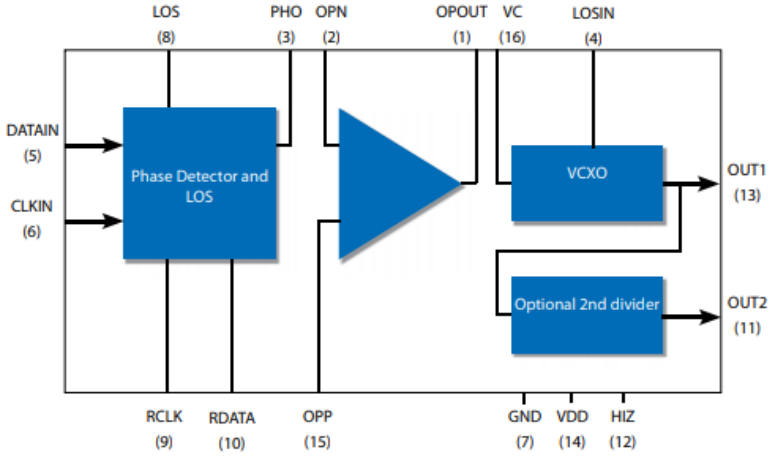
# CD-700

Clock data recovery

Online Datasheet

## Features:

- Recovers and cleans timing from data signal
- Frequency Range: 1 to 78 MHz
- Number of RF outputs: 2
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 78 MHz
- Input Logic: CMOS, TTL




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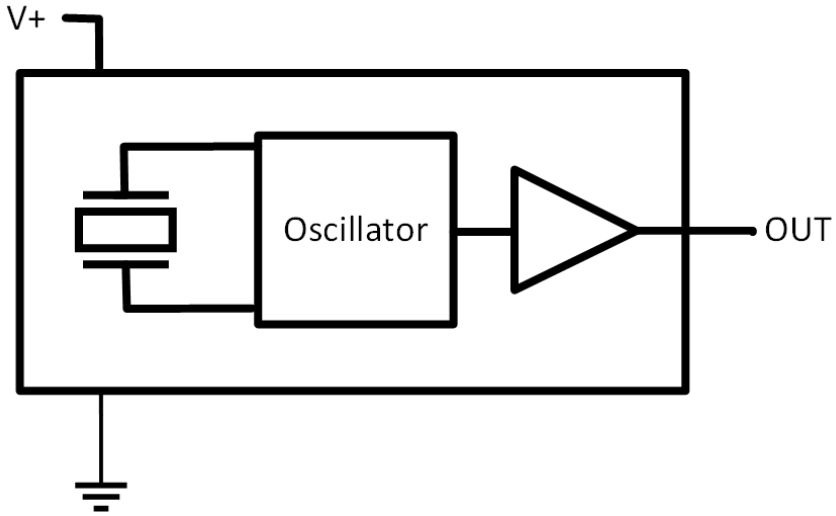
# HT-RTC-XO

Real time clock XO

Online Datasheet

## Features:

- Stand alone high temp low power Xos at 32.768 kHz
- Target Market: Energy
- 0.032768 MHz
- Standard Frequency: 0.032768 MHz
- Output: CMOS
- Footprint: multiple options, see specification mm, through hole, surface mount
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 33 mW
- Temperature Range: -55 to 200 °C
- Temperature Stabilty over Operating Temperature Range: 100 ppm




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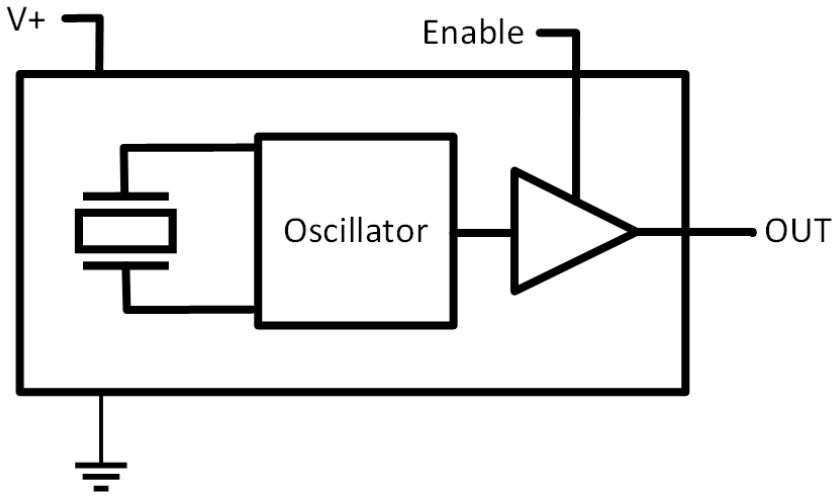
# PX-420

High temp XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 0.5 to 40 MHz
- Output: CMOS
- Footprint: 13 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 1000 g Shock, 0.5 ms Duration




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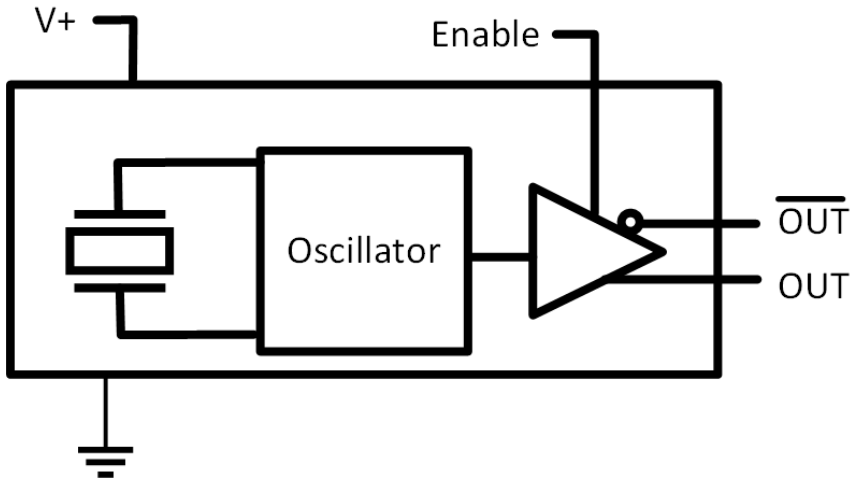
# PX-507

High Temp XO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 2.7 mW
- Temperature Range: -55 to 125 °C
- 100 g Shock, 6 ms Duration




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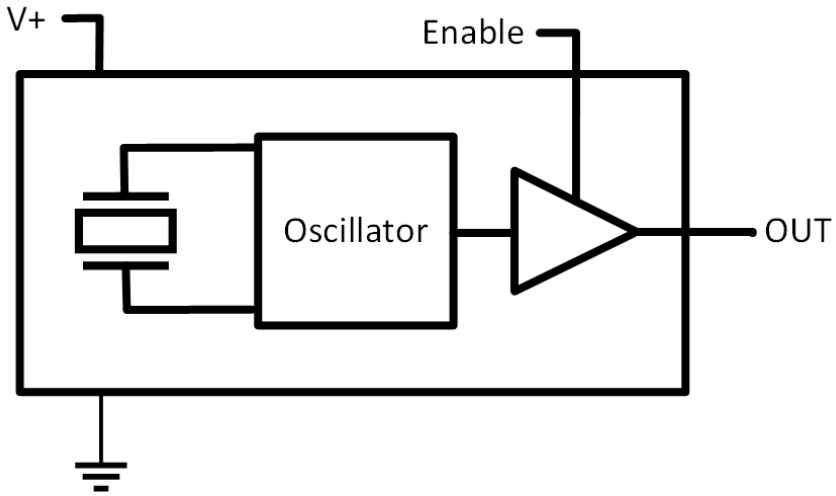
# PX-610

High temp XO

Online Datasheet

## Features:

- Target Market: Energy
- Frequency Range: 0.032768 to 40 MHz
- Output: CMOS
- Footprint: Ø9.65 mm, through hole
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 1000 g Shock, 0.5 ms Duration
- 20 g Vibration




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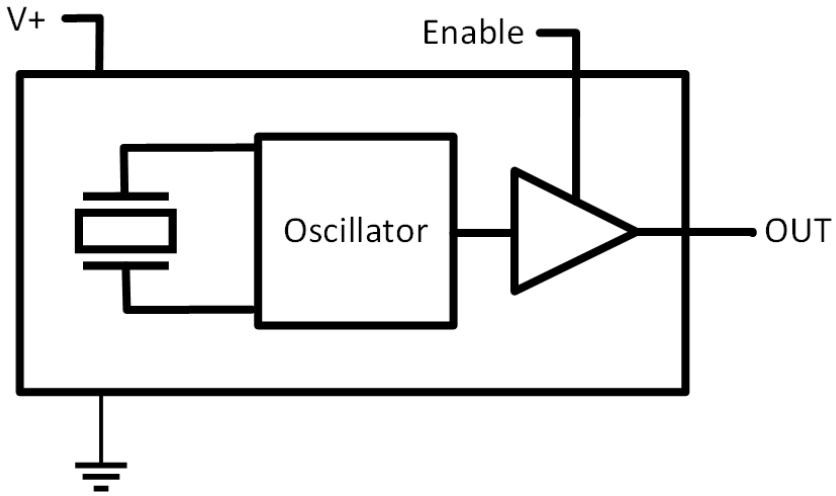
# PX-702

High temp XO

Online Datasheet

## Features:

- Target Market: Energy
- Frequency Range: 0.5 to 50 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 1.8, 2.5, 3, 3.3, 5 V
- Power: 1.8 mW
- Temperature Range: -55 to 230 °C
- Temperature Stabilty over Operating Temperature Range: 200 ppm
- 3000 g Shock, 0.3 ms Duration
- 30 g Vibration




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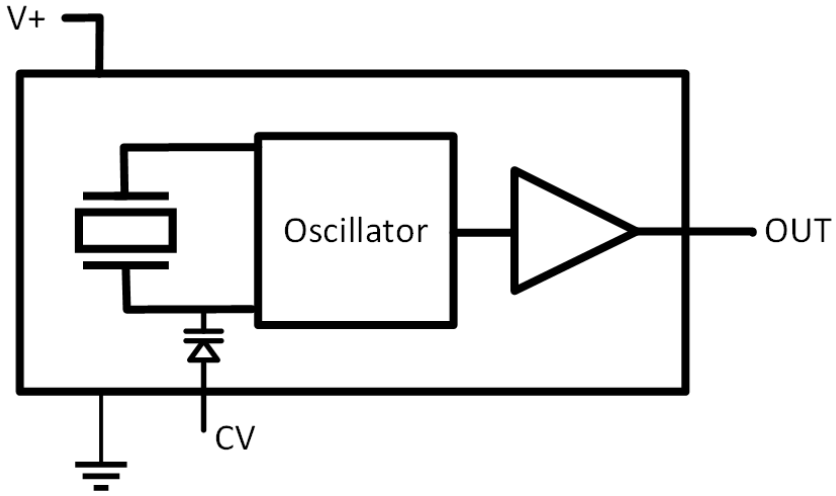
# VX-400

High temp VCXO

Online Datasheet

## Features:

- Frequency Range: 1 to 32.768 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 39.6 mW
- Temperature Range: -55 to 200 °C
- Temperature Stabilty over Operating Temperature Range: 0 ppm
- Absolute Pull Range: 50 ppm




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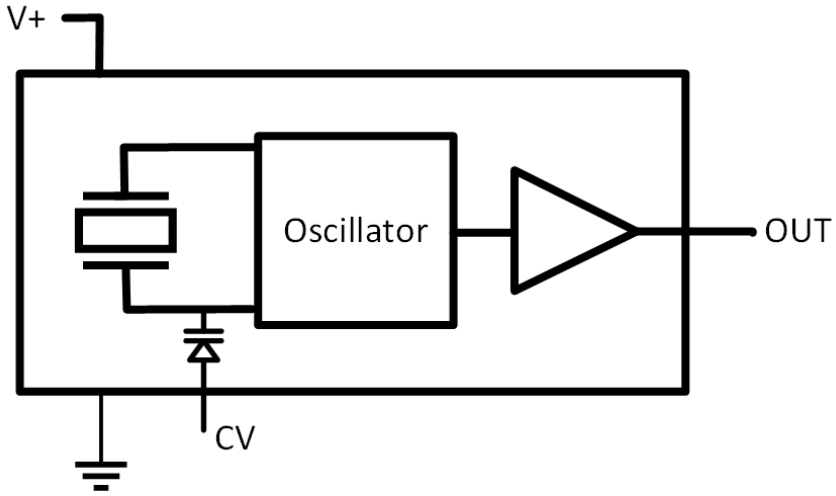
# VX-708

High temp VCXO

Online Datasheet

## Features:

- High temperature, small form factor VCO
- Frequency Range: 2 to 40 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 9.9 mW
- Temperature Range: -55 to 180 °C
- Absolute Pull Range: 25 ppm
- Phase Noise 10 Hz offset: −75 dBc/Hz @32 MHz carrier
- Phase Noise 100 kHz offset: -155 dBc/Hz @32 MHz carrier




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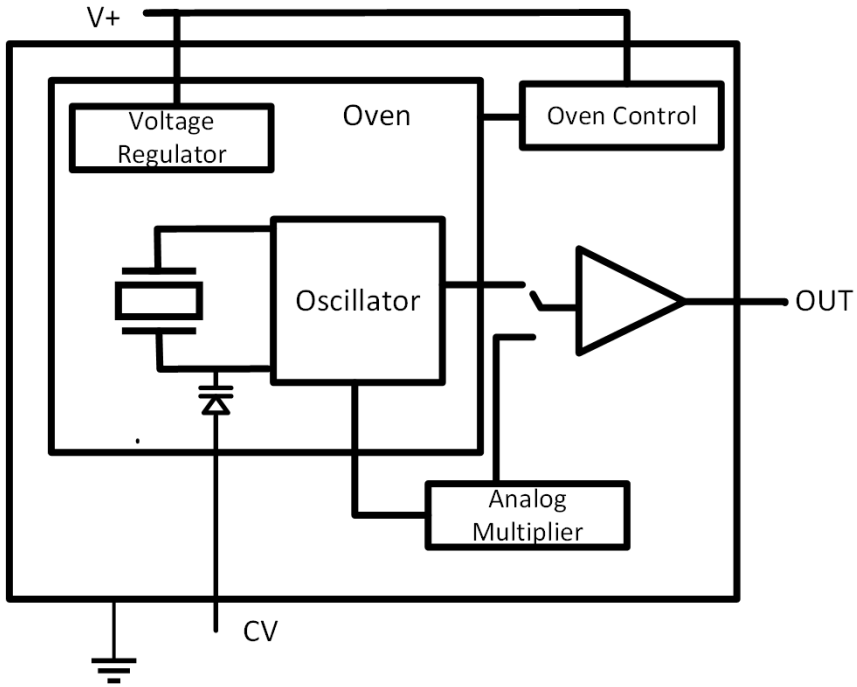
# HX-171

High temp OCXO

Online Datasheet

## Features:

- Target Market: Energy
- Frequency Range: 10 to 20 MHz
- Standard Frequencies: 10,20 MHz
- Output: CMOS
- Footprint: 28 x 38 mm, through hole
- Supply Voltage: 5 V
- Power: 75 mW
- Temperature Range: -40 to 150 °C
- Temperature Stabilty over Operating Temperature Range: 5 ppb
- Aging per Day: 0.5 ppb




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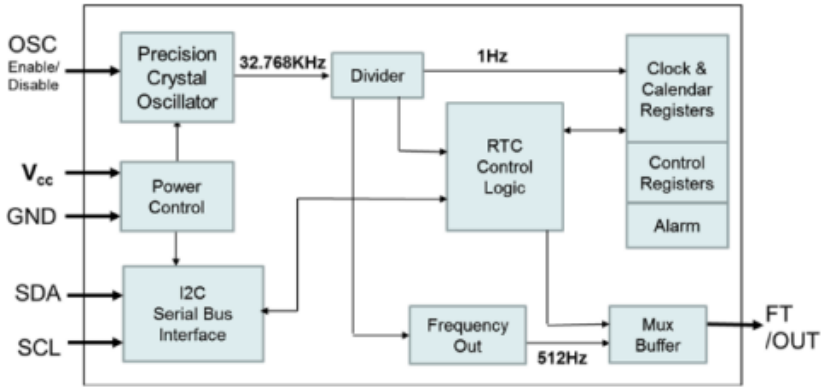
# HM-4201-RTCM1

Real time clock module

Online Datasheet

## Features:

- Real time clock module for time of day information on downhole applications
- Target Market: Energy
- 0.000512 MHz
- Standard Frequency: 0.000512 MHz
- Output: CMOS
- Footprint: 13 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3 V
- Power: 20 mW
- Temperature Range: -40 to 200 °C
- Serial communications Interface
- 1000 g Shock, 0.5 ms Duration




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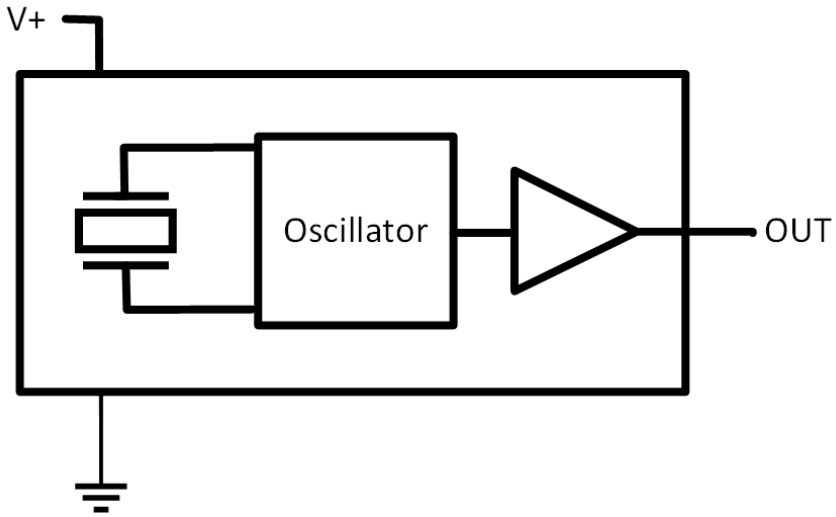
# M55310/09B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.4 to 60 MHz
- Output: TTL
- Footprint: Ø15.4 mm, through hole
- Supply Voltage: 5 V
- Power: 165 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 0.6 ms Duration
- 20 g Vibration




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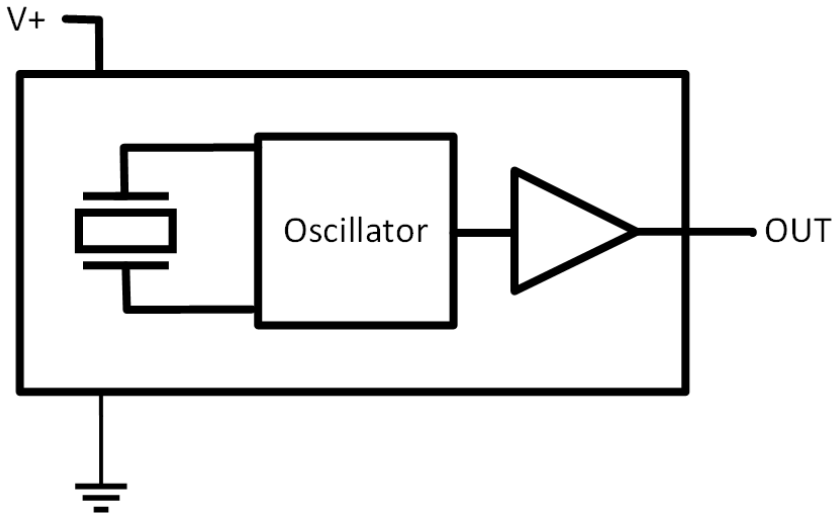
# M55310/16

Mil temp range and space XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.1 to 60 MHz
- Output: TTL
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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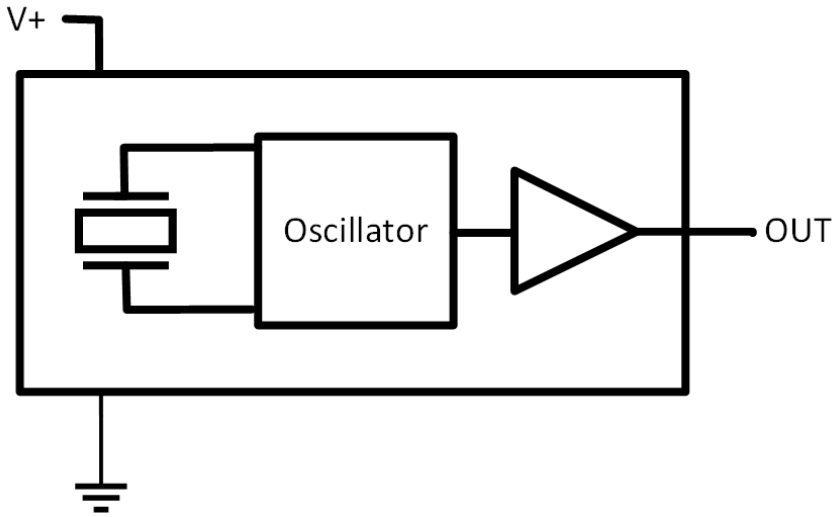
# M55310/19B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 60 MHz
- Output: TTL
- Footprint: 12 x 12 mm, surface mount
- Supply Voltage: 5 V
- Power: 350 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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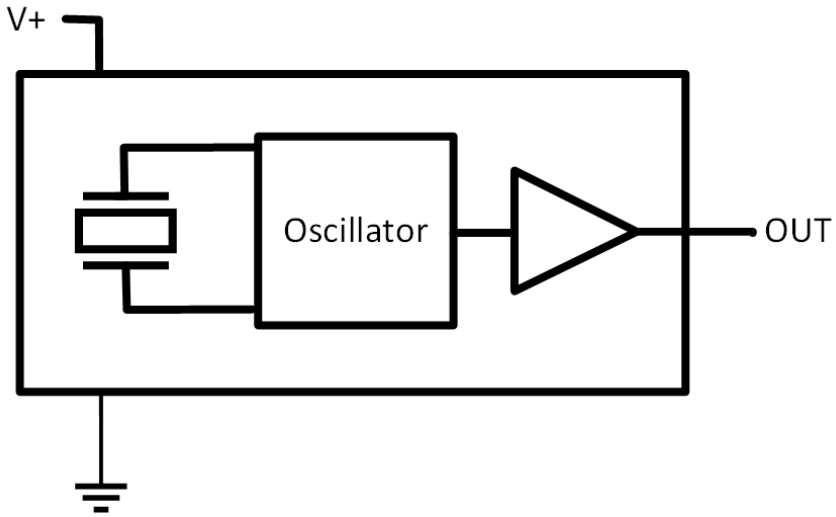
# M55310/21B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 60 MHz
- Output: TTL
- Footprint: 25 x 25 mm, surface mount
- Supply Voltage: 5 V
- Power: 150 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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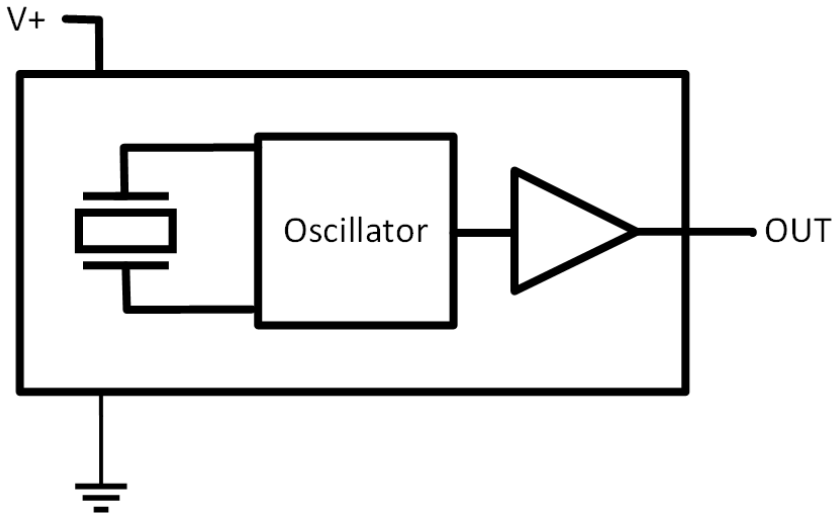
# M55310/26B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.01 to 65 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 5 V
- Power: 50 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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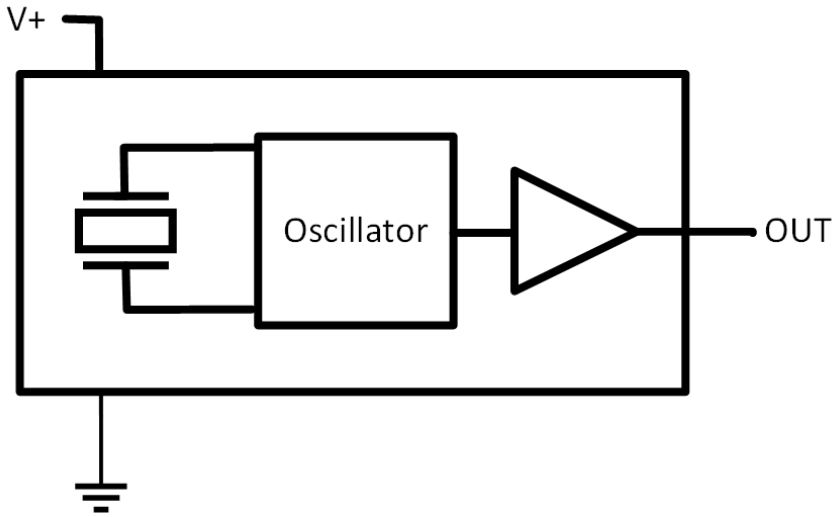
# M55310/27B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 85 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 5 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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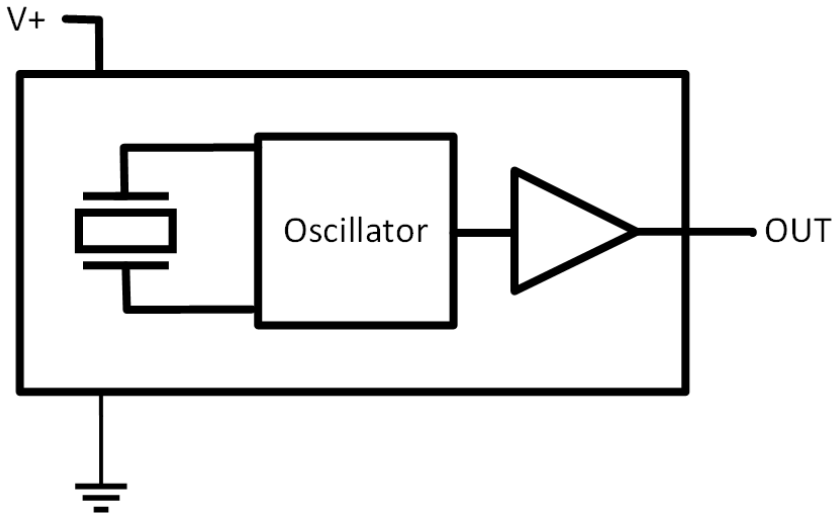
# M55310/28B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 85 MHz
- Output: TTL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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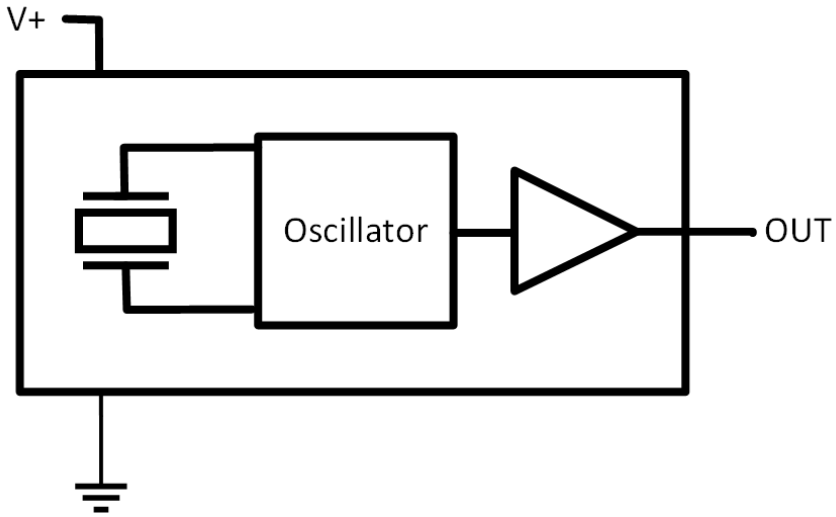
# M55310/30B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.45 to 85 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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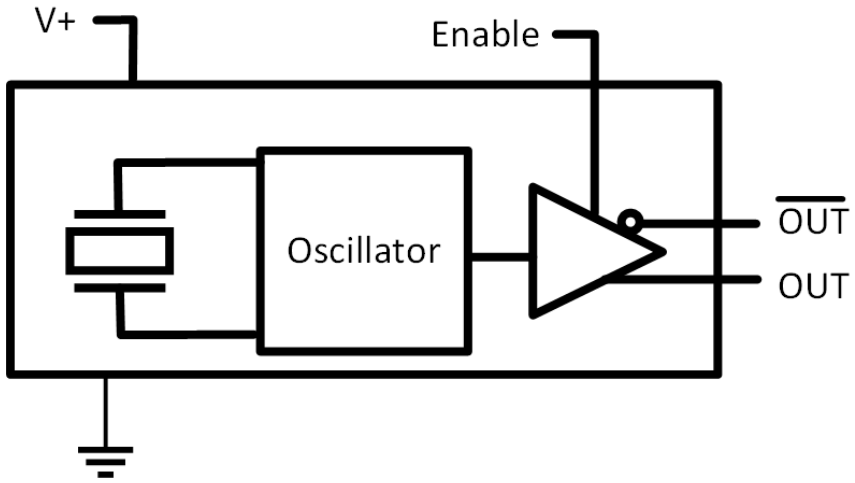
# PX-500

Precision XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




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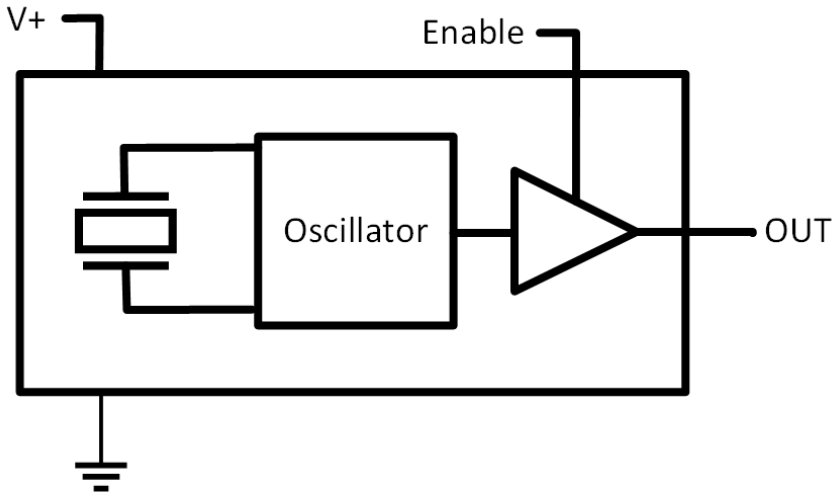
# PX-504

Low g XO

Online Datasheet

## Features:

- Frequency Range: 30 to 180 MHz
- Standard Frequencies: 50, 80, 100, 120, 122.88, 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- Aging per Year: 0 ppm




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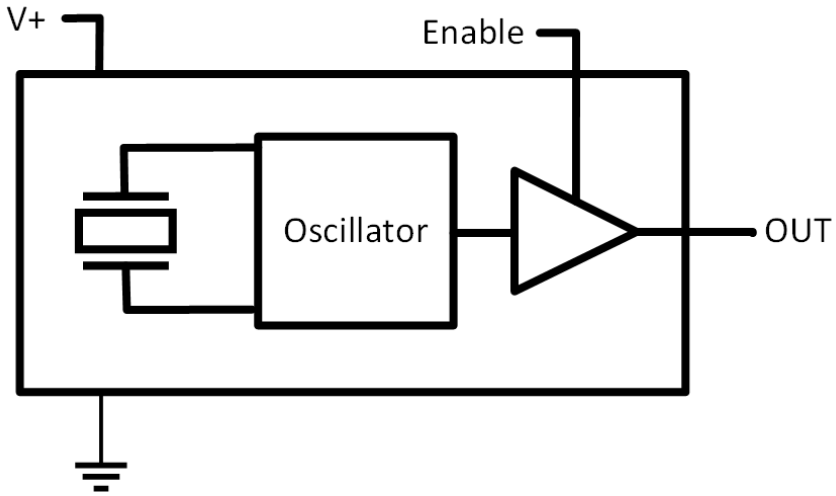
# PX-571

High shock XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 0.01 to 125 MHz
- Output: CMOS, TTL
- Footprint: 9 x 9 mm, through hole
- Supply Voltage: 1.8, 2.5, 3.3, 5 V
- Power: 27 mW
- Temperature Range: -55 to 125 °C
- 100 g Shock, 6 ms Duration




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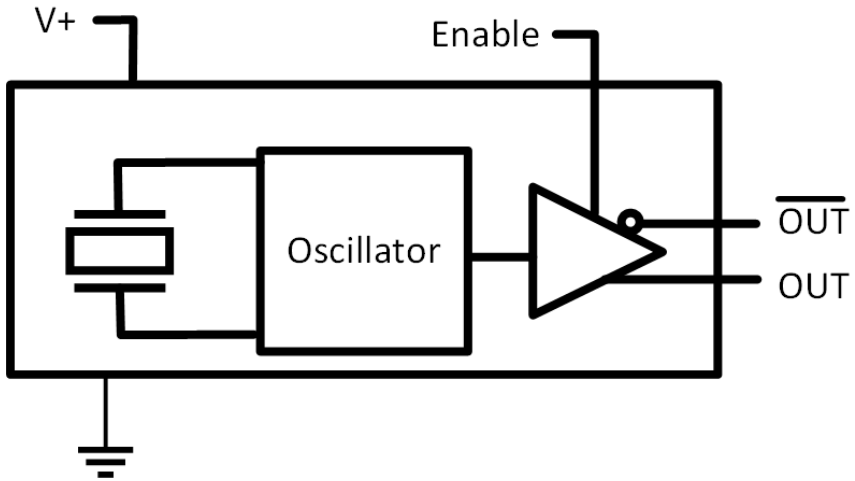
# PX-700

Precision XO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




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# DSC6000

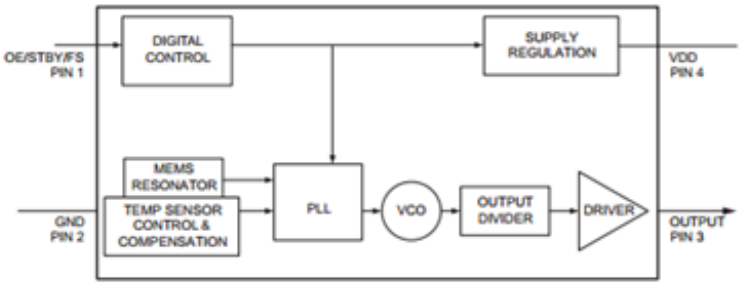
Ultra-Small, Ultra-Low Power MEMS Oscillator

Online Datasheet

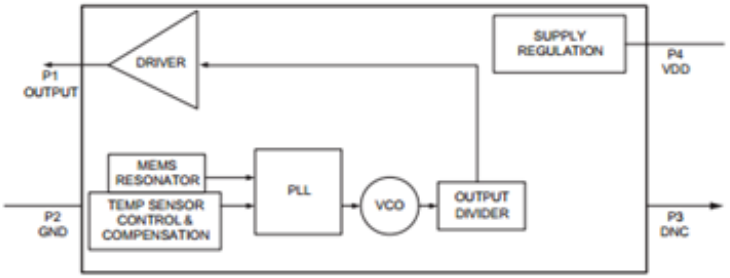
## Features:

- Wide Frequency Range:
- DSC60xx: 2kHz to 80MHz
- DSC61xx: 2KHz to 100MHz
- Ultra Low Power Consumption:
  - DSC60xx: 1.25mA/10.5uA (Active/Stdby)
  - DSC61xx: 3mA/10.5uA (Active/Stdby)
- Ultra Small Footprints:
  - 1.6mmx1.2mm, 2.0mmx1.6mm,
  - 2.5mmx2.0mm, 3.2mmx2.5mm
- Frequency Select input supports 2 frequencies
- High Stability: ±25, ±50 ppm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability
- 20x better MTF than quartz oscillators
- Supply Range of 1.71 to 3.63 V
- Temperature Range:
  - Industrial: -40° to 85° C Ext.
  - Commercial: -20° to 70° C

DSC6001/03/11/13/21/23/41/43/51/53/61/63




DSC6083 (kHz Output)




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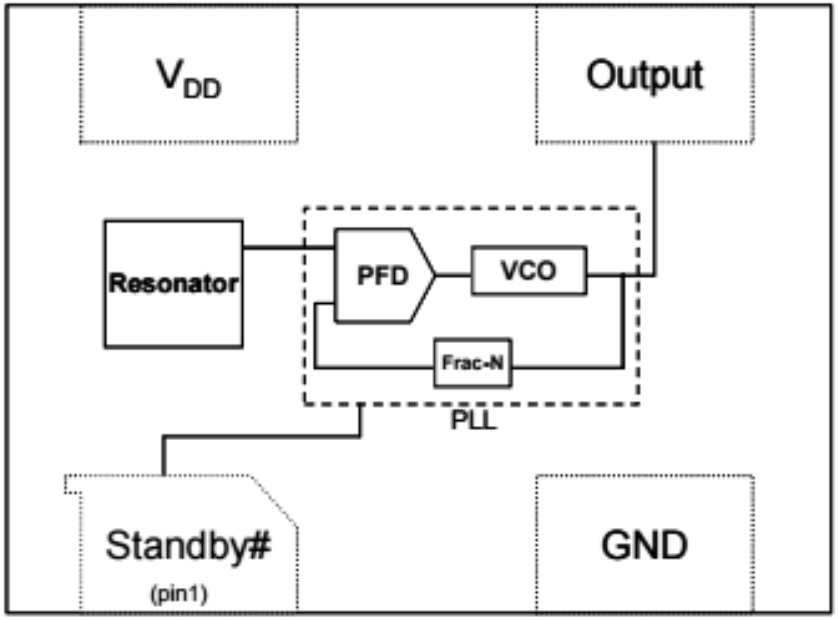
# DSC1001/3/4

High performance oscillators

Online Datasheet

## Features:

- Frequency Range: 1 to 150MHz
- Drive Strength: 15pF, 25pF, 40pF
- Exceptional Stability over Temperature:
  - ±10 PPM, ±25 PPM, ±50 PPM
- Operating voltage of 1.7V to 3.6V
- Operating Temperature Range:
  - Extended Industrial -40°C to 105°C
  - Industrial -40°C to 85°C
  - Extended Commercial -20°C to 70°C
  - Commercial 0°C to 70°C
- Low Operating and Standby Current:
  - 5mA Operating (40MHz)
  - 15µA Standby
- Ultra Miniature Footprint:
  - 2.5mm x 2.0mm x 0.85mm
  - 3.2mm x 2.5mm x 0.85mm
  - 5.0mm x 3.2mm x 0.85mm
  - 7.0mm x 5.0mm x 0.85mm
- MIL-STD 883 Shock and Vibration Resistant
- AEC-Q100 Qualified





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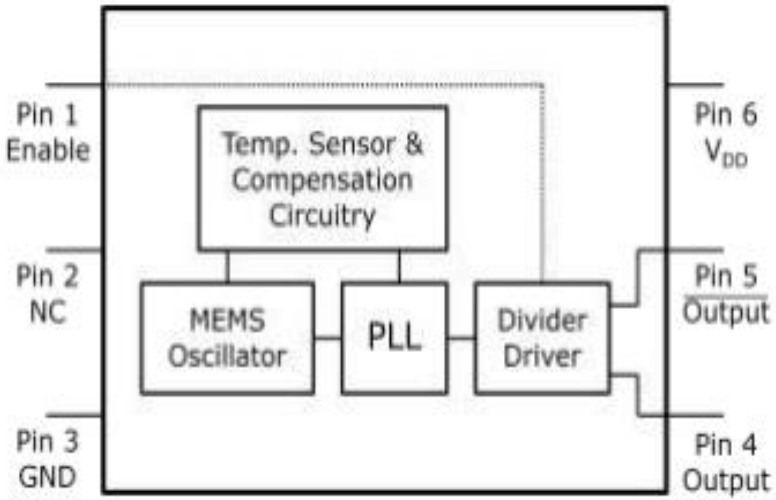
# DSC1101/1121

High performance oscillators

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 170MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function




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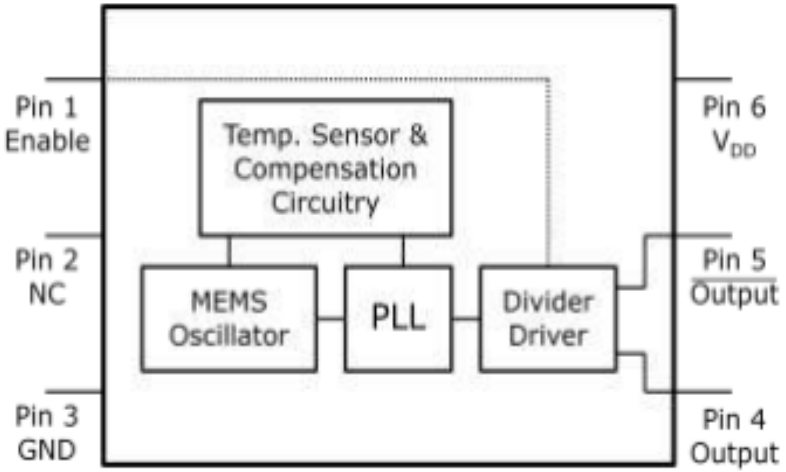
# DSC1102/1122

LVPECL

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVDS & HCSL Versions Available




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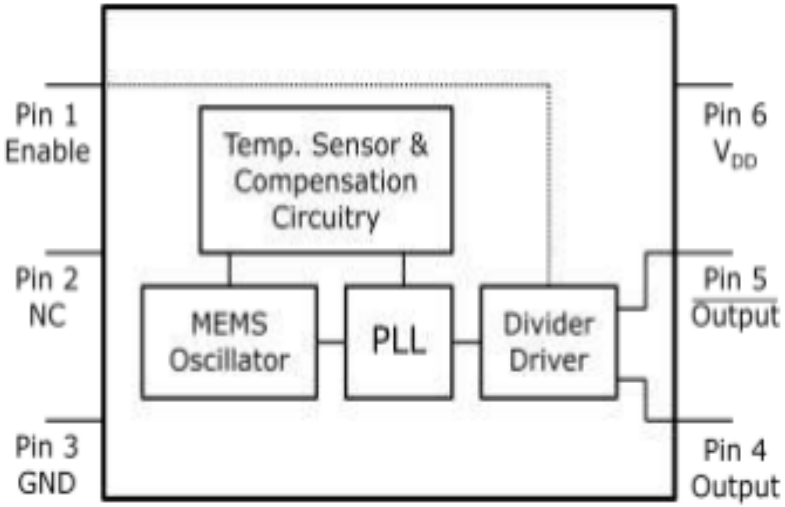
# DSC1103/1123

LVDS

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVPECL & HCSL Versions Available





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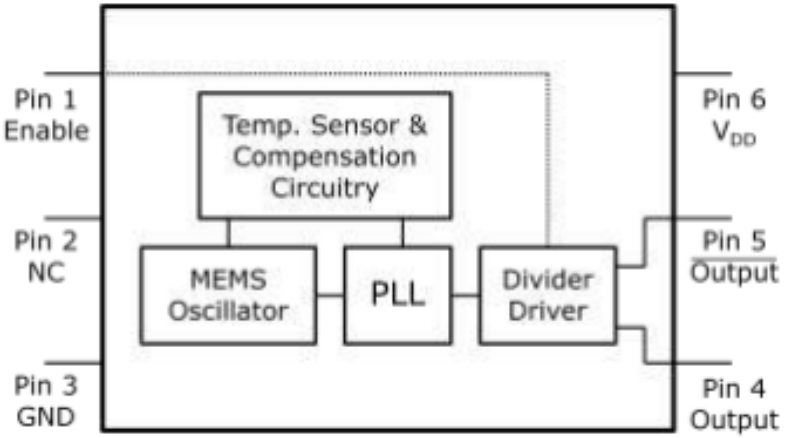
# DSC1104/1124

HSCL

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
  - Qualified to MIL-STD-883
- High Reliability
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVDS & LVPECL Versions Available




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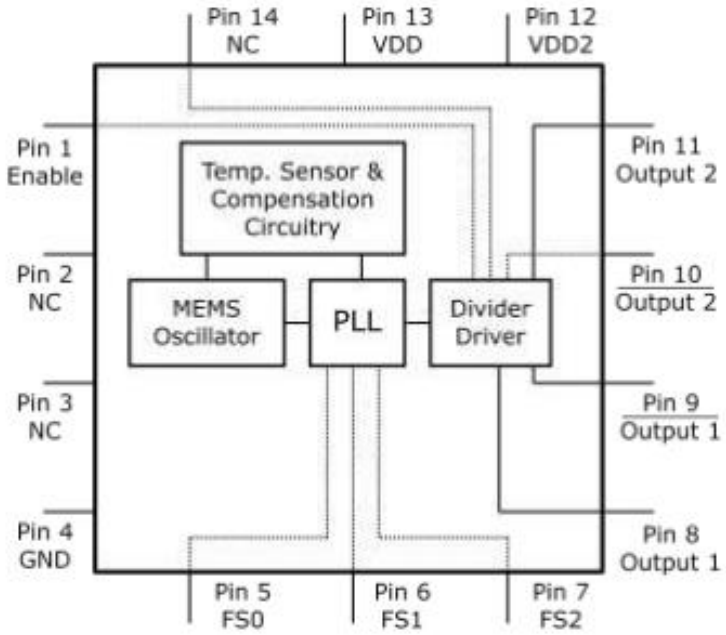
# DSC2XXX

Low-Jitter Configurable Dual LVDS Oscillator

Online Datasheet

## Features:

- Low RMS Phase Jitter: 1.5 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range: -20°C to 105°C
- High Supply Noise Rejection: -50dBc
- Two configurable independent outputs:
- LVCMOS, LVPECL, LVDS, HCSL
- Pin-Selectable Configurations:
- 3-bit Output Frequency Combinations
- Short Lead Times: 2 Weeks
- Wide Freq. Range: 2.3 to 460MHz
- Miniature Footprint of 3.2mm x 2.5mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
    - 20x better MTF than quartz oscillators
- Supply Range of 2.25V to 3.6V
- DSC20XX supports pin control
- DSC21xx supports I²C interface
- DSC22XX supports SPI interface





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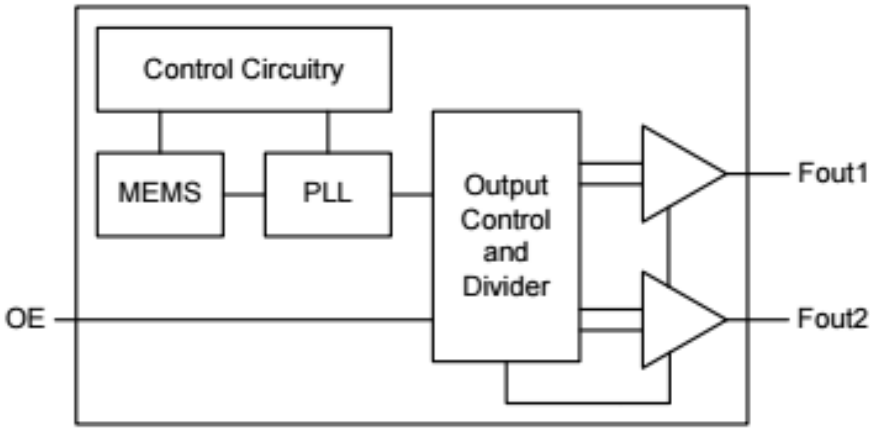
# DSC2311

Crystal-less™ Configurable Two-Output Clock Generator

Online Datasheet

## Features:

- Two Simultaneous CMOS Outputs:
  - Output 1 Range: 2.3 to 170MHz
  - Output 2 Range: 2.3 to 170MHz
- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±25 ppm; ±50 ppm
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- High Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than crystal-based clock - – generator designs
- Supply Range of 2.25V to 3.6V





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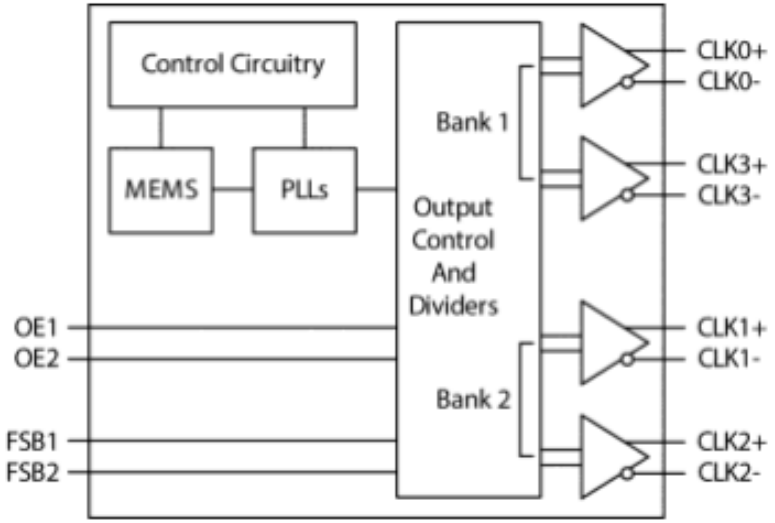
# DSC400

Configurable Four Output, Low Jitter Crystal-less™ Clock Generator

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1ps (typ.)
- High Stability: ±25ppm, ±50ppm
- Wide Temperature Range:
  - Ext. commercial: -20°C to +70°C
  - Industrial: -40°C to +85°C
- High Supply Noise Rejection: -50dBc
- Wide frequency range: 2.3MHz to 460MHz
- 20-pin QFN footprint (5.0mm x 3.2mm)
- Excellent shock and vibration immunity:
  - Qualified to MIL-STD-883
- Four format-configurable outputs:
  - LVPECL, LVDS, HCSL, LVCMOS
- Available pin-selectable frequency table:
  - 1 pin per bank for two frequency sets
- High Reliability: 20x better MTF than quartz -- based devices
- Wide supply range of 2.25V to 3.6V
- AEC-Q100 Automotive qualified





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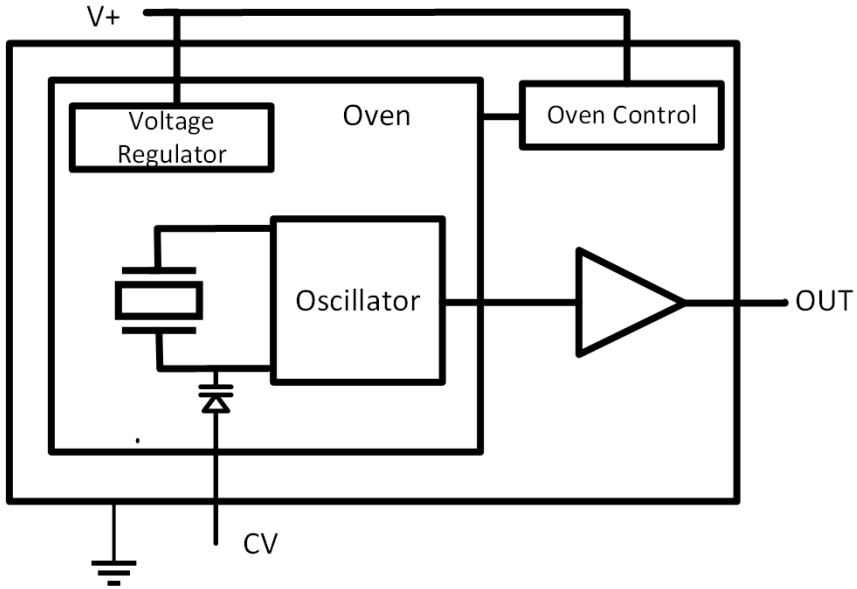
# EX-421

Low power OCXO

Online Datasheet

## Features:

- OCXO performance at ~ 1/5 the power
- Frequency Range: 10 to 100 MHz
- Output: CMOS, Sine
- Footprint: 13 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 12 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.03 ppm
- Aging per Year: 0.1 ppm
- Phase Noise 10 Hz offset: -125 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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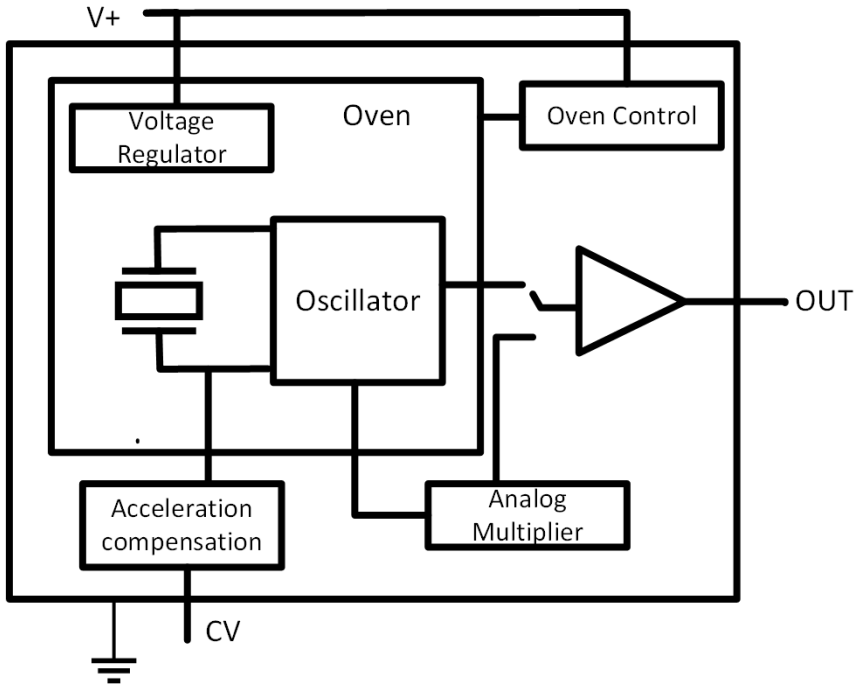
# OX-043

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -170 dBc/Hz @10 MHz carrier




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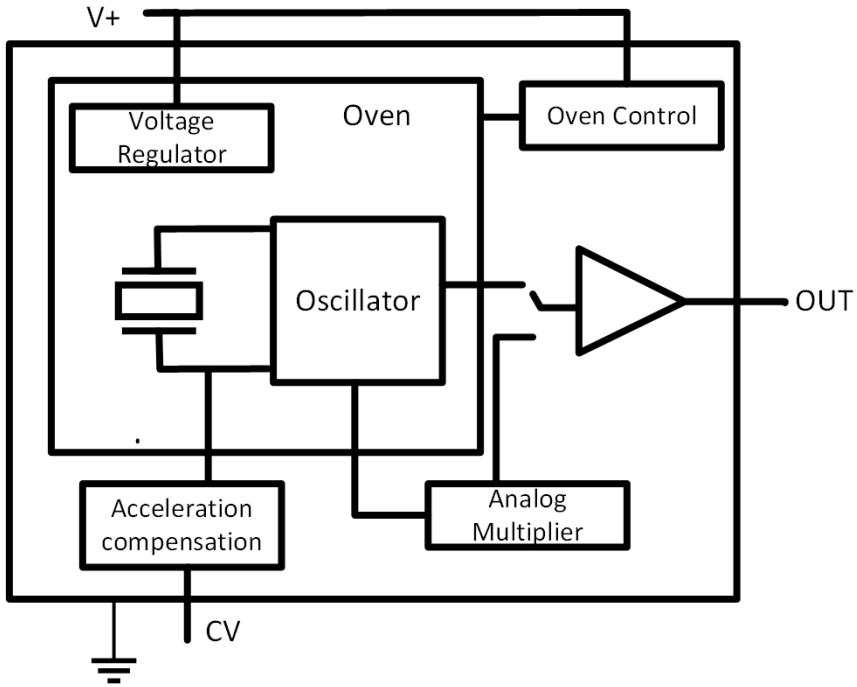
# OX-046

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 50 to 250 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.05 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @100 MHz carrier




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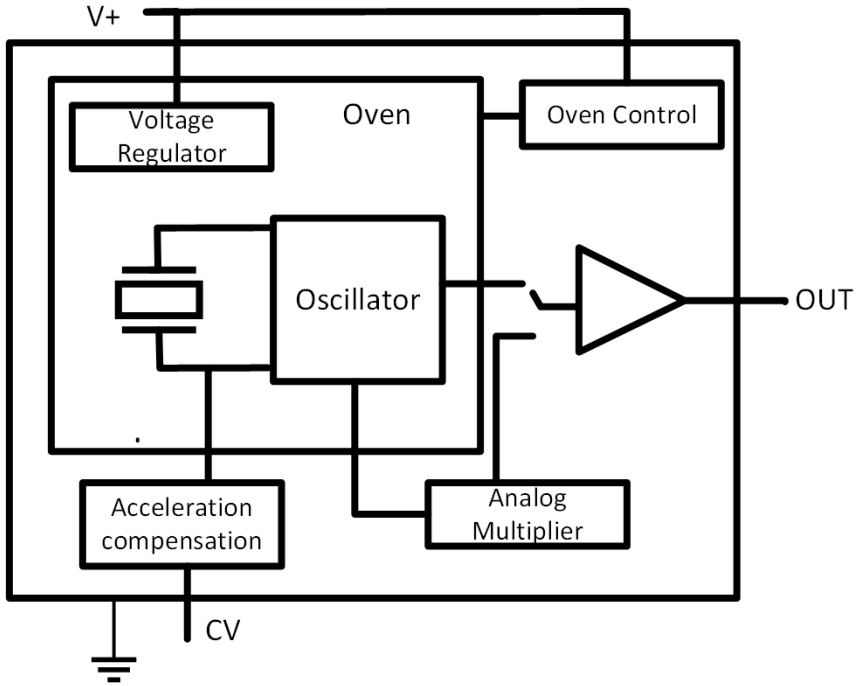
# OX-080

Low g OCXO

Online Datasheet

## Features:

- Smallest form factor Low g OCXO with active cancellation tehcnology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 38 x 38 mm, chassis
- Supply Voltage: 12 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -127 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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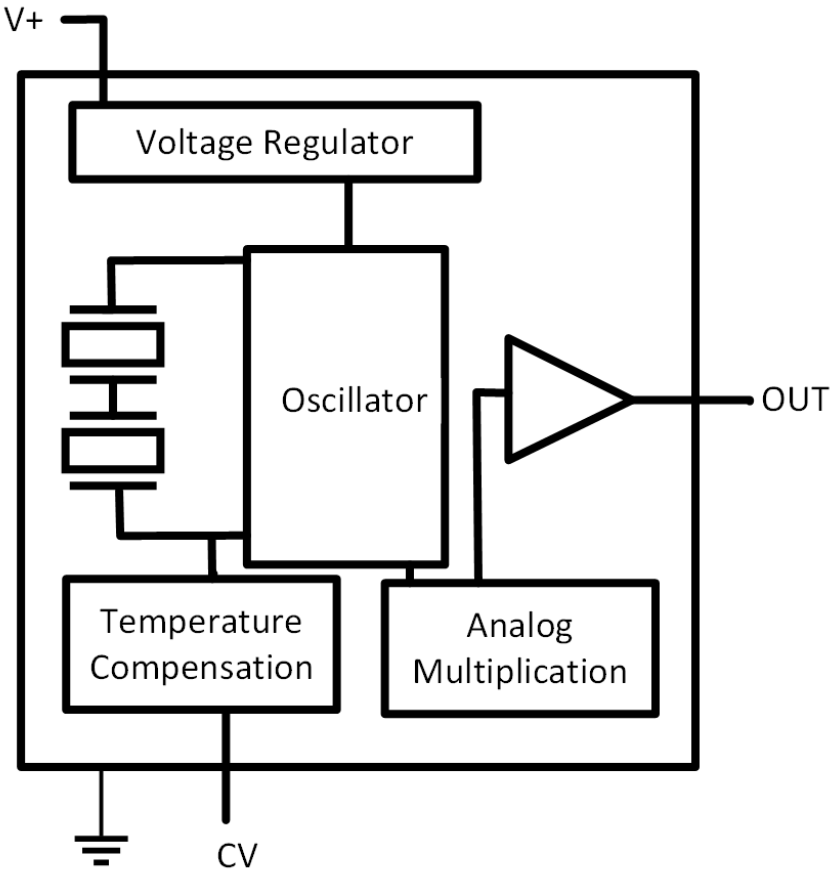
# TX-550

Low g TCXO

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Clipped Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 11 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 98 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.2 ppb/g
- Phase Noise 10 Hz offset: -110 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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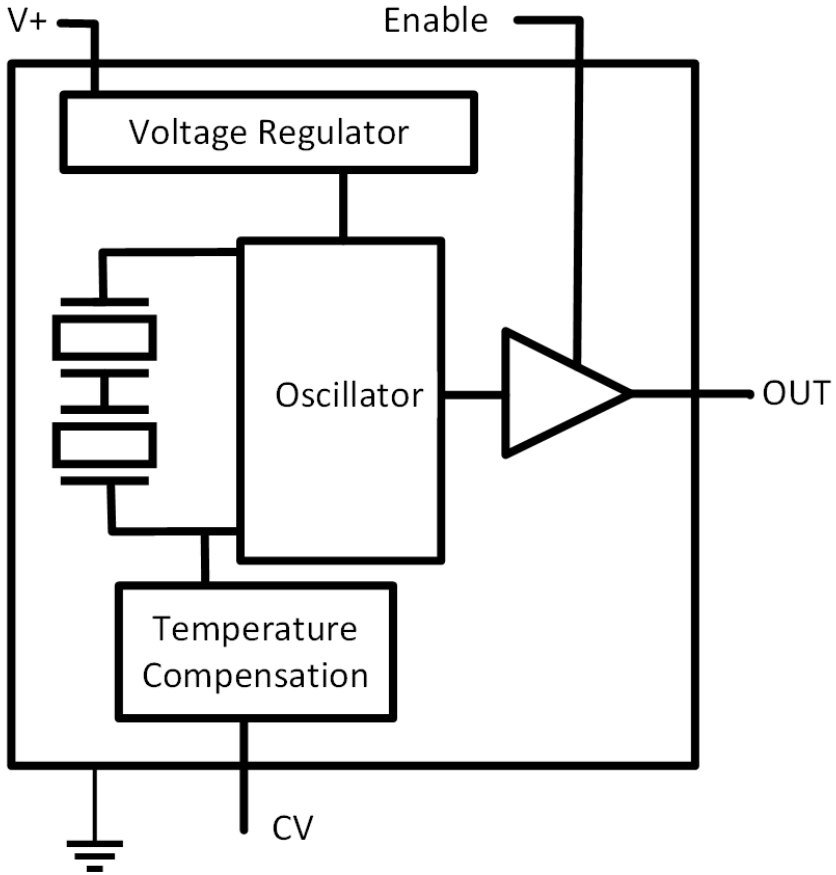
# TX-707

Low g TCXO

Online Datasheet

## Features:

- Dual crystal, hermetic, low g tcxo
- Target Market: Military
- Frequency Range: 8 to 52 MHz
- Standard Frequencies: 10, 16.368, 20, 25, 40, 50 MHz
- Output: CMOS, Clipped Sine
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




Vectron™ | a Microchip company

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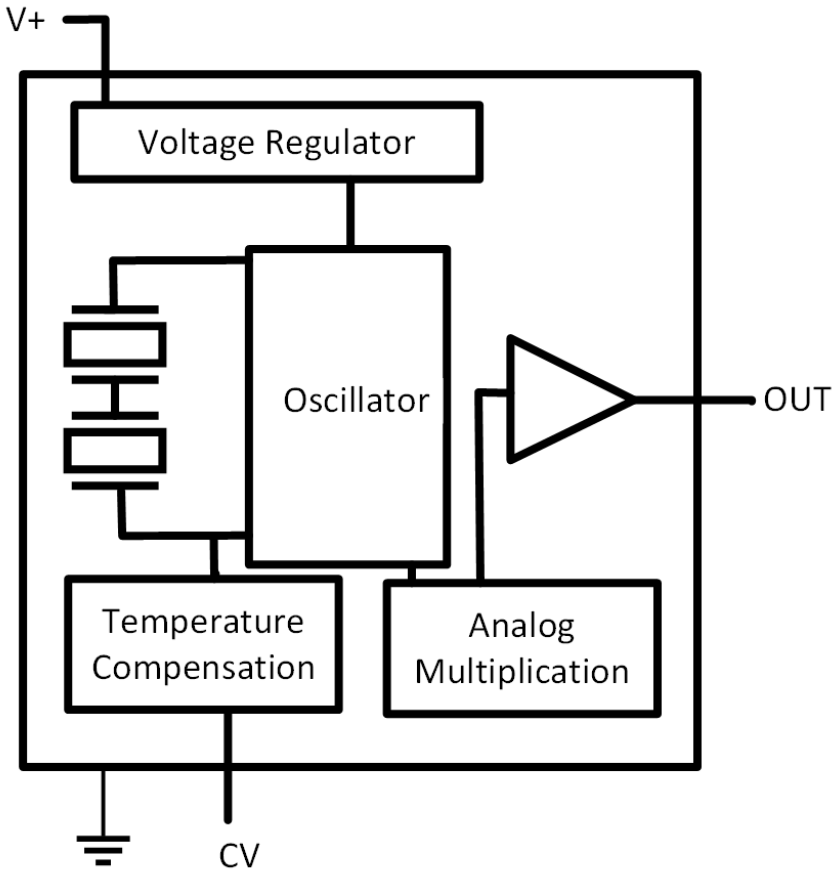
# TX-708

Low g TCXO

Coming Soon

## Features: COMING SOON

- High frequency, low g
- Target Market: Military
- Frequency Range: 96 to 160 MHz
- Standard Frequencies: 98.208, 100, 115.2, 120, 144, 150, 155.52, 160 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 121 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -75 dBc/Hz @150 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @150 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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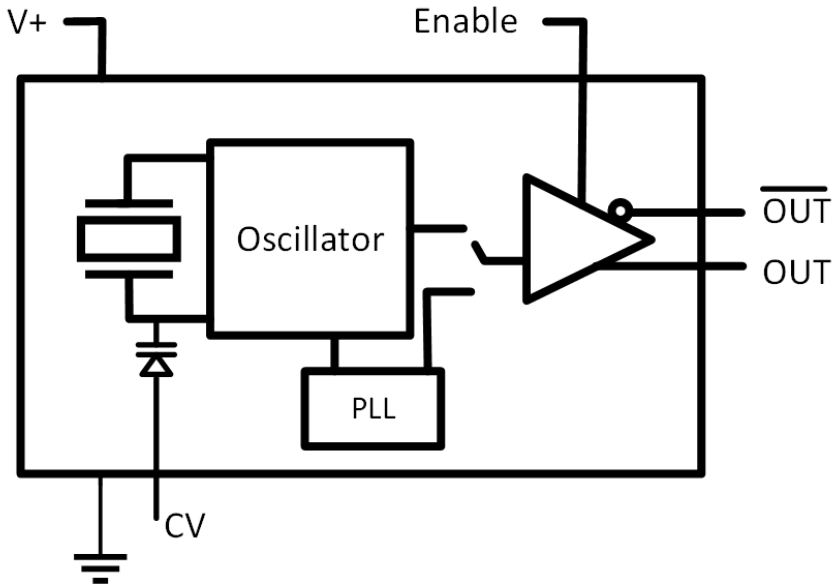
# VX-500

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 19.8 mW
- Temperature Range: -55 to 125 °C
- Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -60 dBc/Hz @52 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @52 MHz carrier




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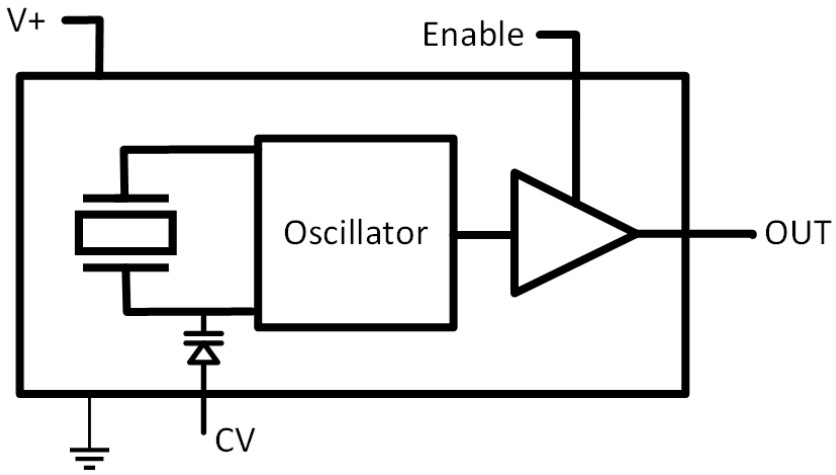
# VX-504

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 30 to 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Pull Range: 65 ppm
- Phase Noise 10 Hz offset: -72 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -161 dBc/Hz @122.88 MHz carrier




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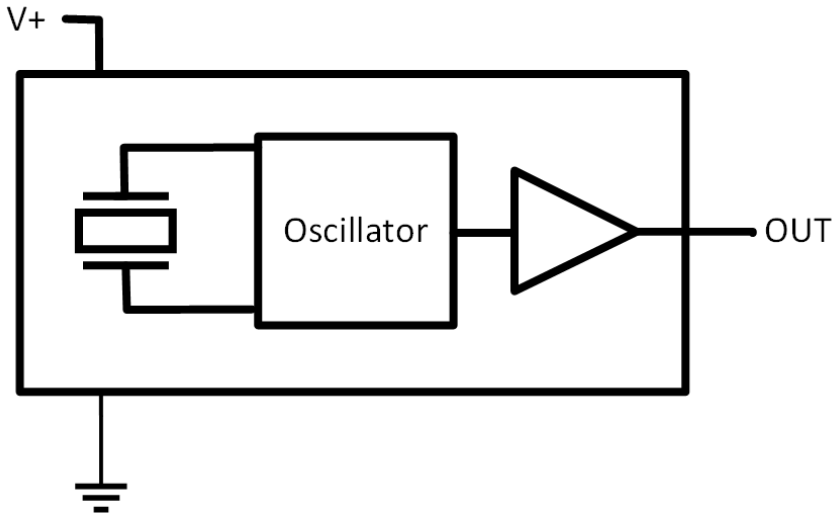
# PS-508

Low g SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




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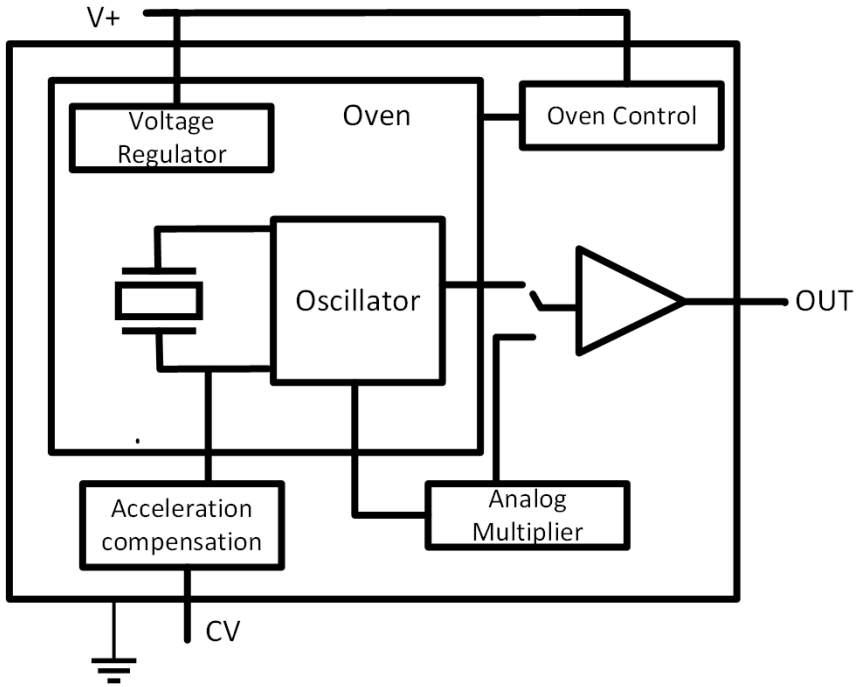
# OX-043

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -170 dBc/Hz @10 MHz carrier




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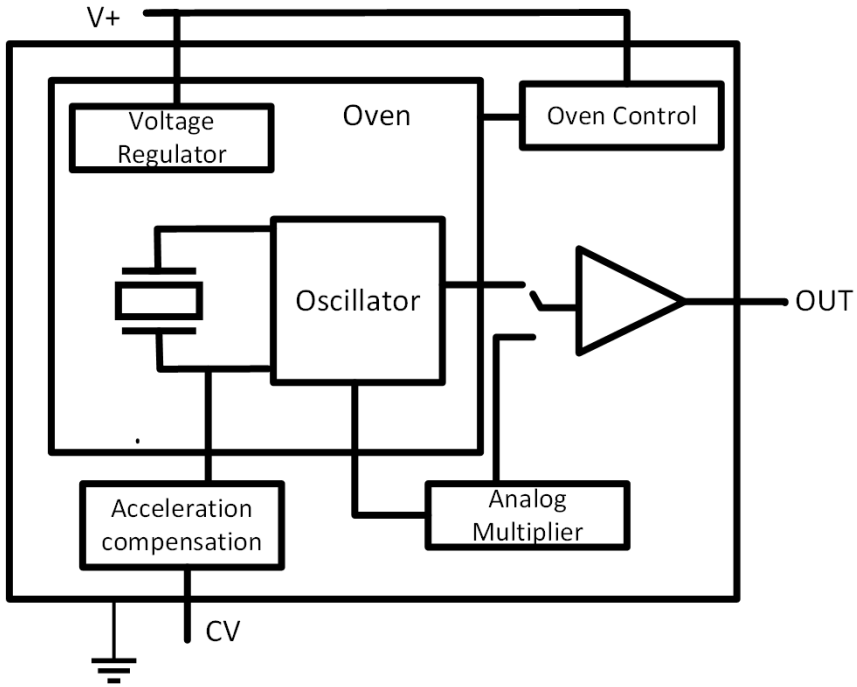
# OX-046

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 50 to 250 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.05 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @100 MHz carrier




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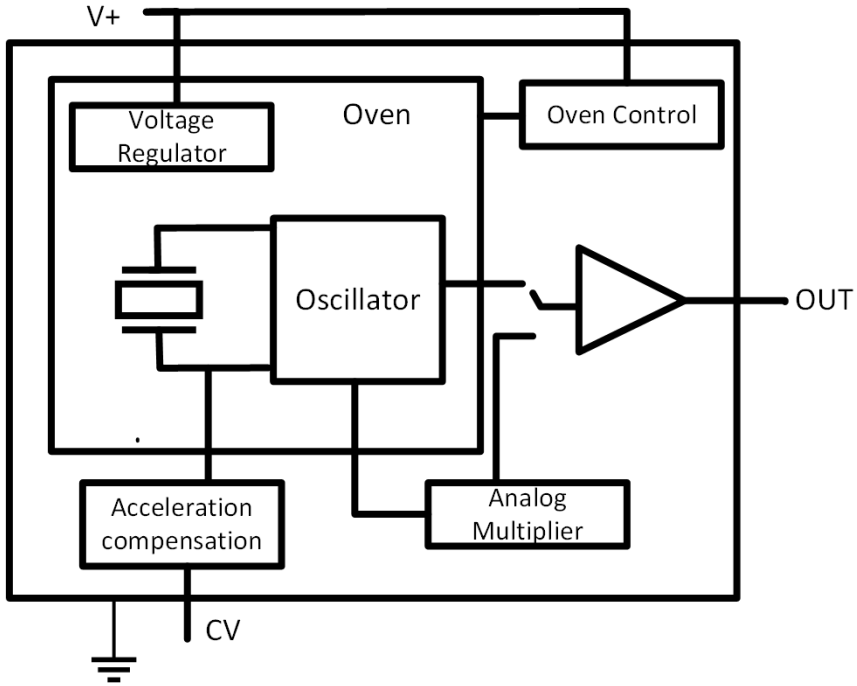
# OX-080

Low g OCXO

Online Datasheet

## Features:

- Smallest form factor Low g OCXO with active cancellation tehcnology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 38 x 38 mm, chassis
- Supply Voltage: 12 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -127 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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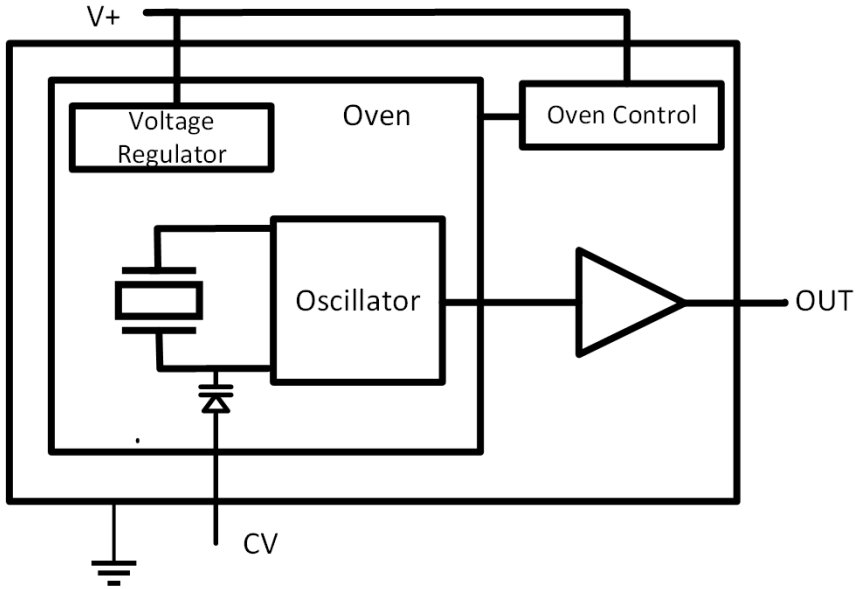
# OX-405

Low noise OCXO

Online Datasheet

## Features:

- low noise, small factor OCXO
- Frequency Range: 80 to 120 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -95 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 50 ppb
- Aging per Year: 300 ppb




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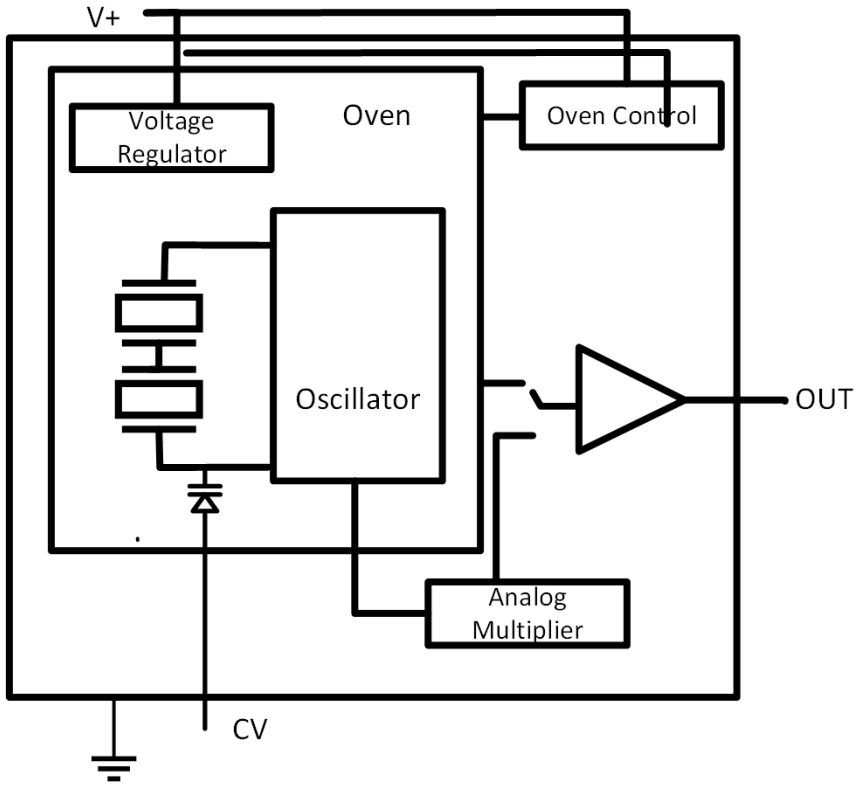
# OX-407

Low g OCXO

Online Datasheet

## Features:

- dual crystal, small form factor, low g OCXO
- Target Market: Military
- Frequency Range: 10 to 50 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.07 ppb/g
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Phase Noise 10 Hz offset: -84 dBc/Hz @40 MHz carrier
- Phase Noise 100 kHz offset: -150 dBc/Hz @40 MHz carrier




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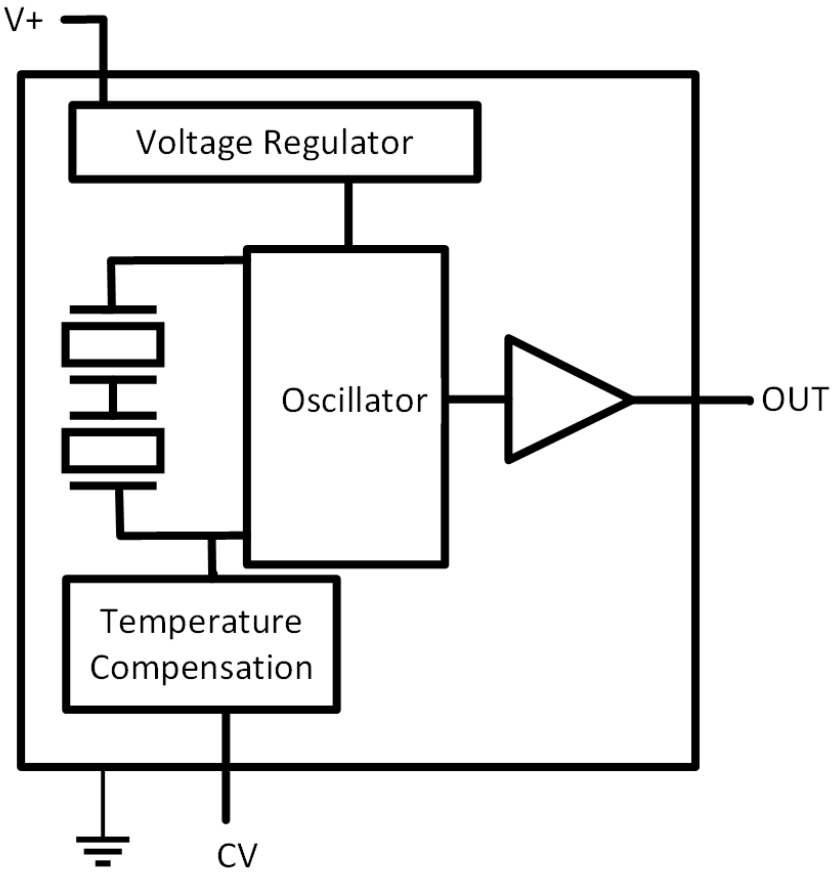
# TX-321

Low noise TCXO

Online Datasheet

## Features:

- Lowest Noise TCXO in market
- Target Market: Test and Measurement
- Frequency Range: 5 to 50 MHz
- Output: CMOS
- Footprint: 23 x 18 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -116 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -168 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm
- g-Sensitivity: 0.2 ppb/g




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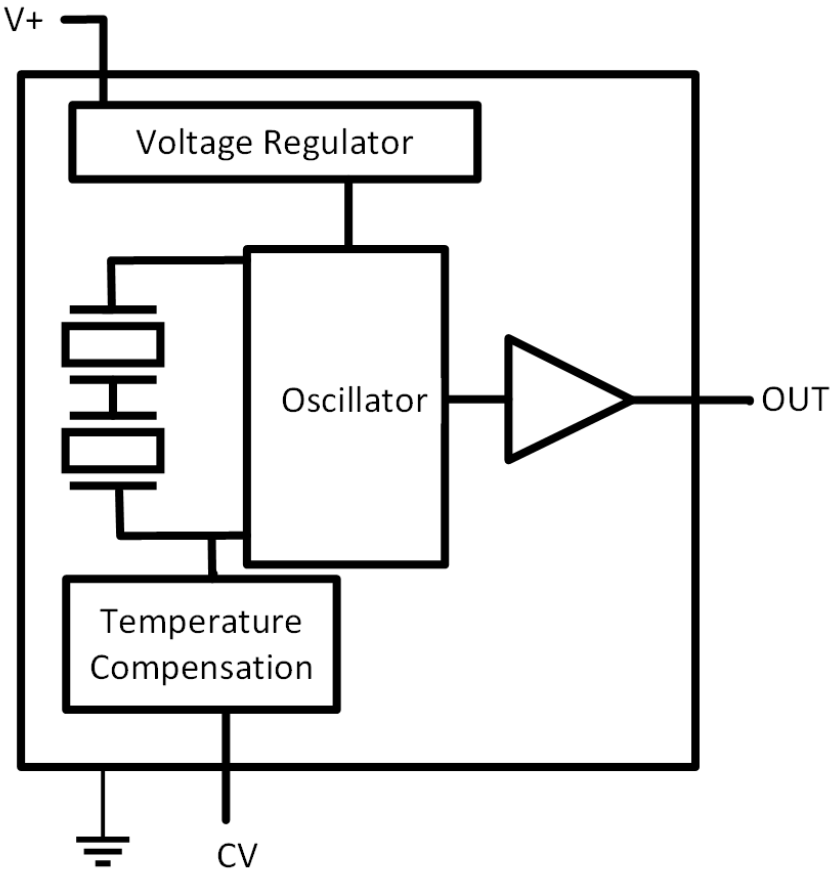
# TX-321

Low noise TCXO

Online Datasheet

## Features:

- Lowest Noise TCXO in market
- Target Market: Test and Measurement
- Frequency Range: 5 to 50 MHz
- Output: CMOS
- Footprint: 23 x 18 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -116 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -168 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm
- g-Sensitivity: 0.2 ppb/g




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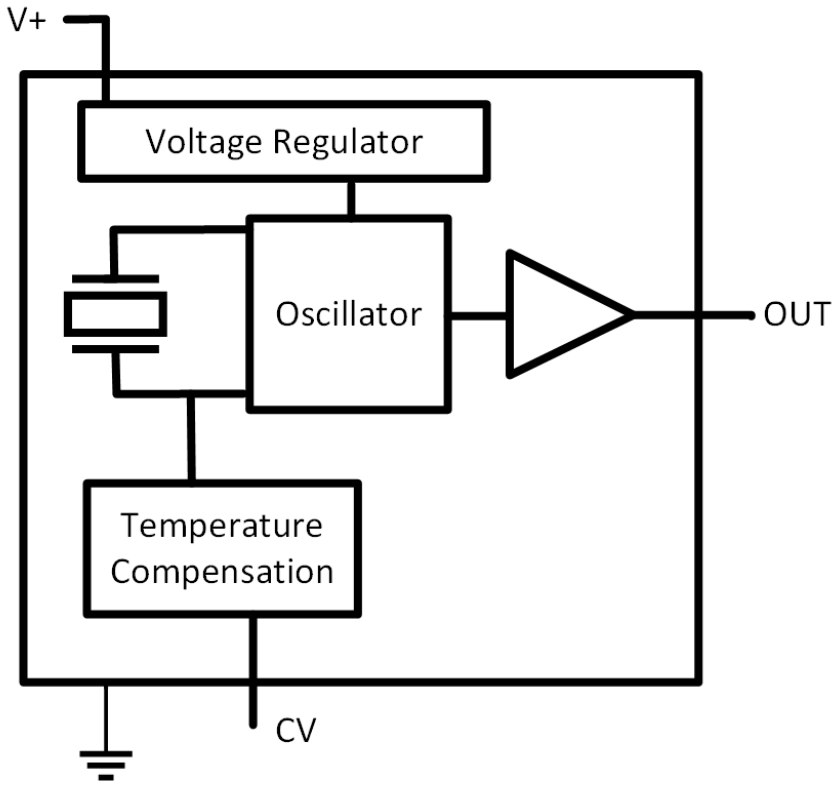
# VT-501

low noise tcxo

Online Datasheet

## Features:

- Low cost low noise TCXO
- Frequency Range: 8 to 61.44 MHz
- Output: CMOS
- Footprint: 12 x 10 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 49.5 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -107 dBc/Hz @ MHz carrier
- Temperature Stabilty 0 to 70°C: 1 ppm
- Temperature Stabilty -20 to 70°C: 1ppm
- Temperature Stabilty -40 to 85°C: 1 ppm





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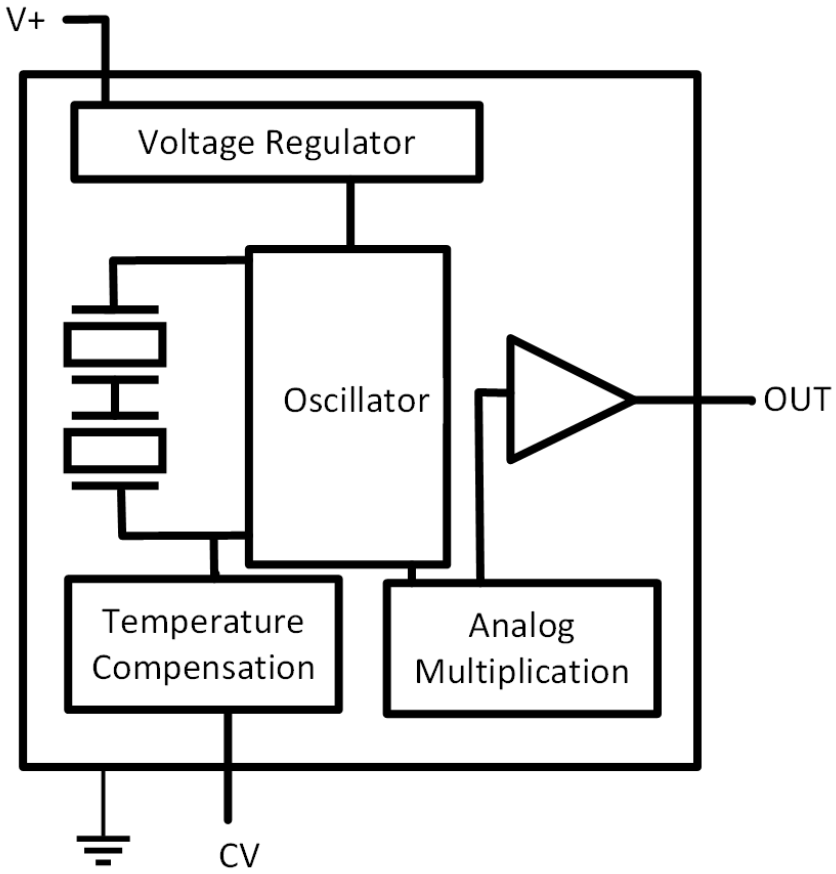
# TX-550

Low g TCXO

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Clipped Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 11 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 98 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.2 ppb/g
- Phase Noise 10 Hz offset: -110 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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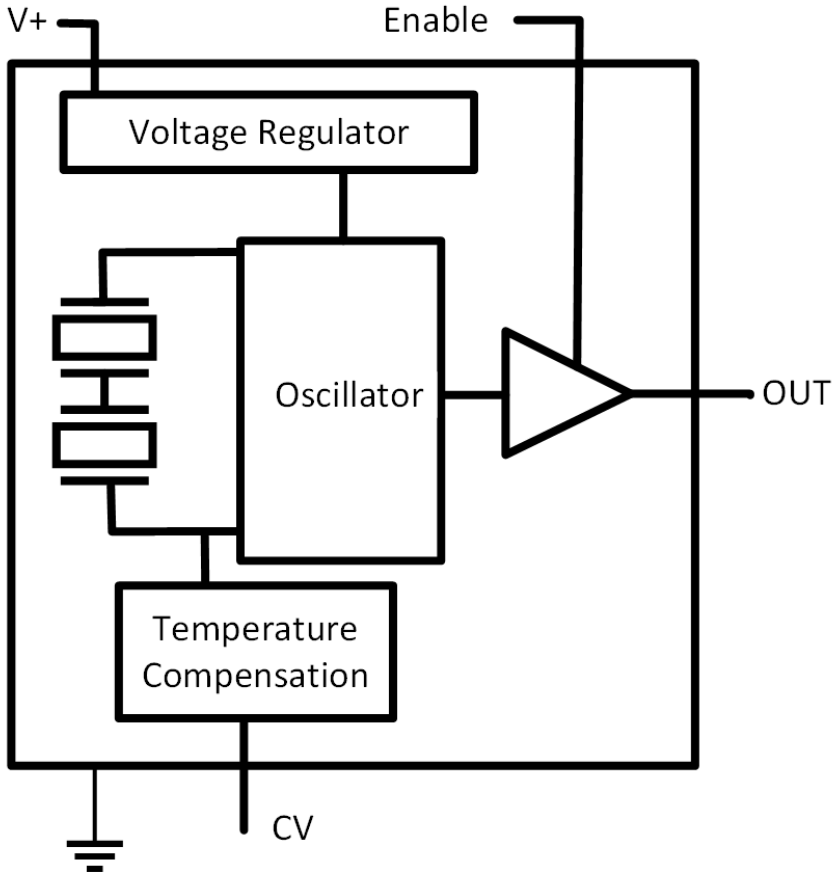
# TX-705

Standard TCXO

Online Datasheet

## Features:

- Frequency Range: 16 to 50 MHz
- Output: CMOS, Clipped Sine
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 13.2 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.2 ppb/g
- Phase Noise 10 Hz offset: -90 dBc/Hz @20 MHz carrier
- Phase Noise 100 kHz offset: -155 dBc/Hz @20 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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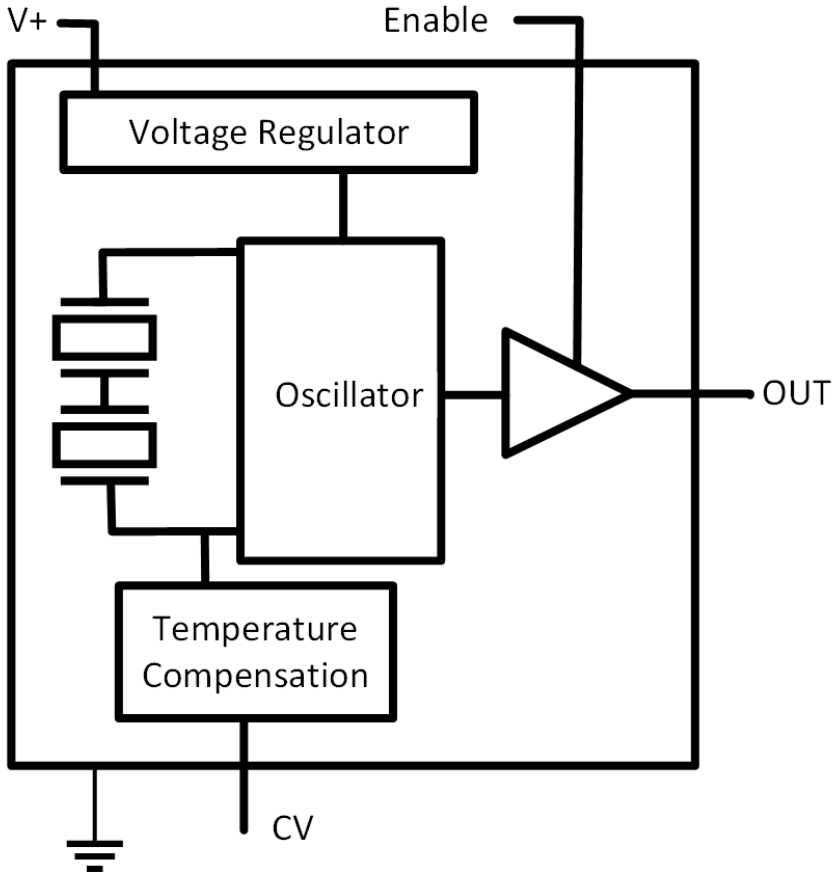
# TX-707

Low g TCXO

Online Datasheet

## Features:

- Dual crystal, hermetic, low g tcxo
- Target Market: Military
- Frequency Range: 8 to 52 MHz
- Standard Frequencies: 10, 16.368, 20, 25, 40, 50 MHz
- Output: CMOS, Clipped Sine
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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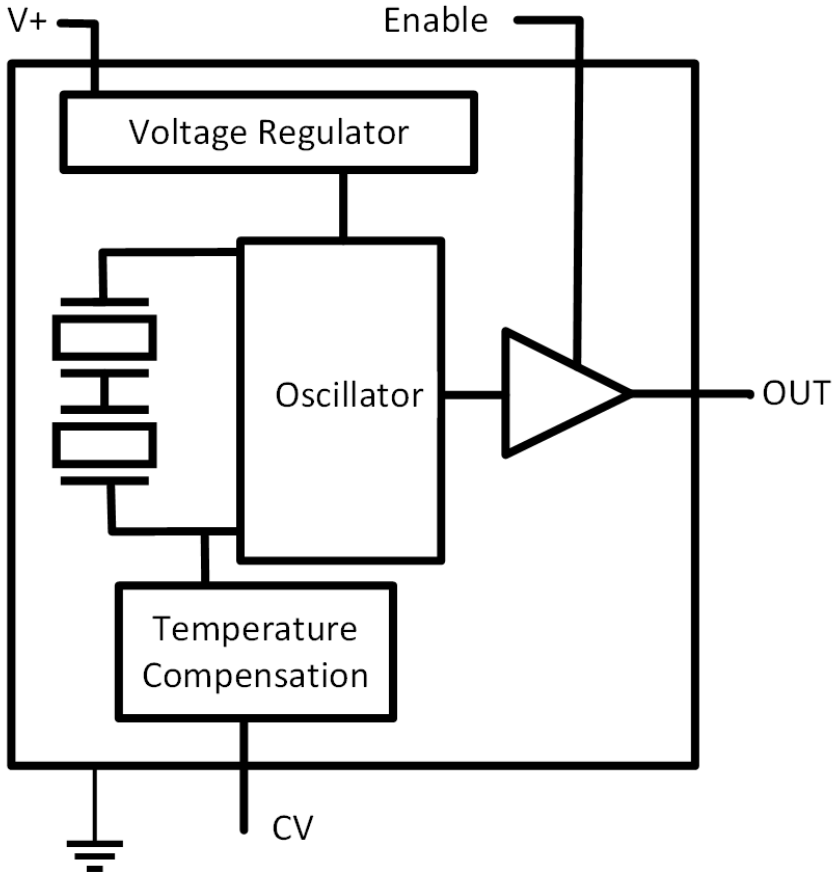
# TX-707

Low g TCXO

Online Datasheet

## Features:

- Dual crystal, hermetic, low g tcxo
- Target Market: Military
- Frequency Range: 8 to 52 MHz
- Standard Frequencies: 10, 16.368, 20, 25, 40, 50 MHz
- Output: CMOS, Clipped Sine
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 16.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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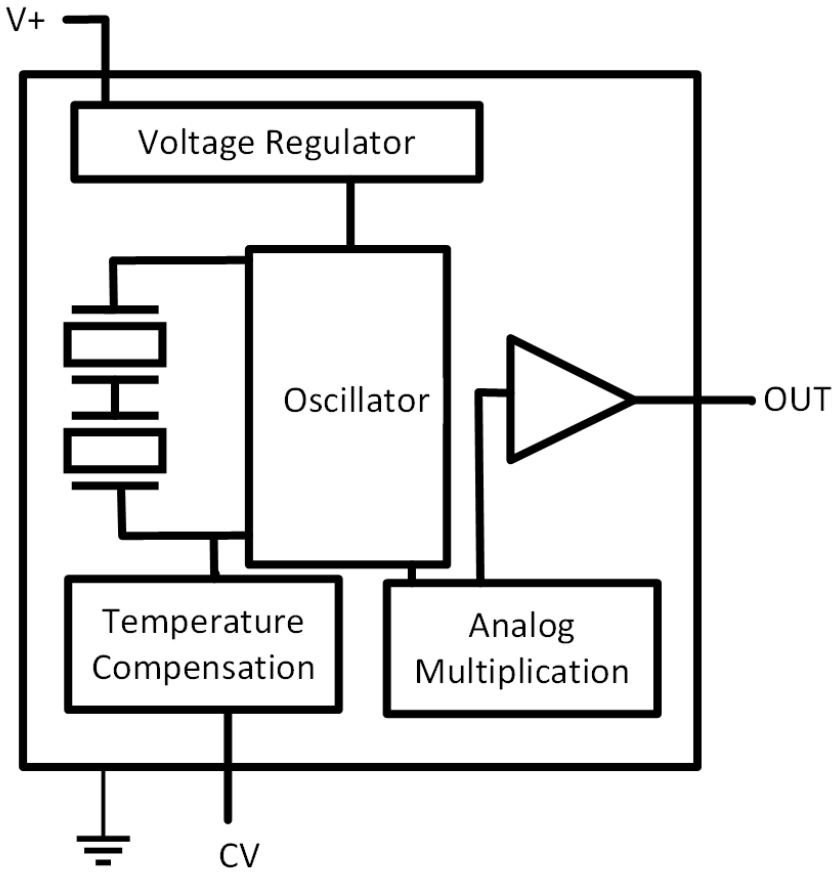
# TX-708

Low g TCXO

Coming Soon

## Features: COMING SOON

- High frequency, low g
- Target Market: Military
- Frequency Range: 96 to 160 MHz
- Standard Frequencies: 98.208, 100, 115.2, 120, 144, 150, 155.52, 160 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 121 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -75 dBc/Hz @150 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @150 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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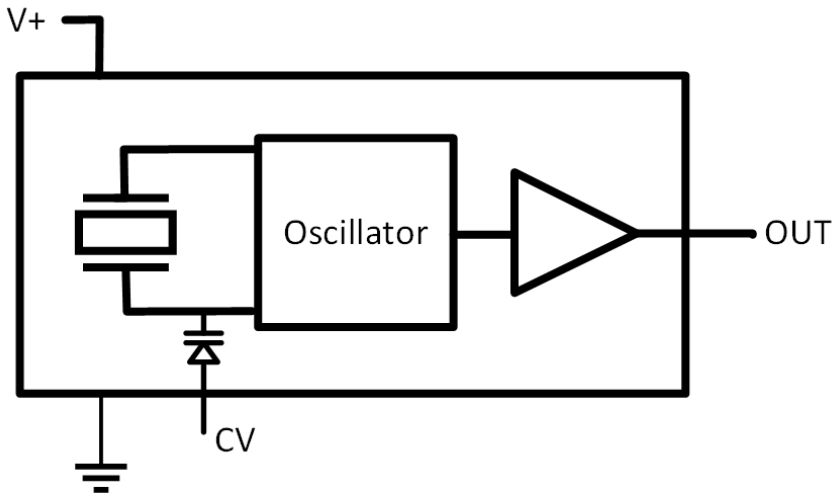
# VS-506

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 3 GHz
- Output: Sine
- Footprint: 14 x 9 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- 1.2ppb/g
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 20 ppm




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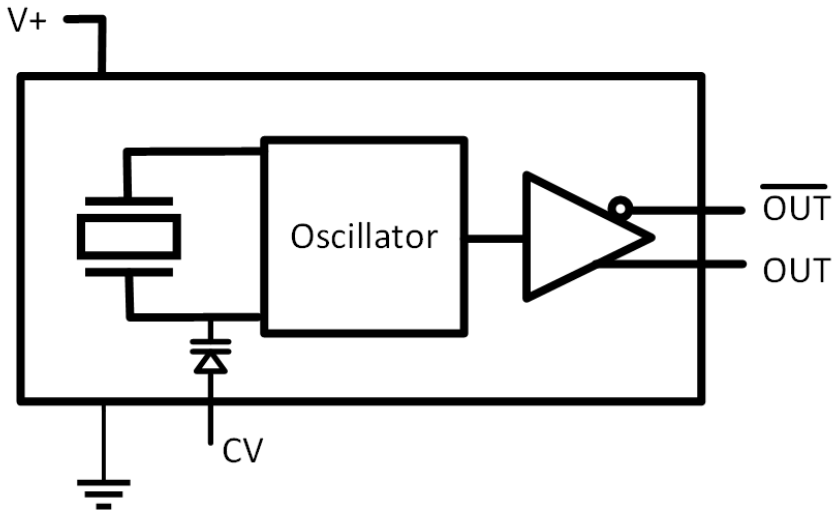
# VS-508

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 2.9 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 325 mW
- Temperature Range: 10 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -102 dBc/Hz @2000 MHz carrier
- Phase Noise 1 MHz offset: -150 dBc/Hz @2000MHz carrier




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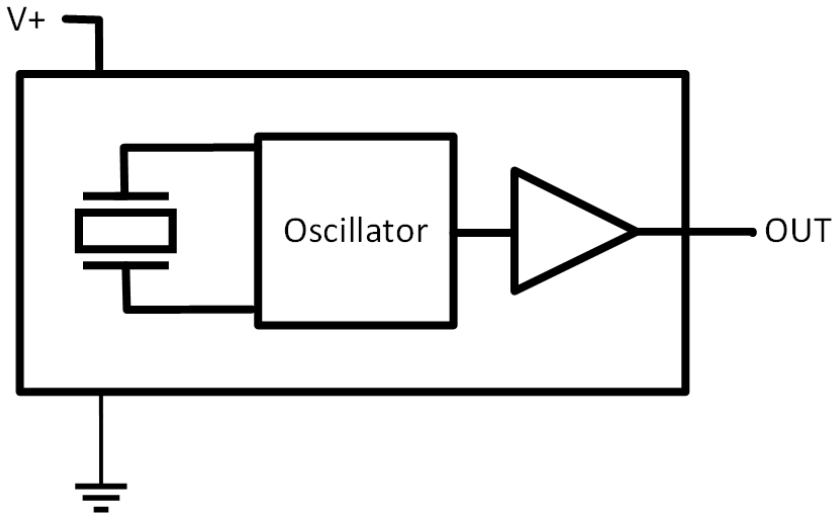
# PS-508

Low g SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




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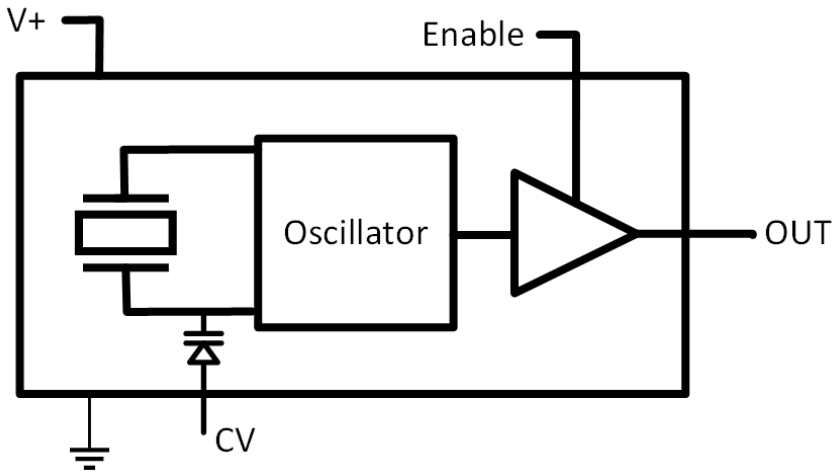
# VX-504

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 30 to 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Pull Range: 65 ppm
- Phase Noise 10 Hz offset: -72 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -161 dBc/Hz @122.88 MHz carrier




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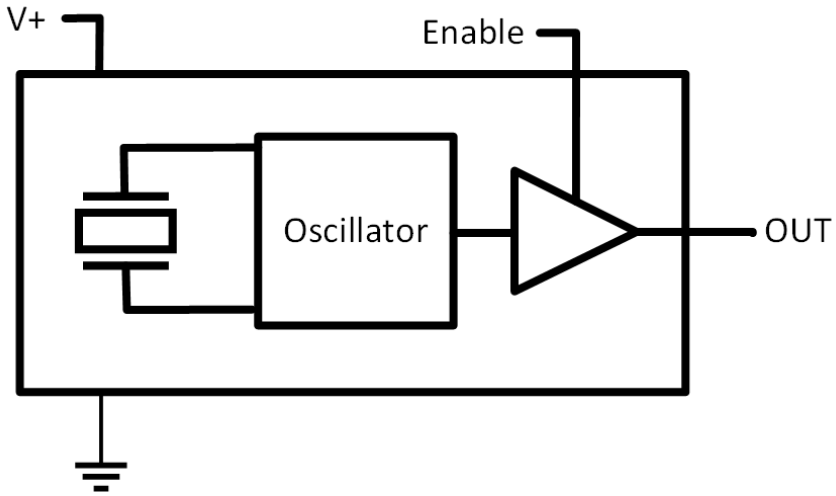
# PX-504

Low g XO

Online Datasheet

## Features:

- Frequency Range: 30 to 180 MHz
- Standard Frequencies: 50, 80, 100, 120, 122.88, 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- Aging per Year: 0 ppm




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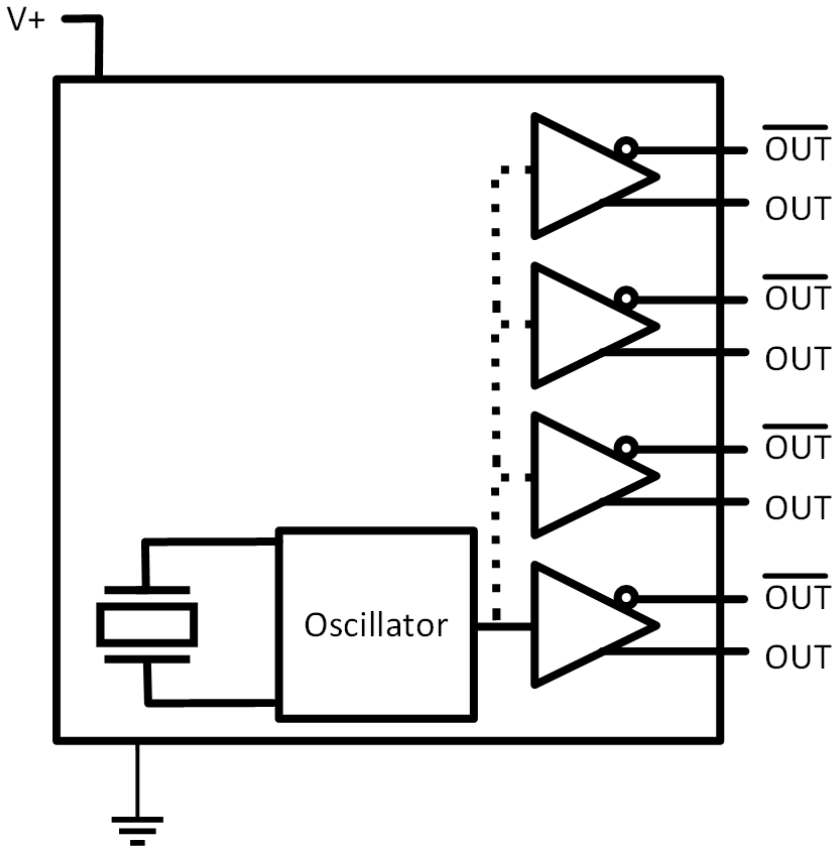
# DOC203679

Space XO

Online Datasheet

## Features:

- Ideal for driving RTG4 FPGA
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2,4 pairs
- Output: LVDS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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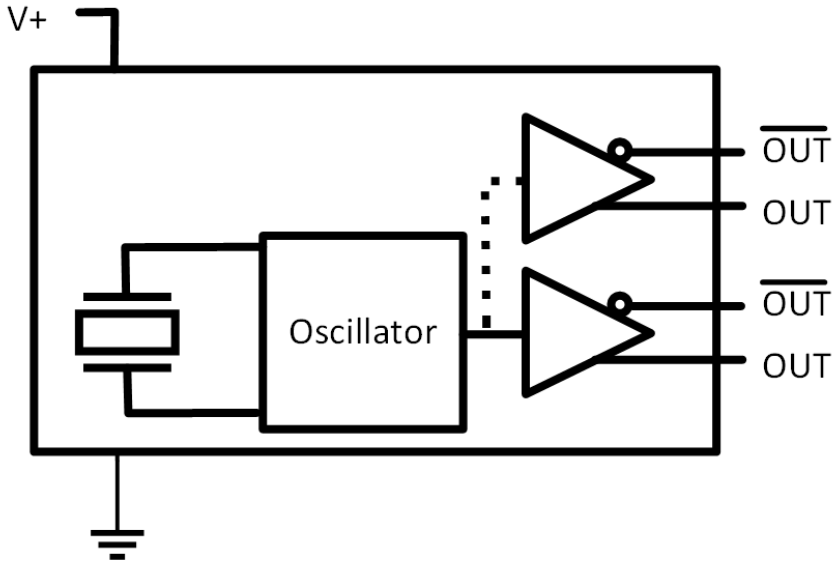
# DOC203810

Space XO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVPECL
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 50 krad ELDRS
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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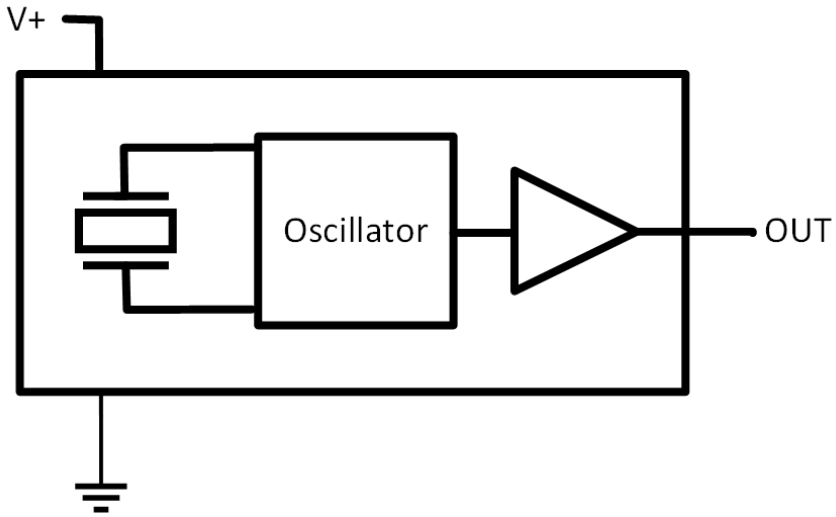
# OS-68338

Space XO

Online Datasheet

## Features:

- Ruggedized CMOS output Space XO with 100 krad tolerance
- Target Market: Space
- Frequency Range: 0.35 to 100 MHz
- Output: CMOS, TTL
- Footprint: multiple options, see specification mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 19.8 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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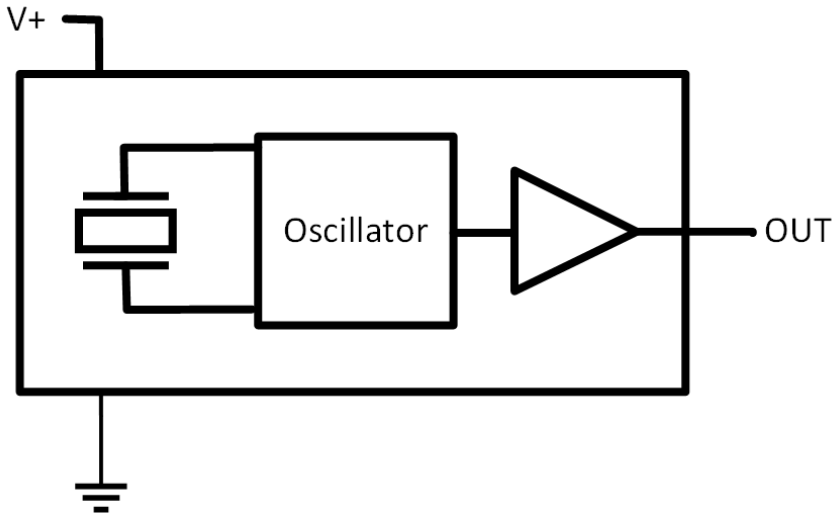
# M55310/16

Mil temp range and space XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.1 to 60 MHz
- Output: TTL
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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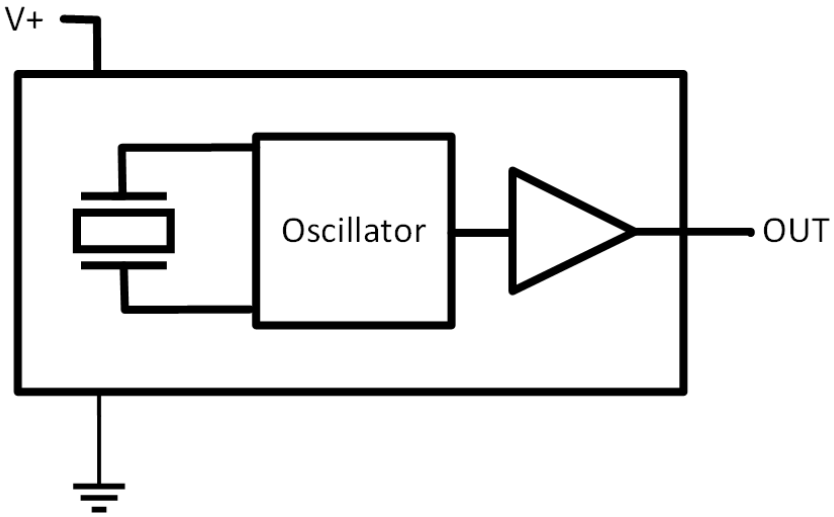
# DOC204900

Space XO

Online Datasheet

## Features:

- SET/SEU free to >90 MeV-cm2/mg
- Target Market: Space
- Frequency Range: 12 to 160 MHz
- Output: CMOS
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 250 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company


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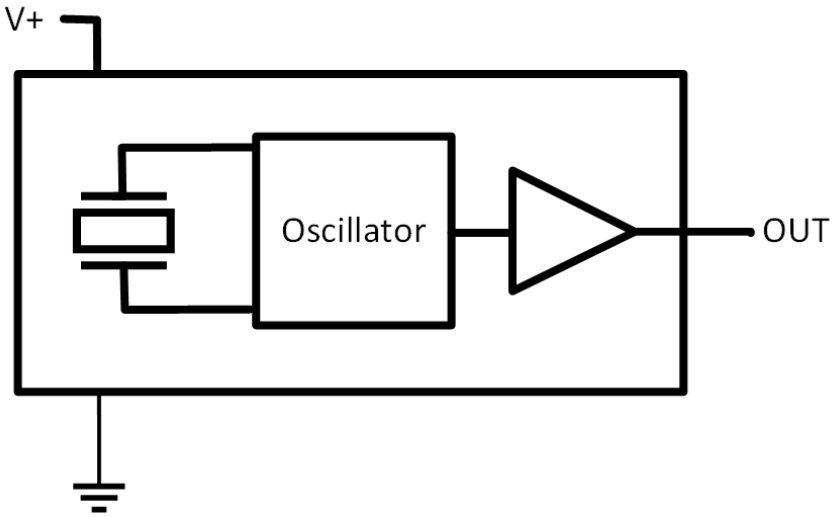
# DOC206379

Space XO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 12 to 100 MHz
- Output: CMOS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 241 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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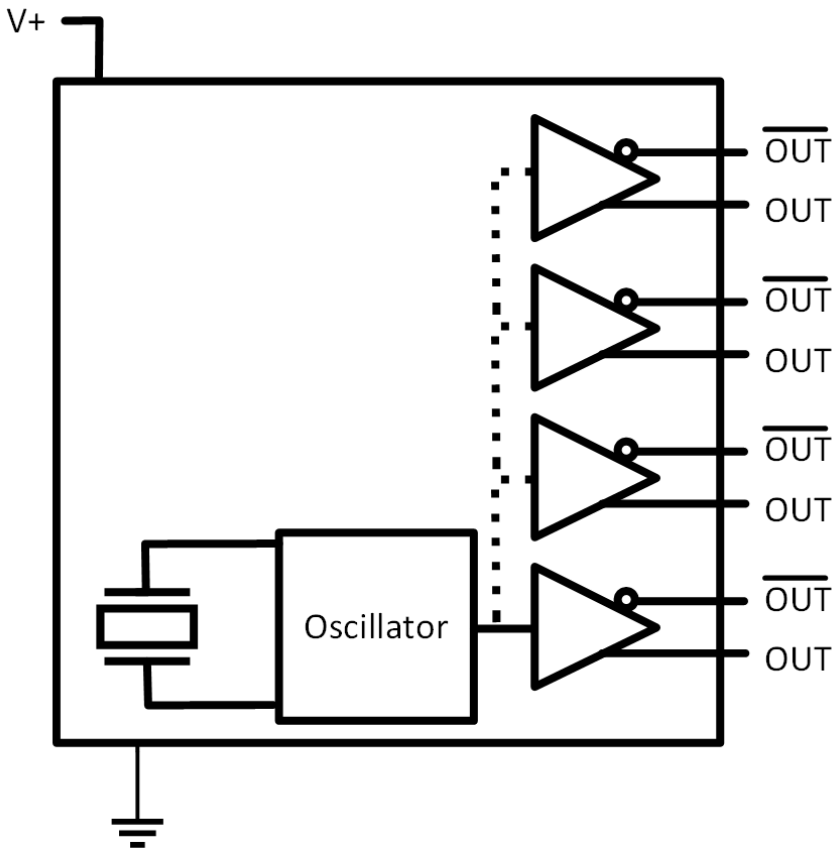
# DOC206903

Space XO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2,4 pairs
- Output: LVDS
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 250 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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<< BACK

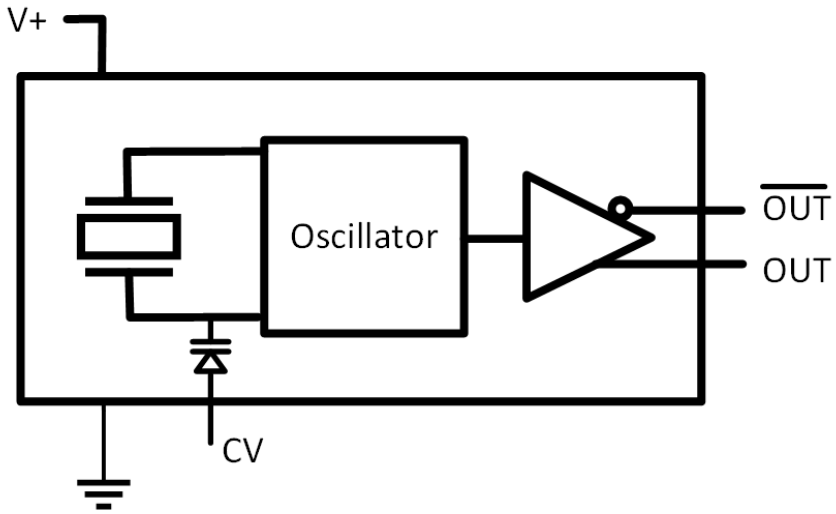
# DOC204898

Space VCXO

Online Datasheet

## Features:

- Popular for driving rad tolerant clock synchronizers and jitter cleaners
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Output: LVPECL
- Footprint: 25 x 25 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 281 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 50 krad ELDRS
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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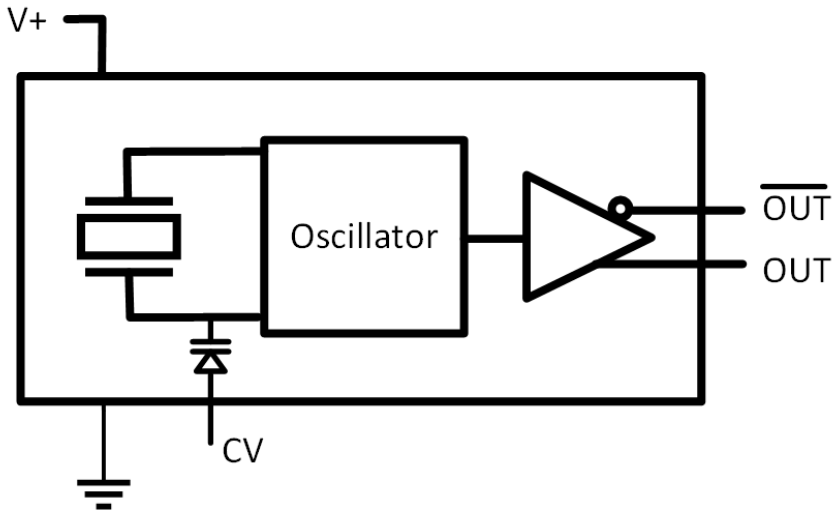
# DOC204899

Space VCXO

Online Datasheet

## Features:

- Target Market: Space
- Frequency Range: 80 to 200 MHz
- Output: LVDS
- Footprint: 25 x 25  mm, surface mount
- Supply Voltage: 3.3 V
- Power: 325 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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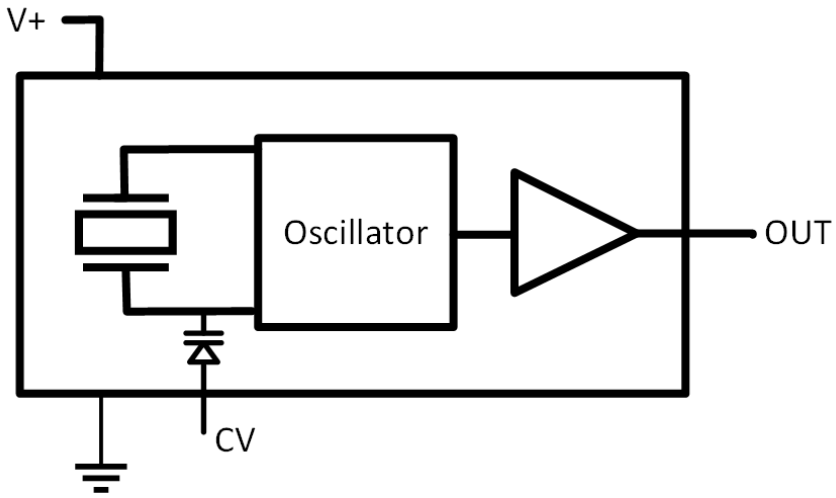
# DOC206218

Space VCXO

Online Datasheet

## Features:

- Target Market: Space
- Frequency Range: 1 to 100 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Absolute Pull Range: 50 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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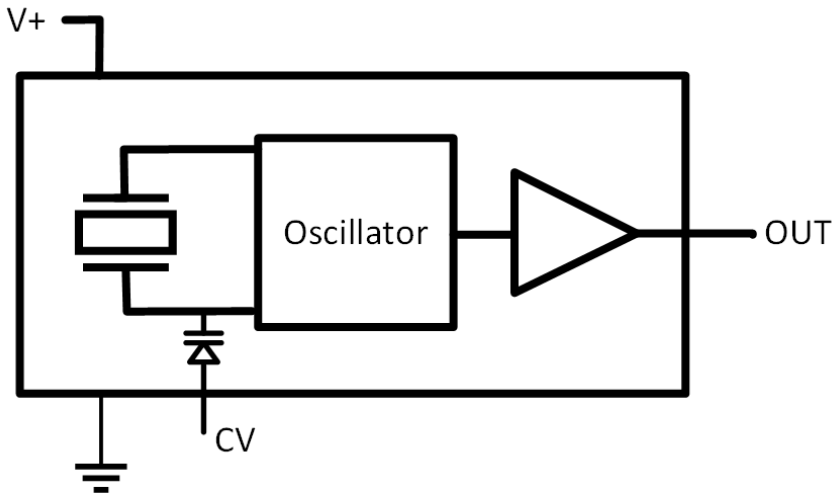
# DOC206559

Space VCSO

Online Datasheet

## Features:

- 300 krad for deep space missions
- Target Market: Space
- Frequency Range: 0.3 to 1.5 GHz
- Output: Sine
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3, 5, 12 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 300 krad TID
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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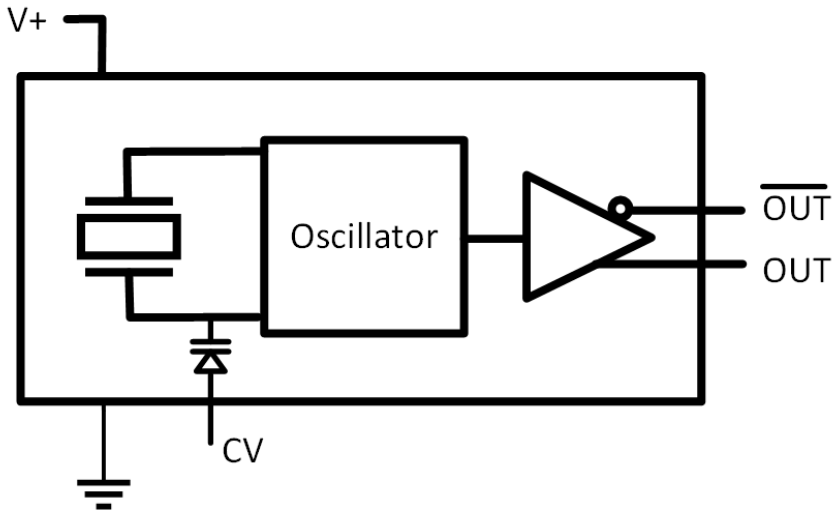
# DOC206906

Space VCSO

Online Datasheet

## Features:

- Internal Microchip SAW resonator
- Target Market: Space
- Frequency Range: 0.3 to 1 GHz
- Output: LVPECL
- Footprint: 16 x 16 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 33 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 50 krad ELDRS
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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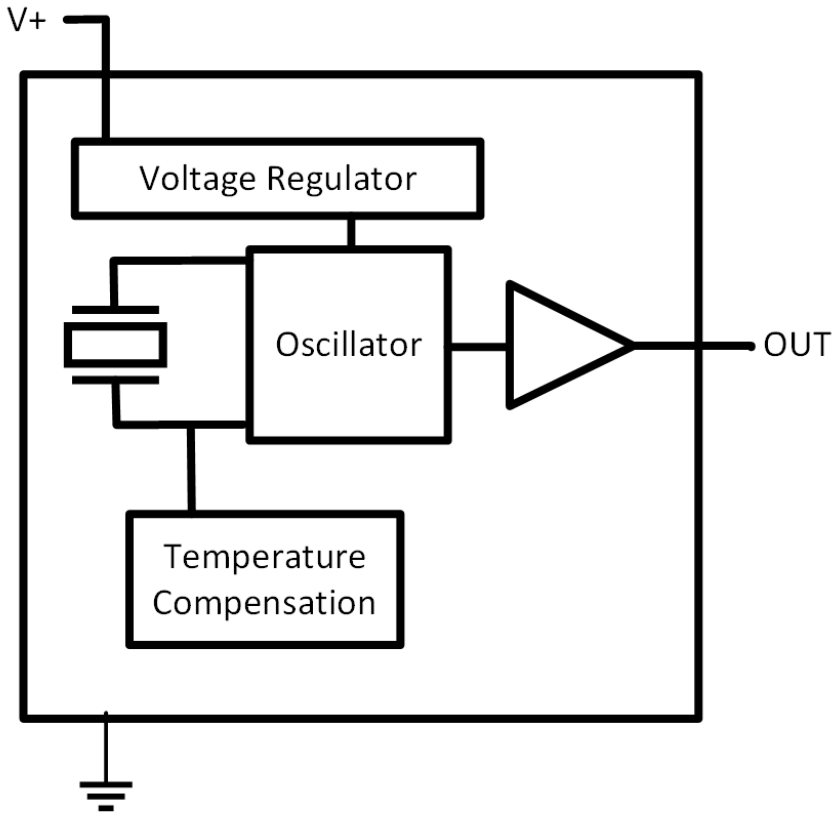
# DOC200103

Space TCXO

Online Datasheet

## Features:

- Smallest space qualified TCXO in the world
- Target Market: Space
- Frequency Range: 0.3 to 425 MHz
- Output: CMOS, Sine
- Footprint: multiple options, see specification mm, through hole
- Supply Voltage: 3.3, 5, 12 V
- Power: 500 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




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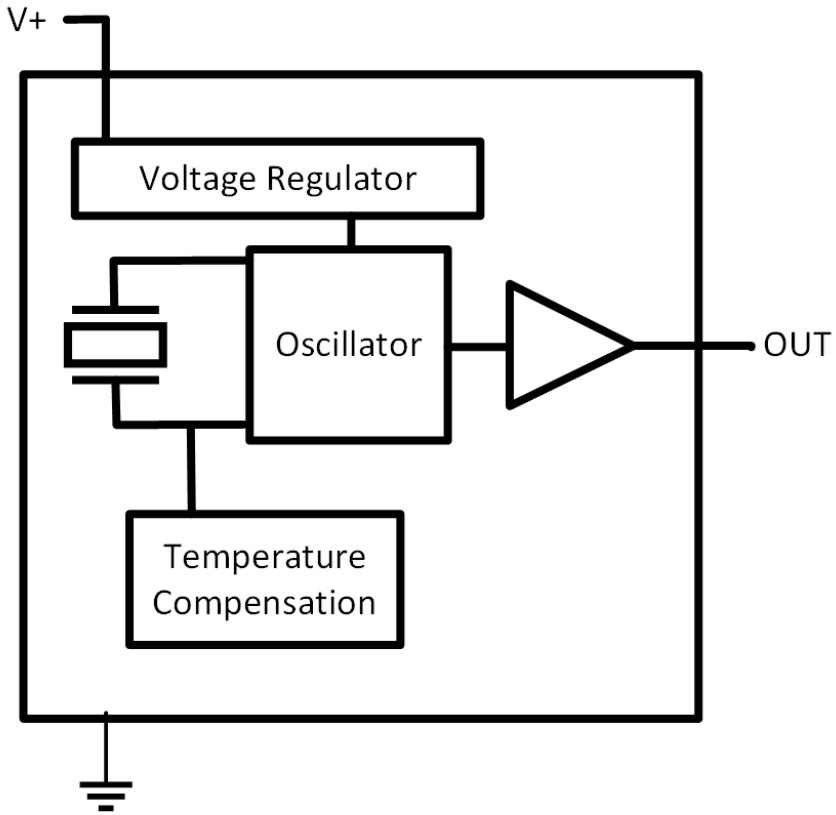
# DOC200103

Space TCXO

Online Datasheet

## Features:

- Smallest space qualified TCXO in the world
- Target Market: Space
- Frequency Range: 0.3 to 425 MHz
- Output: CMOS, Sine
- Footprint: multiple options, see specification mm, through hole
- Supply Voltage: 3.3, 5, 12 V
- Power: 500 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




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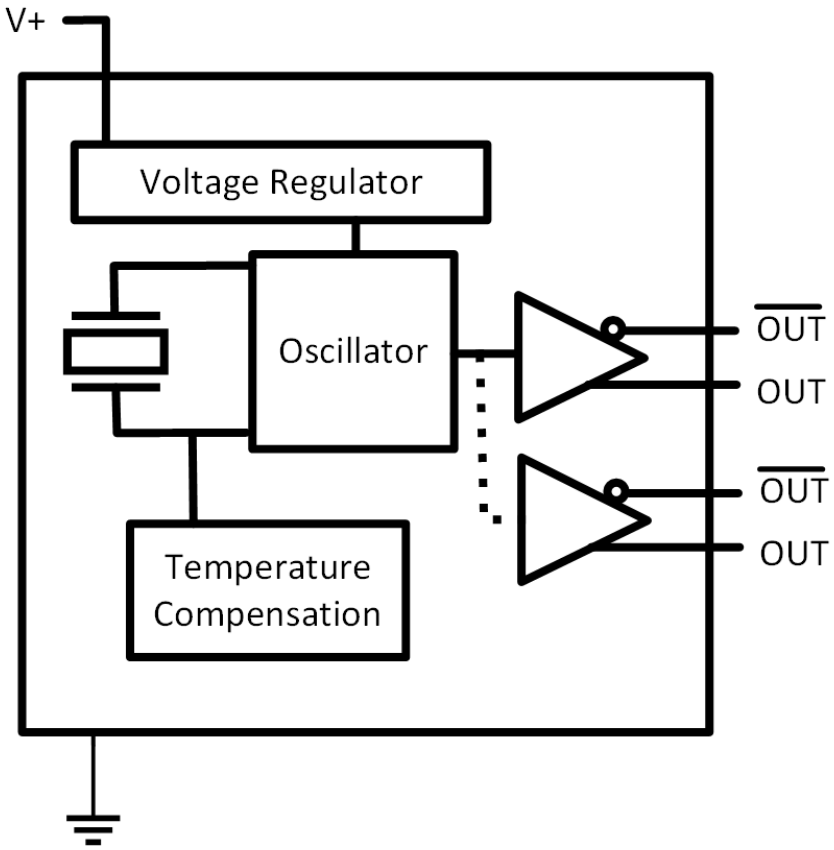
# DOC207139

Space TCXO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVDS
- Footprint: 35 x 25 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 10 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




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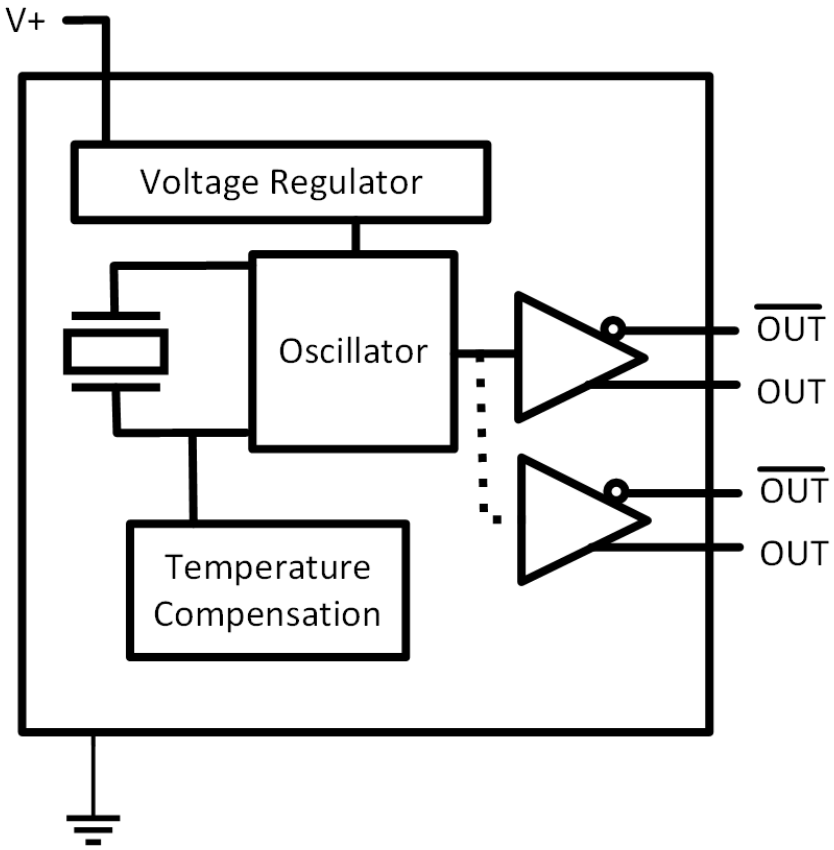
# DOC207139

Space TCXO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVDS
- Footprint: 35 x 25 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 10 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




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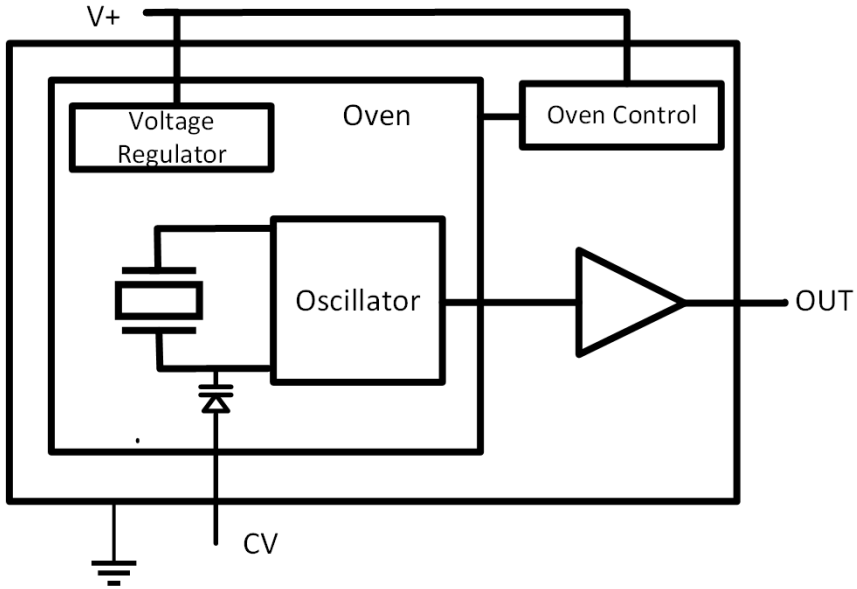
# EX-219

Low Power Space OCXO

Online Datasheet

## Features:

- Only space qualified EMXO
- Target Market: Space
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 26 x 24 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 10 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 0.1 ppm
- Aging per Year: 0.2 ppm
- 20 g Vibration




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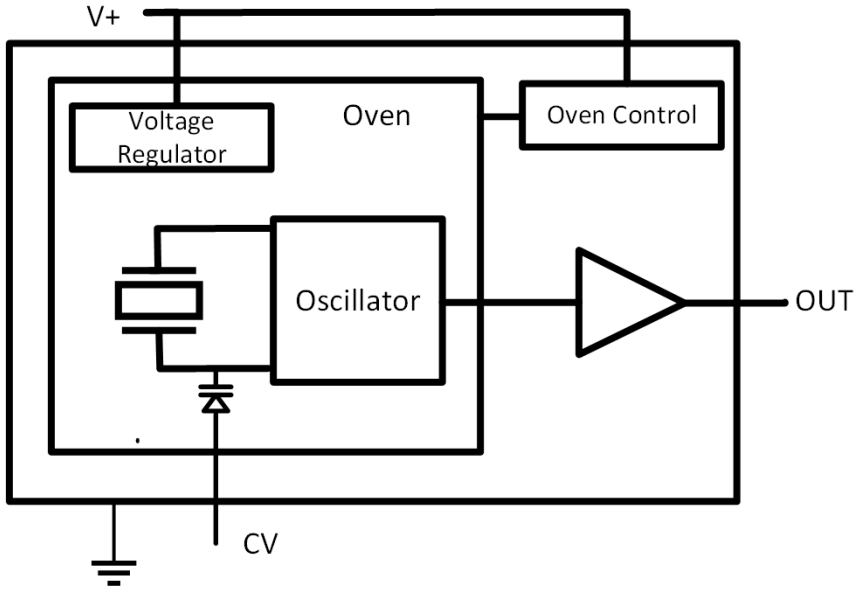
# OX-249

Space OCXO

Online Datasheet

## Features:

- High Stability Space OCXO
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 35 x 20 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Day: 2 ppb
- Phase Noise 100 kHz offset: -163 dBc/Hz @50 MHz carrier




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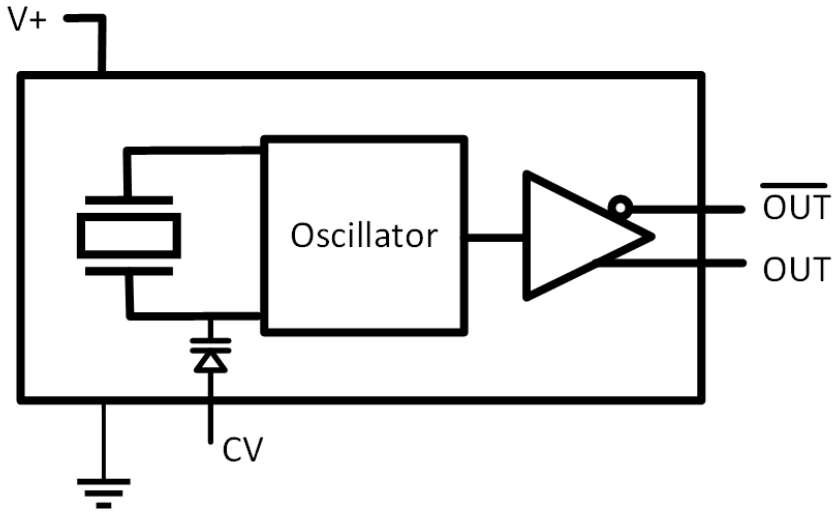
# VS-401

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 1 to 2.5 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 5 V
- Power: 500 mW
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -92 dBc/Hz @1750 MHz carrier
- Phase Noise 1 MHz offset: -155 dBc/Hz @1750MHz carrier




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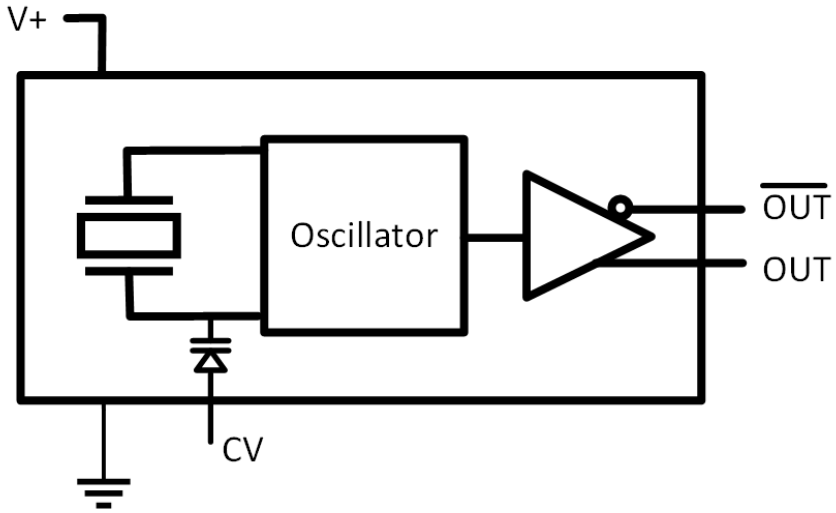
# VS-403

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 5 to 7 GHz
- Output: Sine
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 0 ppm
- Phase Noise 1kHz offset: -83 dBc/Hz @5898 MHz carrier
- Phase Noise 1 MHz offset: -140 dBc/Hz @5898MHz carrier




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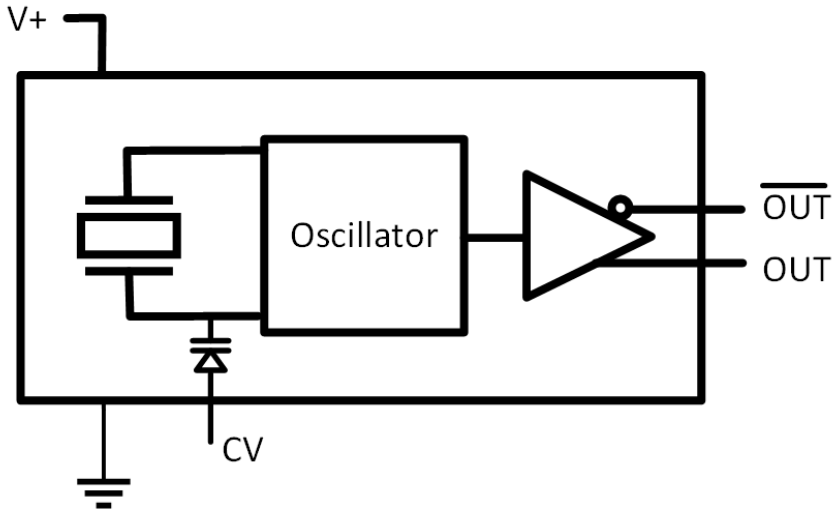
# VS-501

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 5 V
- Power: 500 mW
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 2 ppm
- Phase Noise 1kHz offset: -96 dBc/Hz @1700 MHz carrier
- Phase Noise 1 MHz offset: -156 dBc/Hz @1700MHz carrier




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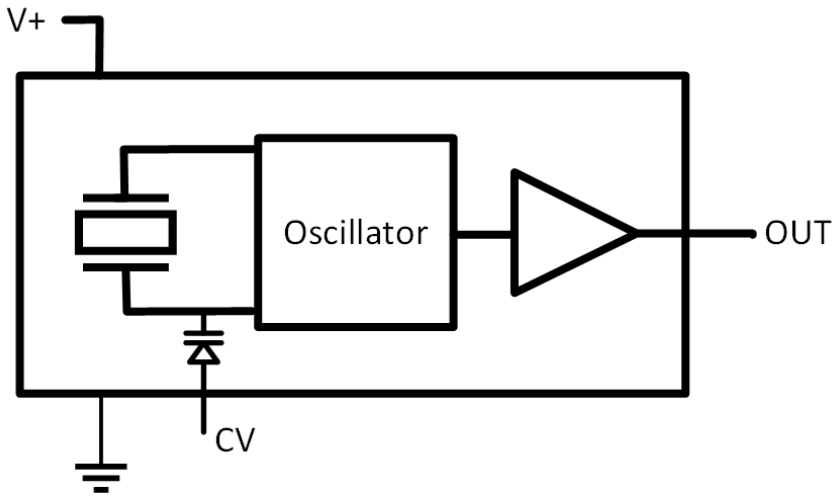
# VS-506

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 3 GHz
- Output: Sine
- Footprint: 14 x 9 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- 1.2ppb/g
- Temperature Range: 10 to 85 °C
- Absolute Pull Range: 20 ppm




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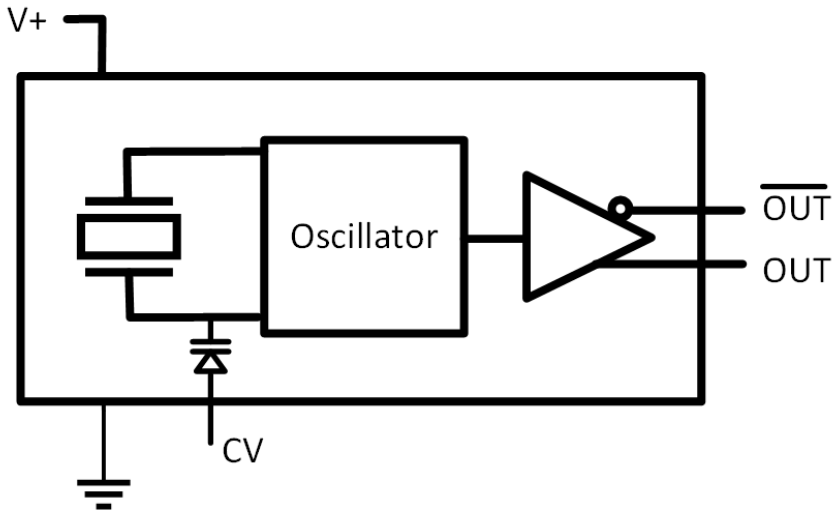
# VS-507

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 3 to 6 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 280.5 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 5 ppm
- Phase Noise 1kHz offset: -86 dBc/Hz @5898.24 MHz carrier
- Phase Noise 1 MHz offset: -146 dBc/Hz @5898.24MHz carrier




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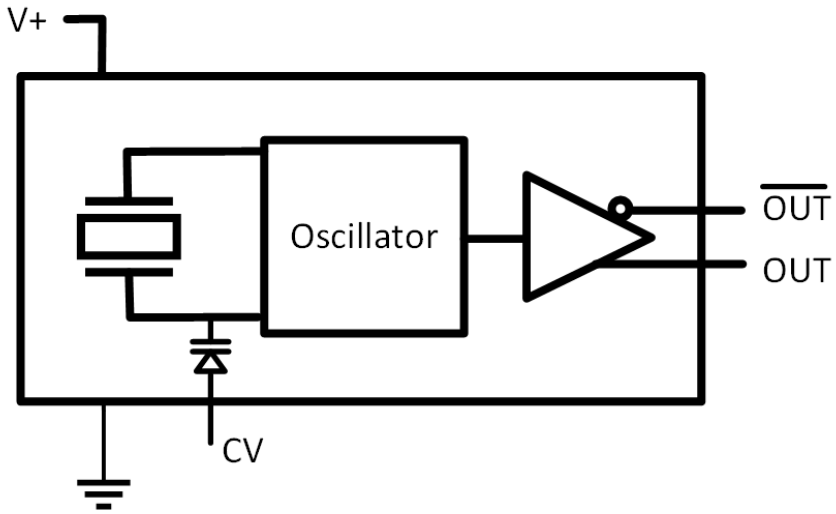
# VS-508

Low g VCSO

Online Datasheet

## Features:

- Frequency Range: 0.8 to 2.9 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 325 mW
- Temperature Range: 10 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -102 dBc/Hz @2000 MHz carrier
- Phase Noise 1 MHz offset: -150 dBc/Hz @2000MHz carrier




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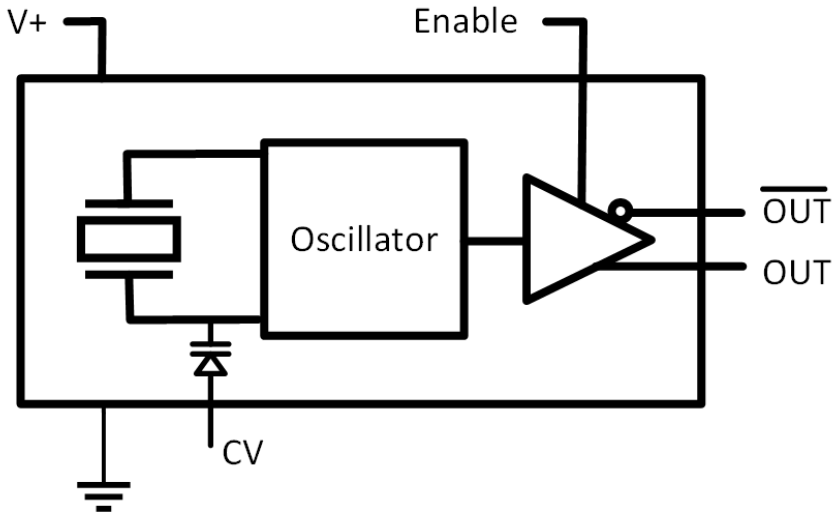
# VS-701

High shock VCSO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: 10 to 85 °C
- 20000 g Shock, 0.2 ms Duration
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -93 dBc/Hz @2000 MHz carrier
- Phase Noise 1 MHz offset: -158 dBc/Hz @2000MHz carrier




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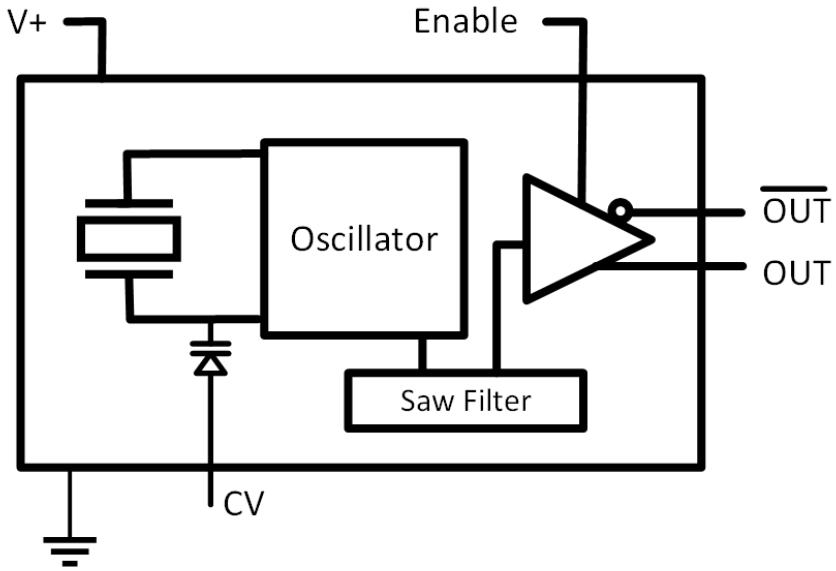
# VS-702

Single frequency VCSO

Online Datasheet

## Features:

- Low noise, high stability VCSO
- Frequency Range: 0.15 to 1 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 20 ppm
- Absolute Pull Range: 50 ppm
- Phase Noise 1kHz offset: -108 dBc/Hz @622.08 MHz carrier
- Phase Noise 1 MHz offset: -137 dBc/Hz @622.08MHz carrier




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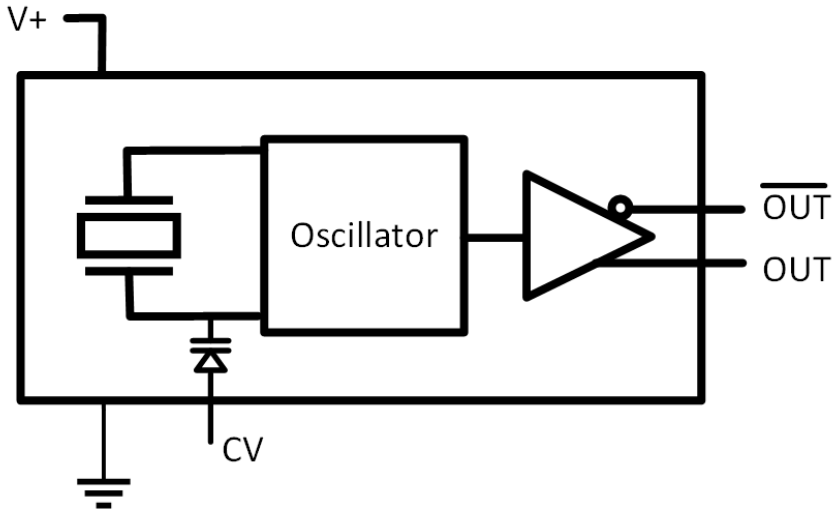
# VS-705

Single frequency VCSO

Online Datasheet

## Features:

- Frequency Range: 0.12288 to 1 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 240.9 mW
- Temperature Range: -40 to 85 °C




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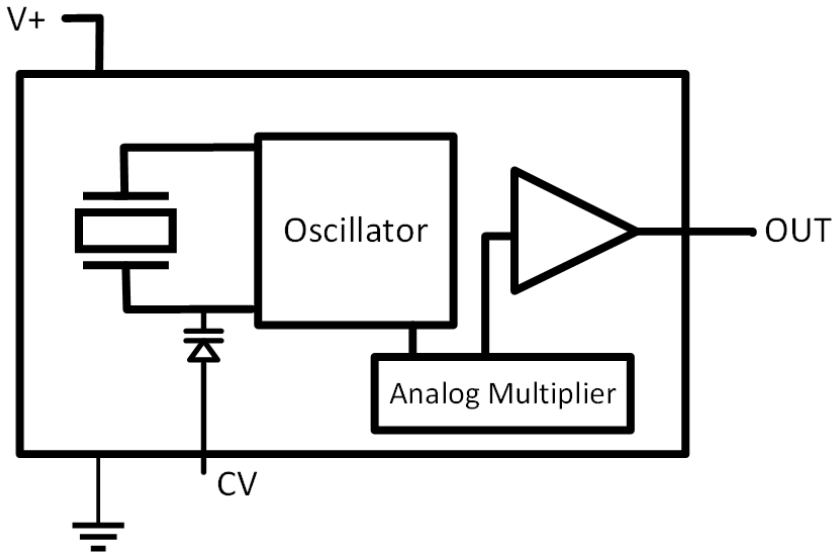
# VS-800

Single frequency VCSO

Online Datasheet

## Features:

- Smallest form factor, High Frequency VCSO in market
- Frequency Range: 0.8 to 3.2 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -95 dBc/Hz @2949.12 MHz carrier
- Phase Noise 1 MHz offset: -162 dBc/Hz @2949.12MHz carrier




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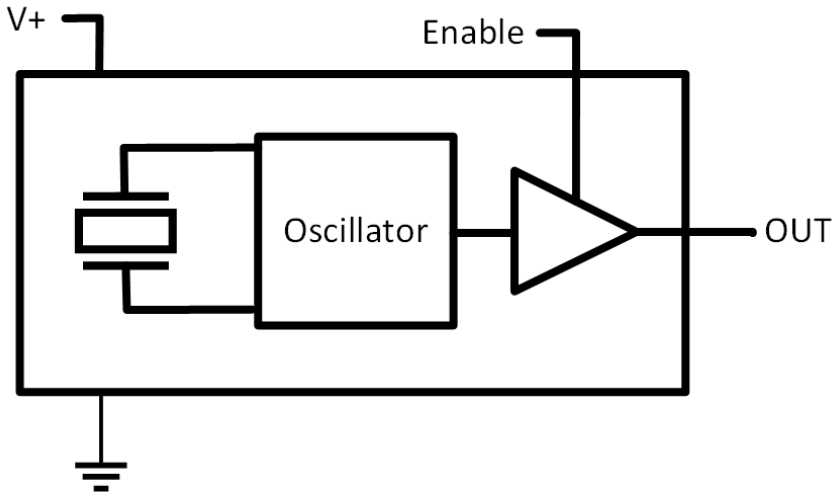
# PX-400

Precision XO

Online Datasheet

## Features:

- Frequency Range: 0.000001 to 200 MHz
- Output: CMOS, TTL
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 2.7 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm




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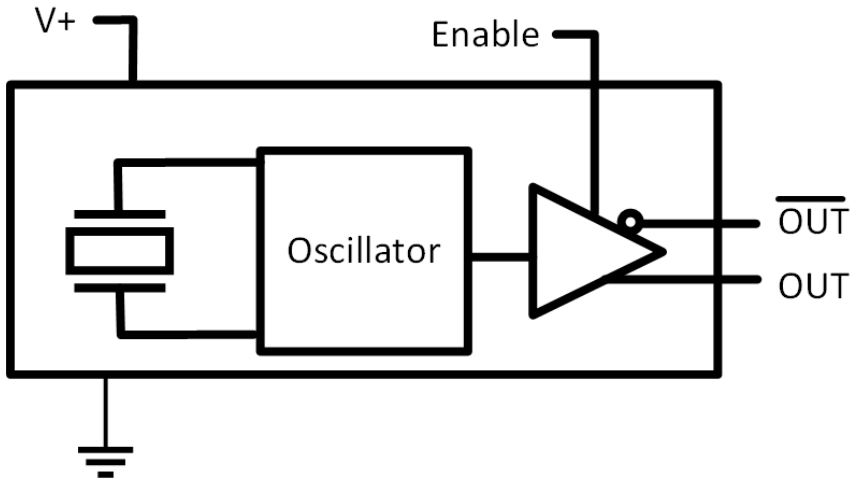
# PX-500

Precision XO

Online Datasheet

## Features:

- Target Market: Military
- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




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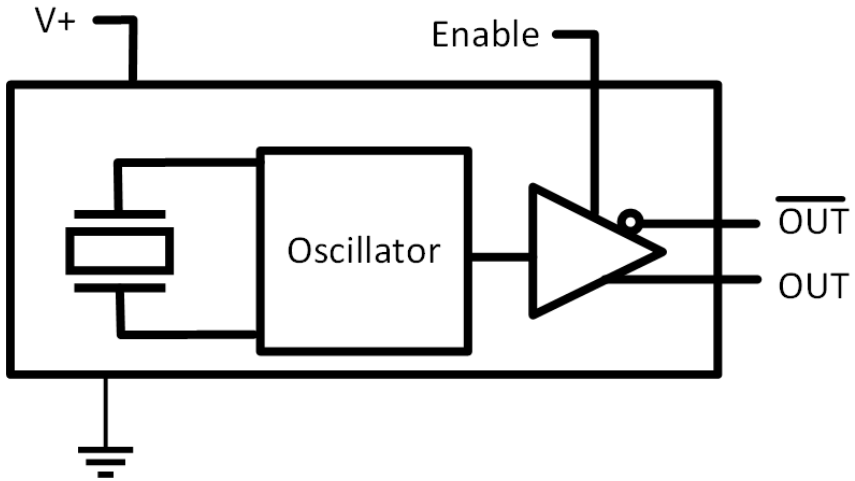
# PX-501

Standard XO

Online Datasheet

## Features:

- Frequency Range: 0.01 to 1.2 GHz
- Output: CMOS, Sine, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 99 mW
- Temperature Range: -20 to 70 °C
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 3 ppm
- Phase Noise 10 Hz offset: -85 dBc/Hz @416 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @416 MHz carrier




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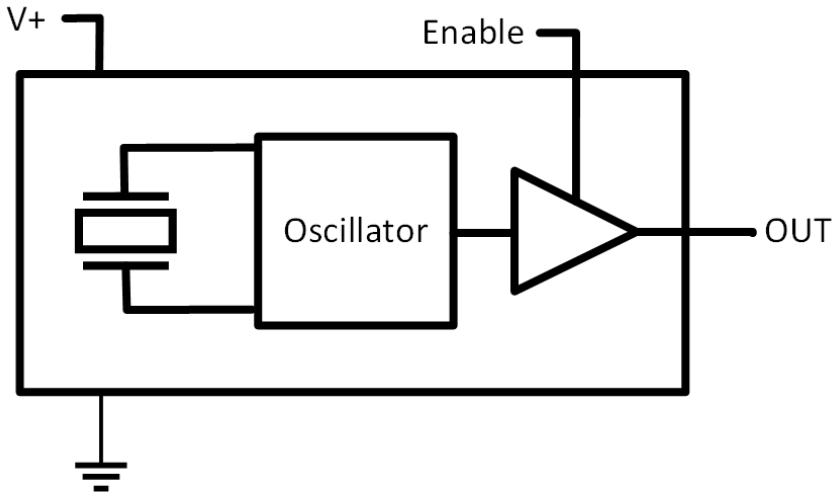
# PX-504

Low g XO

Online Datasheet

## Features:

- Frequency Range: 30 to 180 MHz
- Standard Frequencies: 50, 80, 100, 120, 122.88, 160 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 66 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.3 ppb/g
- Temperature Stabilty over Operating Temperature Range: 25 ppm
- Aging per Year: 0 ppm




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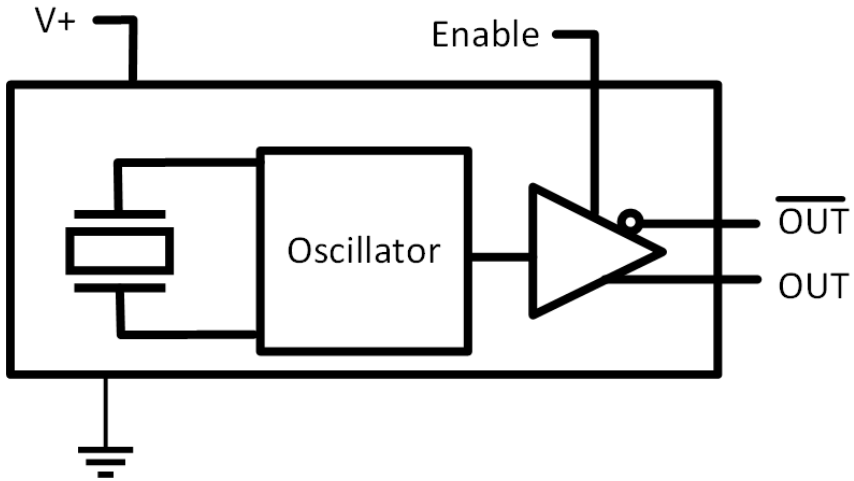
# PX-700

Precision XO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, TTL, LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3, 5 V
- Power: 15 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 25 ppm
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 3 ppm




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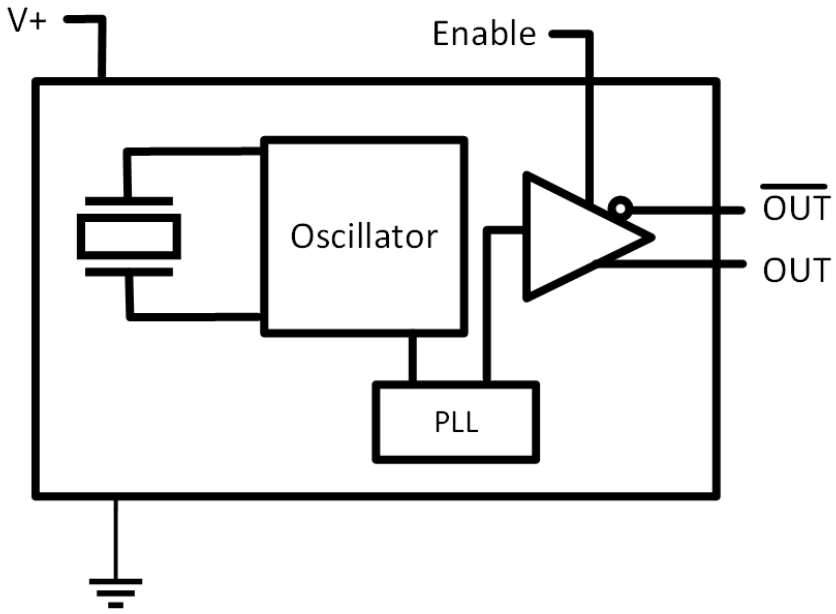
# VC-824

Quick turn programmable XO

Coming Soon

## Features:

- Frequency Range: 10 to 800 MHz
- Output: CMOS, LVPECL, LVDS
- Footprint: 3.2 x 2.5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 160 mW
- Temperature Range: -45 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 2 ppm
- 12k to 20 MHz jitter: 1000 fs-rms @ 125 MHz




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<< BACK

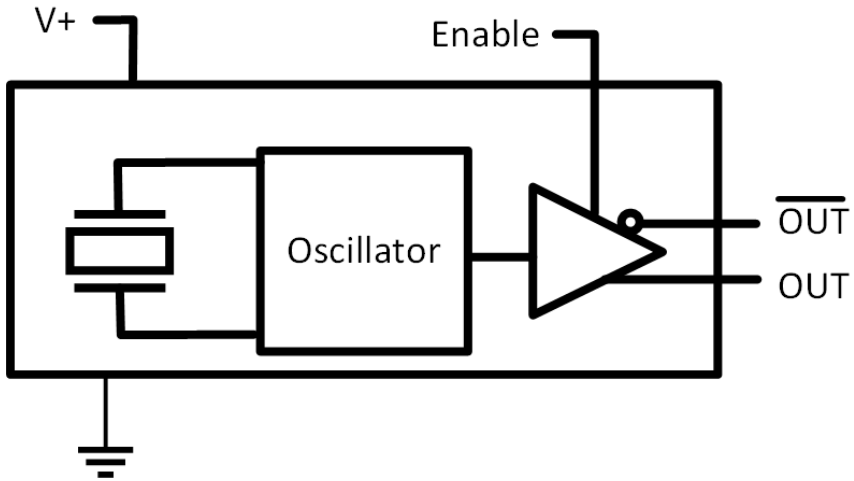
# VCC6

Standard XO

Online Datasheet

## Features:

- Frequency Range: 10 to 275 MHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 150 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty 0 to 70°C: 20 ppm
- Temperature Stabilty -40 to 85°C: 20 ppm
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- 12k to 20 MHz jitter: 300 fs-rms @ 155.52 MHz




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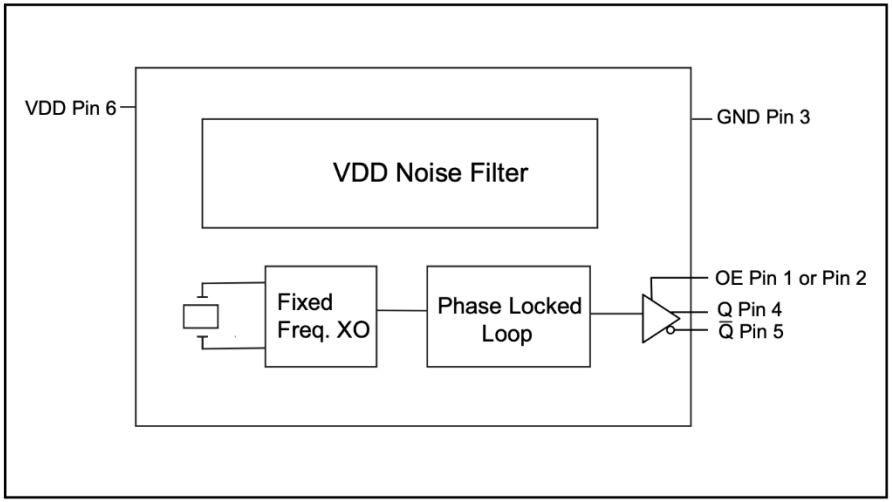
# MX55/57

Ultra-low Jitter Industry Standard Crystal Oscillators

Online Datasheet

## Features:

- Typical phase jitter: 200fs
- Supports 1 output
- Integrated crystal
- 2.5MHz to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard package:
  - MX55 - 3.2mm x 5mm
  - MX57 - 5mm x 7mm




| Part Number | Output Frequency (MHz) | Output Format | Frequency Stability (ppm) | Jitter (typ) (ps RMS) | Supply current (mA) | Supply voltage (V) | Temp. Range (°C) | Package size (mmxmm) | Custom Configuration |
|---|---|---|---|---|---|---|---|---|---|
| MX57 | <840 | LVCMOS LVPECL LVDS HSCL | ±50 | 0.2 | 70 | 2.25 to 3.63 | -20 to 70 -40 to 85 | 7.0x5.0 6L | ClockWorks Web tool |
| MX55 | <840 | | | | | | | 5.0x3.2 6L | |
| MX85 | <840 | | | 0.2 | 90 | | | 7.0x5.0 38-PIN LGA | |


<< BACK

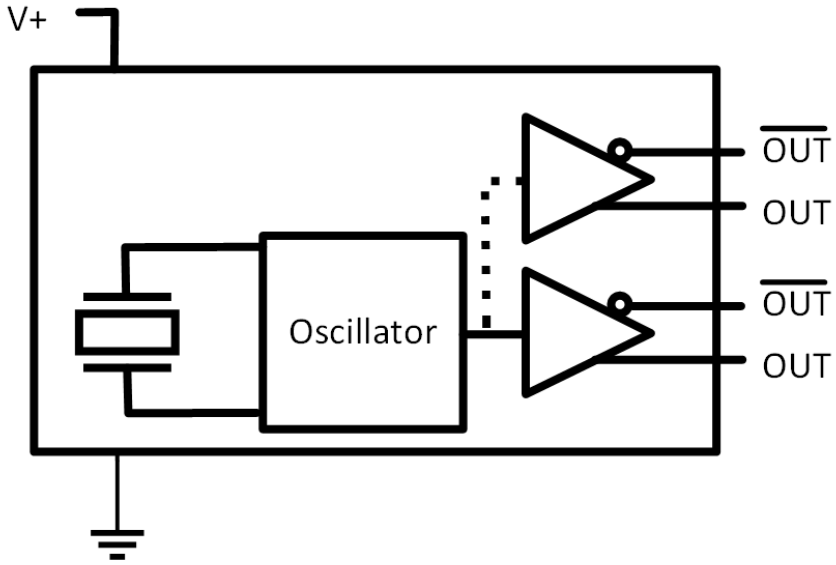
# DOC203810

Space XO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVPECL
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 3.3 V
- Power: 330 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 50 krad ELDRS
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




Vectron™ | a Microchip company

<< BACK

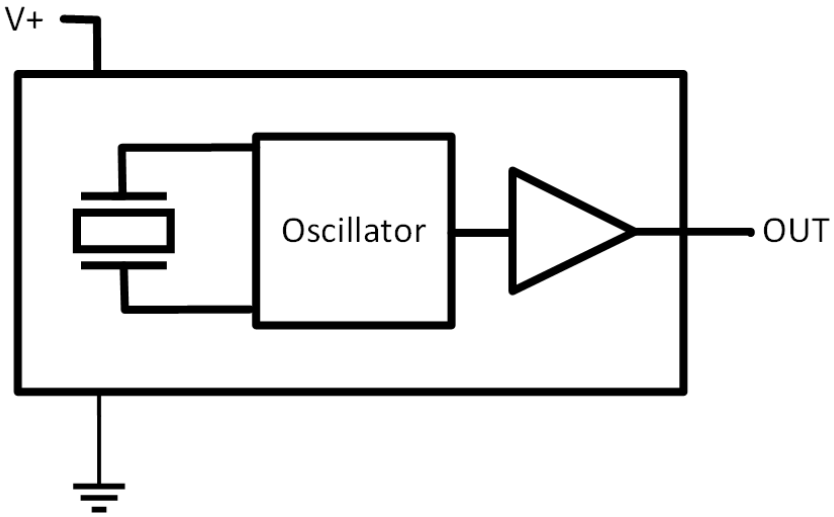
# DOC204900

Space XO

Online Datasheet

## Features:

- SET/SEU free to >90 MeV-cm2/mg
- Target Market: Space
- Frequency Range: 12 to 160 MHz
- Output: CMOS
- Footprint: multiple options, see specification mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 250 mW
- Temperature Range: -55 to 125 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 30 g Vibration




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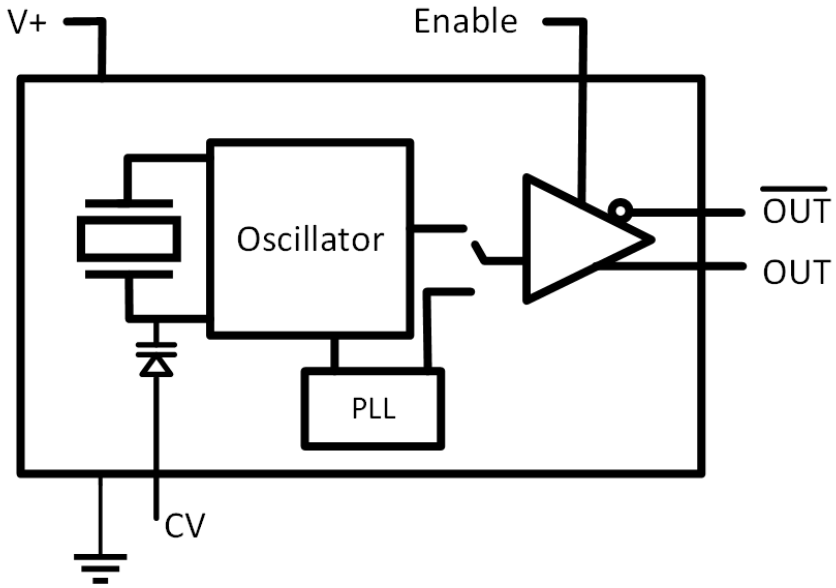
# VX-500

Low g VCXO

Online Datasheet

## Features:

- Frequency Range: 1 to 800 MHz
- Output: CMOS, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 19.8 mW
- Temperature Range: -55 to 125 °C
- Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -60 dBc/Hz @52 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @52 MHz carrier




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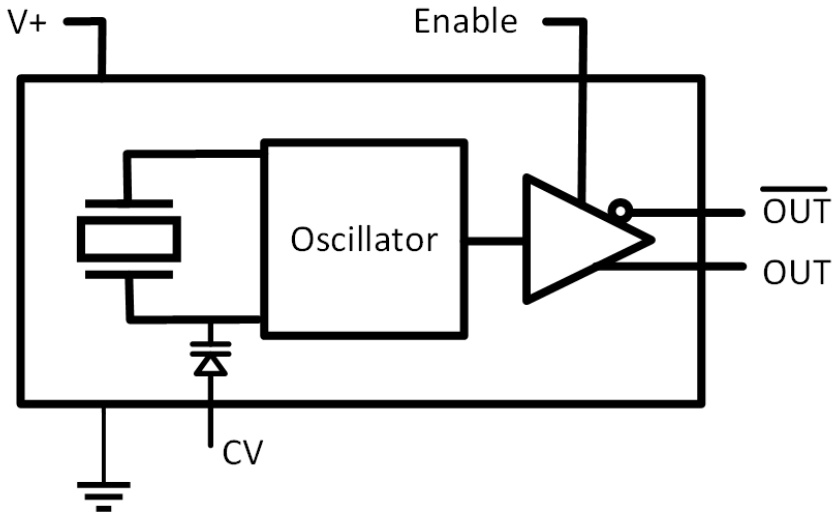
# VX-501

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 0.01 to 1.2 GHz
- Output: CMOS, Sine, LVPECL, LVDS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 132 mW
- Temperature Range: -40 to 85 °C
- Pull Range: 65 ppm
- Phase Noise 10 Hz offset: -76 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -166 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 30 ppm




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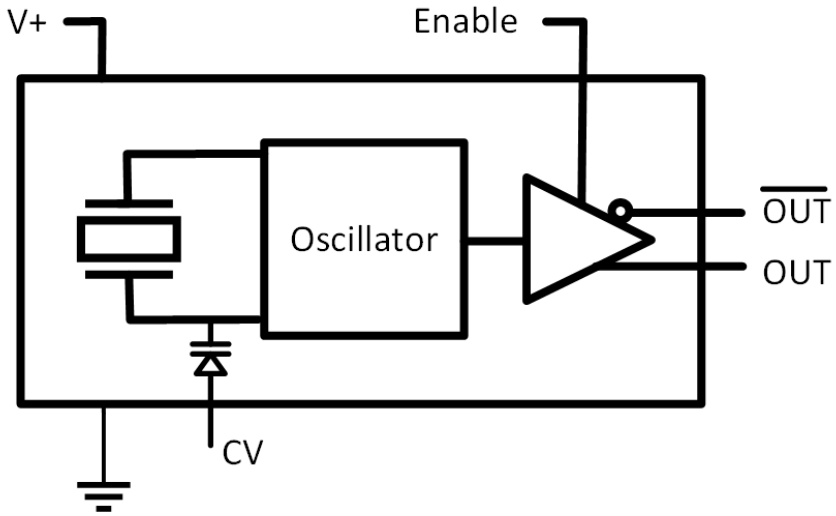
# VX-505

Mil temp range VCXO

Online Datasheet

## Features:

- Frequency Range: 20 to 800 MHz
- Output: CMOS, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 132 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 45 ppm
- Pull Range: 60 ppm
- Phase Noise 10 Hz offset: -76 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -161 dBc/Hz @100 MHz carrier




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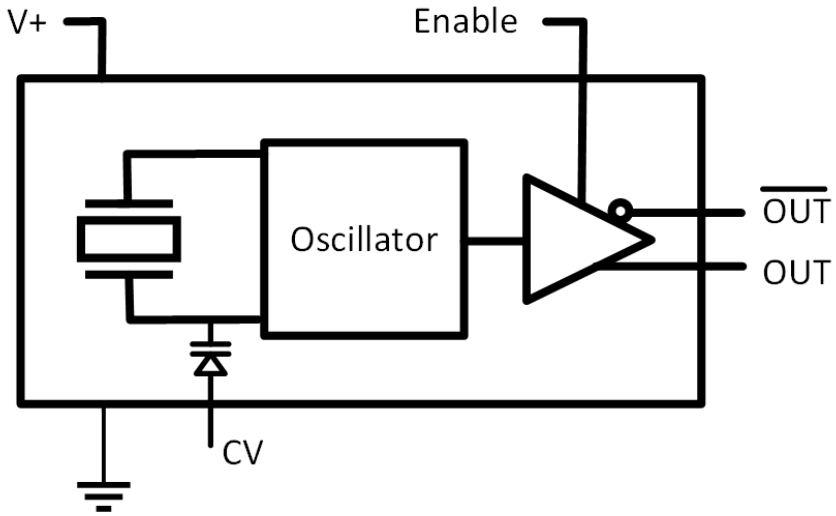
# VX-706

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 40 to 300 MHz
- Output: CMOS, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 75 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 60 ppm
- Phase Noise 10 Hz offset: -72 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -166 dBc/Hz @122.88 MHz carrier




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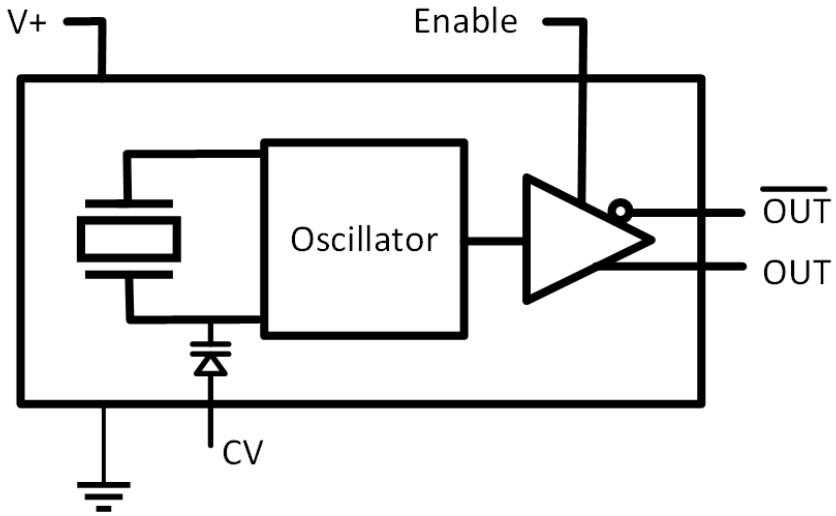
# VX-805

Low noise VCXO

Online Datasheet

## Features:

- Frequency Range: 100 to 204.8 MHz
- Output: LVPECL
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 165 mW
- Temperature Range: -40 to 105 °C
- Absolute Pull Range: 50 ppm
- Phase Noise 10 Hz offset: -68 dBc/Hz @122.88 MHz carrier
- Phase Noise 100 kHz offset: -157 dBc/Hz @122.88 MHz carrier




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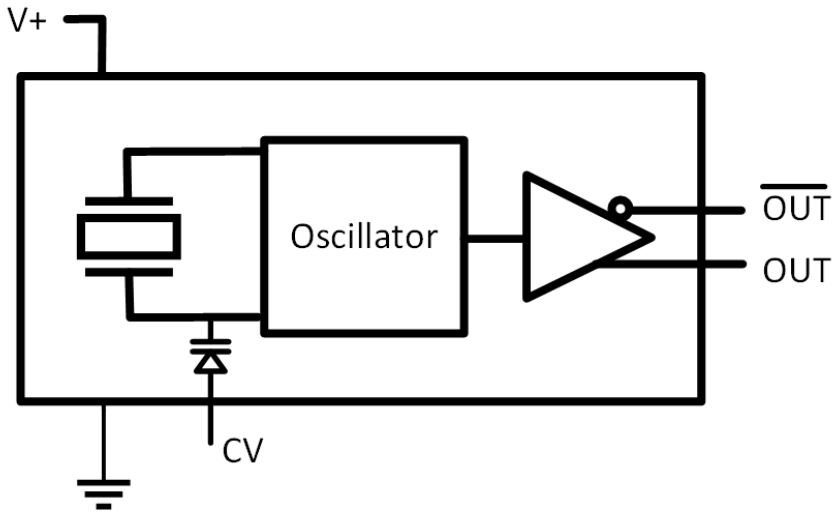
# DOC204898

Space VCXO

Online Datasheet

## Features:

- Popular for driving rad tolerant clock synchronizers and jitter cleaners
- Target Market: Space
- Frequency Range: 100 to 700 MHz
- Output: LVPECL
- Footprint: 25 x 25  mm, surface mount
- Supply Voltage: 3.3 V
- Power: 281 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 50 krad ELDRS
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




Vectron™ | a Microchip company

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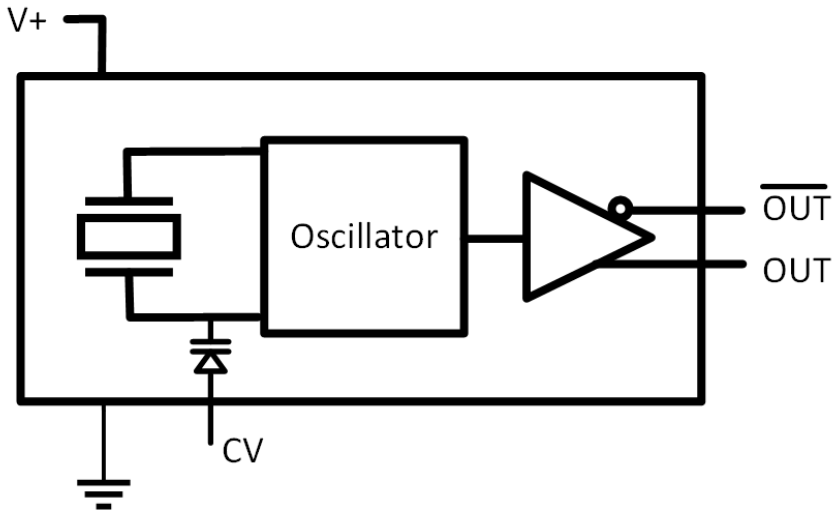
# DOC204899

Space VCXO

Online Datasheet

## Features:

- Target Market: Space
- Frequency Range: 80 to 200 MHz
- Output: LVDS
- Footprint: 25 x 25  mm, surface mount
- Supply Voltage: 3.3 V
- Power: 325 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Absolute Pull Range: 20 ppm
- 1500 g Shock, 0.5 ms Duration
- 30 g Vibration




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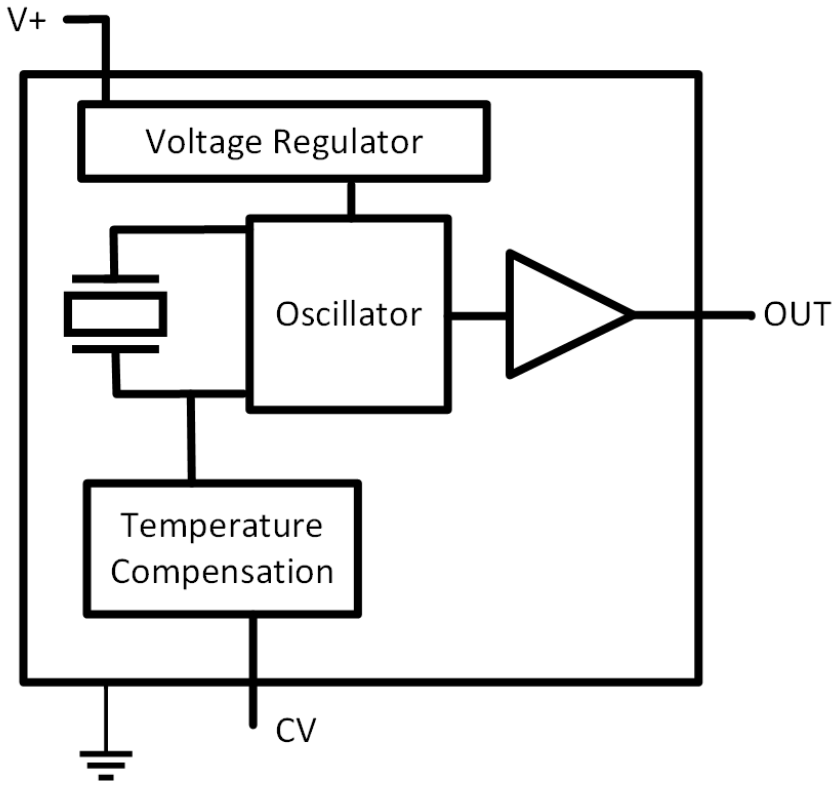
# TX-401

Standard TCXO

Online Datasheet

## Features:

- Frequency Range: 250 to 700 MHz
- Output: Clipped Sine
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 247.5 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 1 ppm
- Aging per Year: 0 ppm




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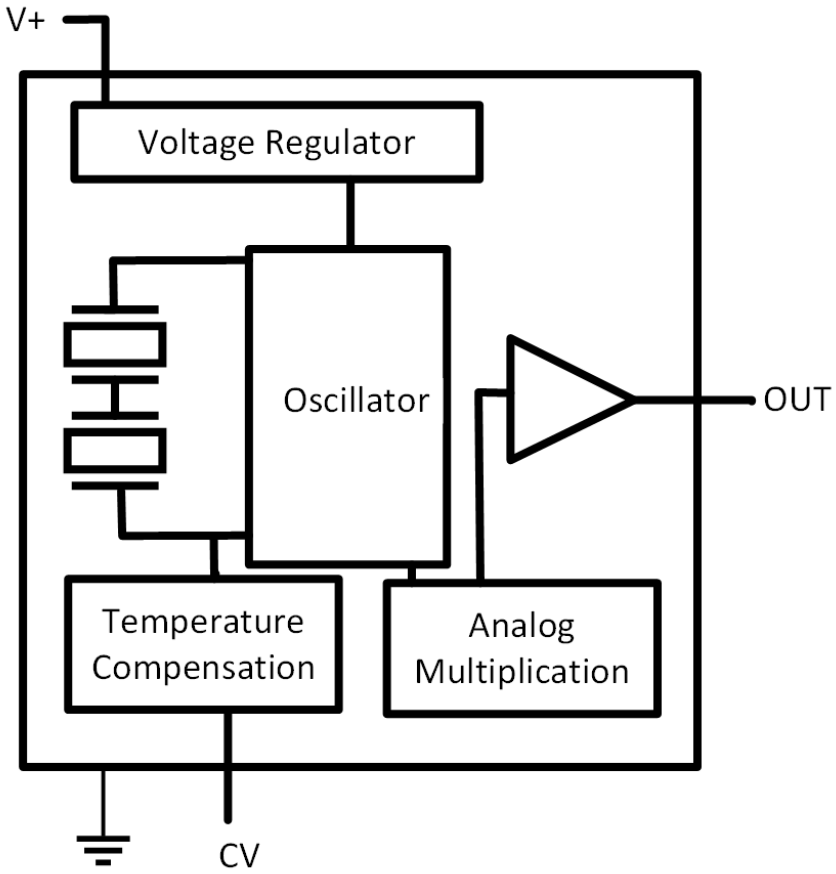
# TX-550

Low g TCXO

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Clipped Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 11 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 98 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.2 ppb/g
- Phase Noise 10 Hz offset: -110 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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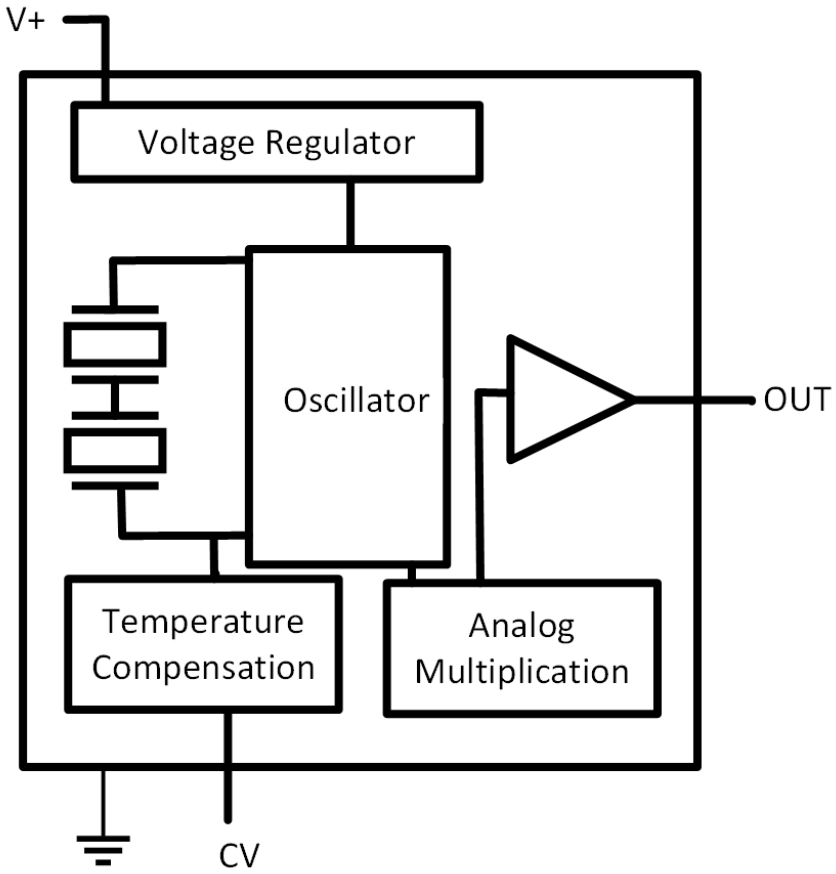
# TX-550

Low g TCXO

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Standard Frequencies: 10, 12.8, 20 MHz
- Output: CMOS, Clipped Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 11 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 98 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.2 ppb/g
- Phase Noise 10 Hz offset: -110 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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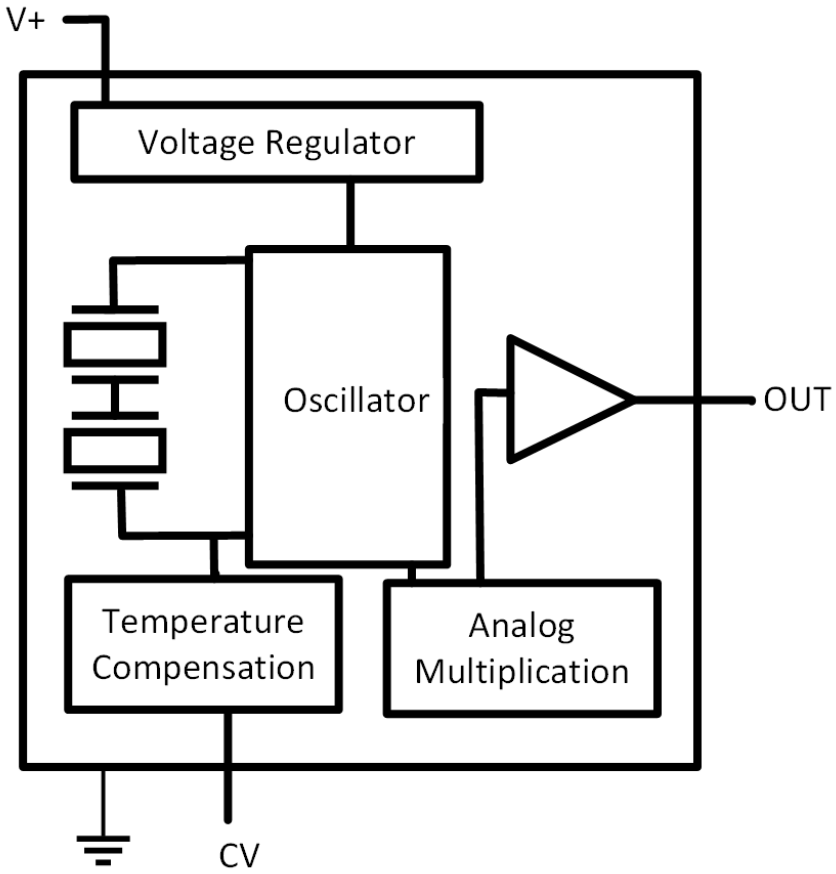
# TX-708

Low g TCXO

Coming Soon

## Features: COMING SOON

- High frequency, low g
- Target Market: Military
- Frequency Range: 96 to 160 MHz
- Standard Frequencies: 98.208, 100, 115.2, 120, 144, 150, 155.52, 160 MHz
- Output: CMOS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 121 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.1 ppb/g
- Phase Noise 10 Hz offset: -75 dBc/Hz @150 MHz carrier
- Phase Noise 100 kHz offset: -145 dBc/Hz @150 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm




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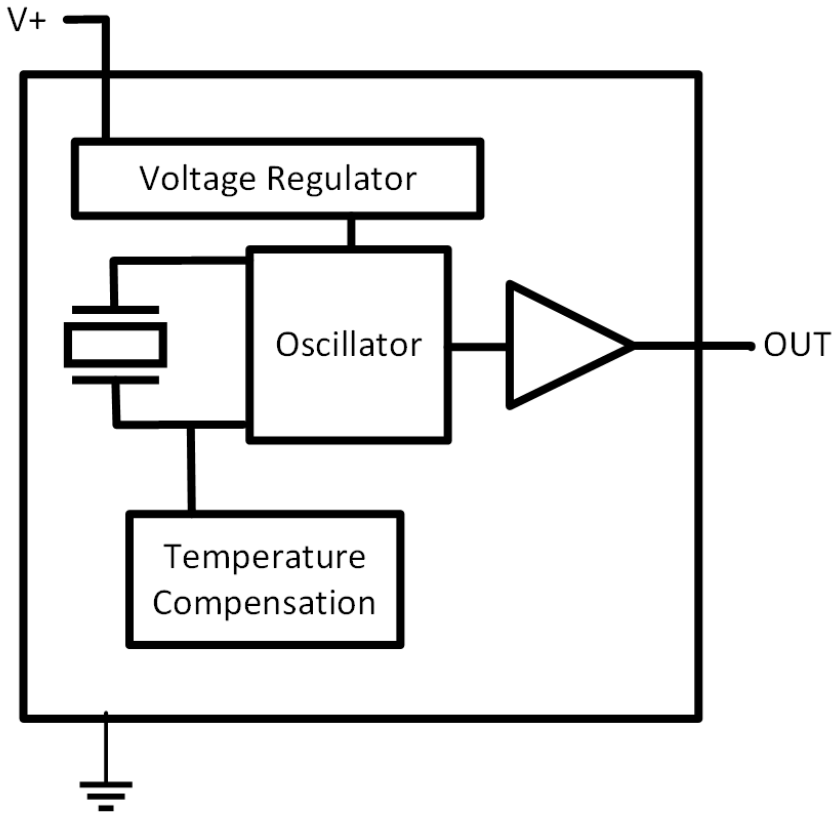
# DOC200103

Space TCXO

Online Datasheet

## Features:

- Smallest space qualified TCXO in the world
- Target Market: Space
- Frequency Range: 0.3 to 425 MHz
- Output: CMOS, Sine
- Footprint: multiple options, see specification mm, through hole
- Supply Voltage: 3.3, 5, 12 V
- Power: 500 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




Vectron™ | a Microchip company


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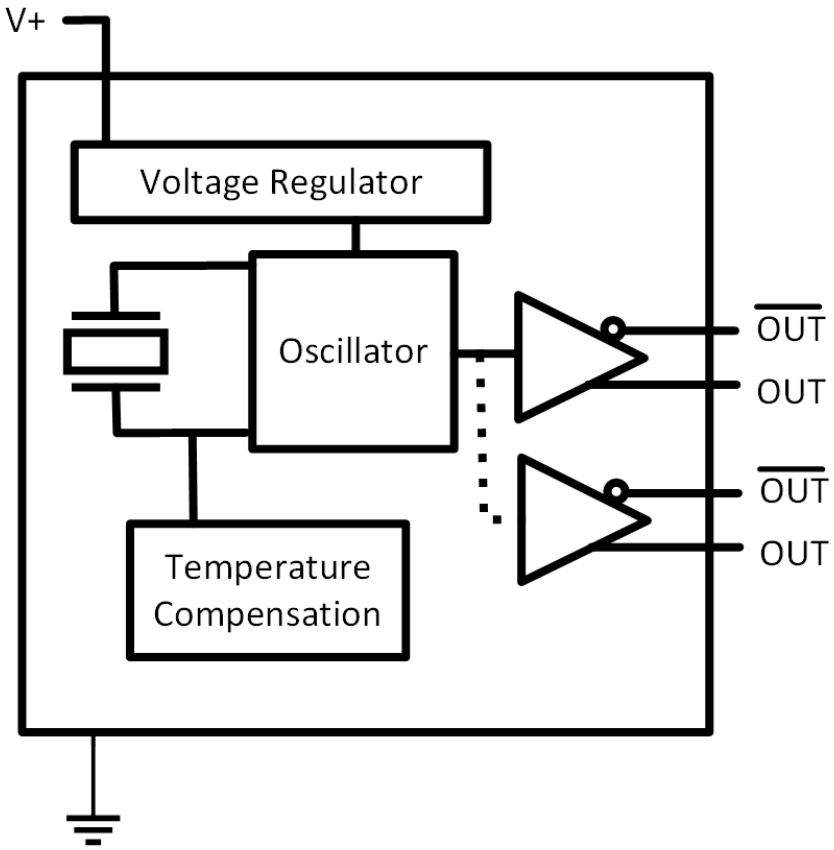
# DOC207139

Space TCXO

Online Datasheet

## Features:

- Dual complimentary output pairs
- Target Market: Space
- Frequency Range: 12 to 200 MHz
- Number of RF outputs: 1,2 pairs
- Output: LVDS
- Footprint: 35 x 25 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 10 mW
- Temperature Range: -55 to 105 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 10 ppm
- Aging per Year: 1 ppm
- 30 g Vibration




Vectron™ | a Microchip company

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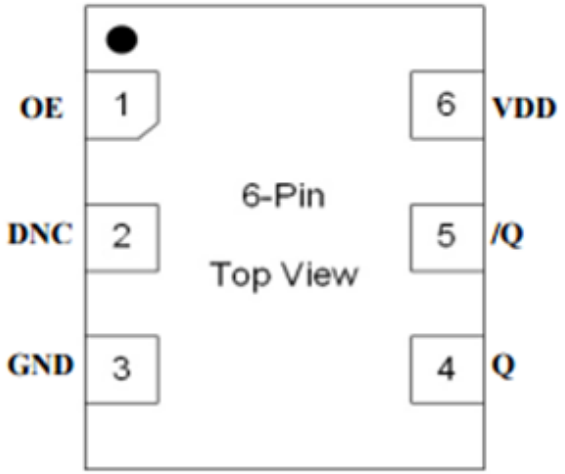
# MXT57

High-Frequency TCXO Oscillator

Online Datasheet

## Features:

- Supports 1 LVCMOS/LVPECL/LVDS/HSCL output
- Typical phase jitter: 0.2ps
- Guaranteed ±2.5ppm over -40°C to +85°C
- ±5ppm total frequency stability
- Integrated crystal
- Output up to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard 6-Pin 7mm x 5mm LGA package





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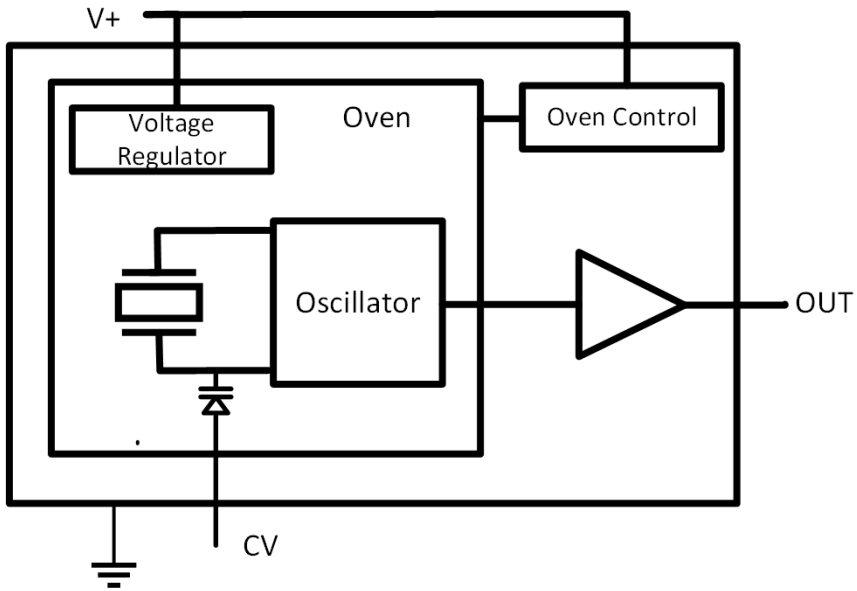
# EX-219

Low Power Space OCXO

Online Datasheet

## Features:

- Only space qualified EMXO
- Target Market: Space
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 26 x 24 mm, through hole
- Supply Voltage: 3.3, 5 V
- Power: 10 mW
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 100 krad TID
- Temperature Stabilty over Operating Temperature Range: 0.1 ppm
- Aging per Year: 0.2 ppm
- 20 g Vibration




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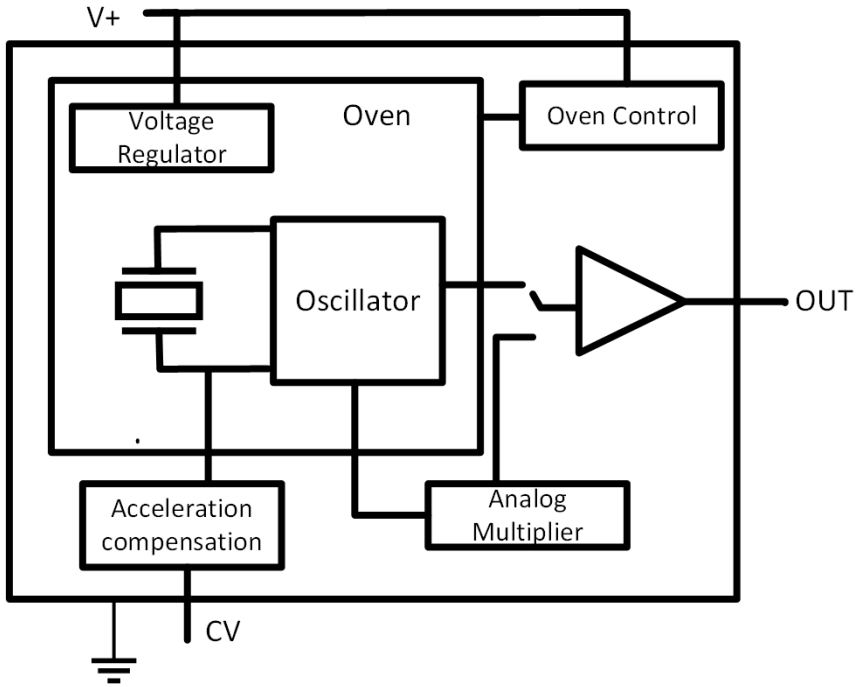
# OX-046

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 50 to 250 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.05 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @100 MHz carrier




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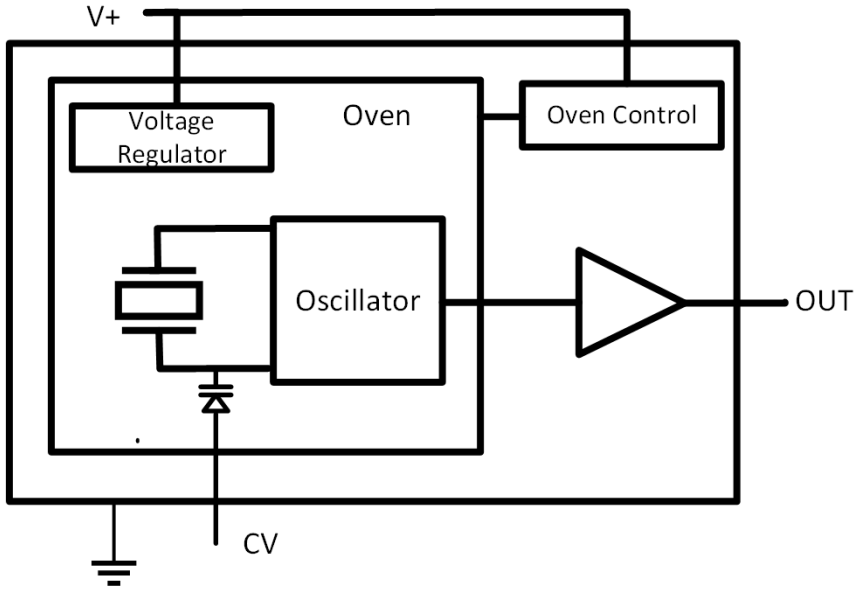
# OX-175

Low noise OCXO

Online Datasheet

## Features:

- High Stabilty, Low phase noise oscillator
- Frequency Range: 50 to 130 MHz
- Output: Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -176 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Year: 200 ppb




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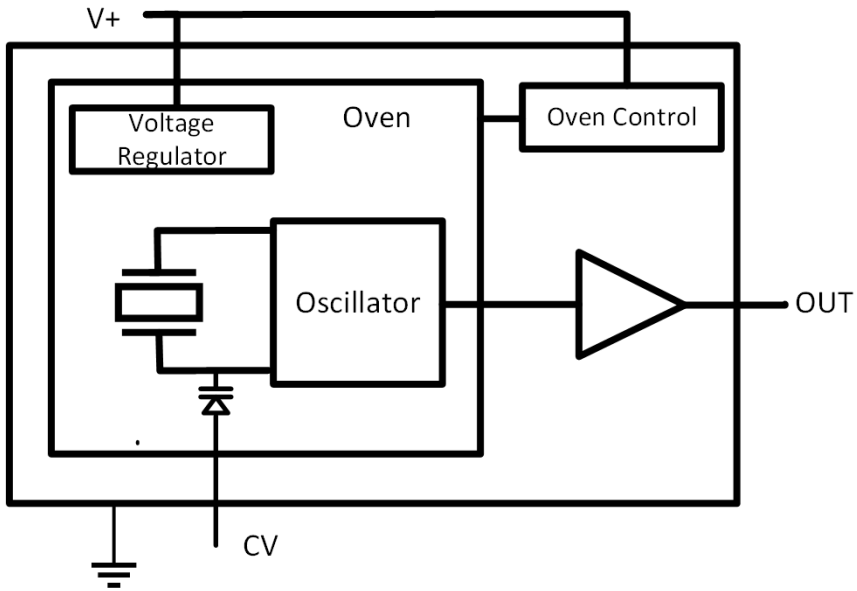
# OX-205

Low noise OCXO

Online Datasheet

## Features:

- Low Phase Noise Oscillator
- Target Market: Test and Measurement
- Frequency Range: 80 to 120 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -45 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -178 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 200 ppb
- Aging per Year: 200 ppb




Vectron™ | a Microchip company

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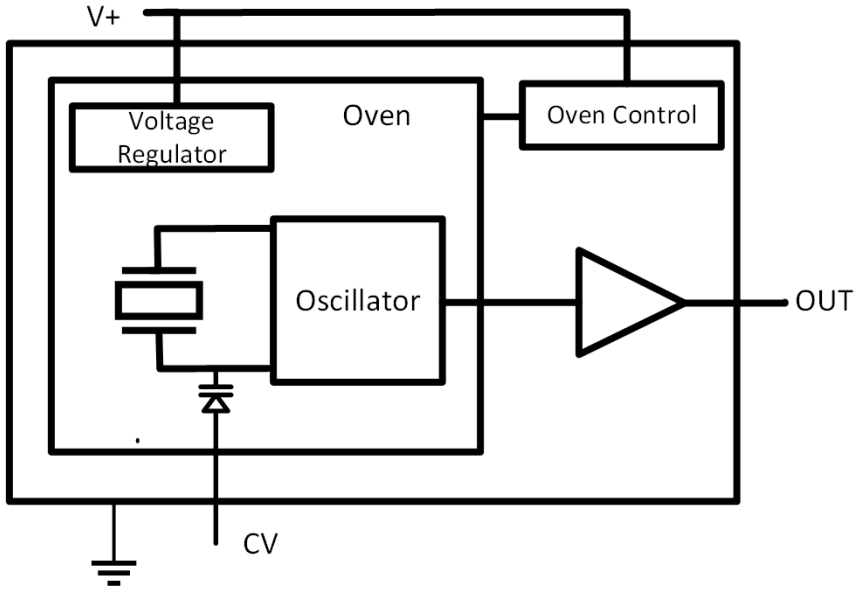
# OX-249

Space OCXO

Online Datasheet

## Features:

- High Stability Space OCXO
- Frequency Range: 10 to 120 MHz
- Output: CMOS, Sine
- Footprint: 35 x 20 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -40 to 85 °C
- Radiation Tolerance: 300 krad TID
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Day: 2 ppb
- Phase Noise 100 kHz offset: -163 dBc/Hz @50 MHz carrier




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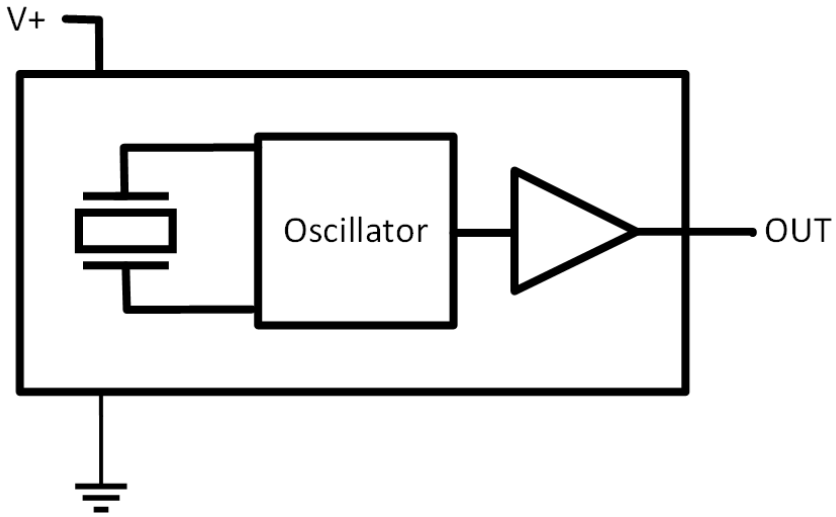
# PS-501

Standard SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




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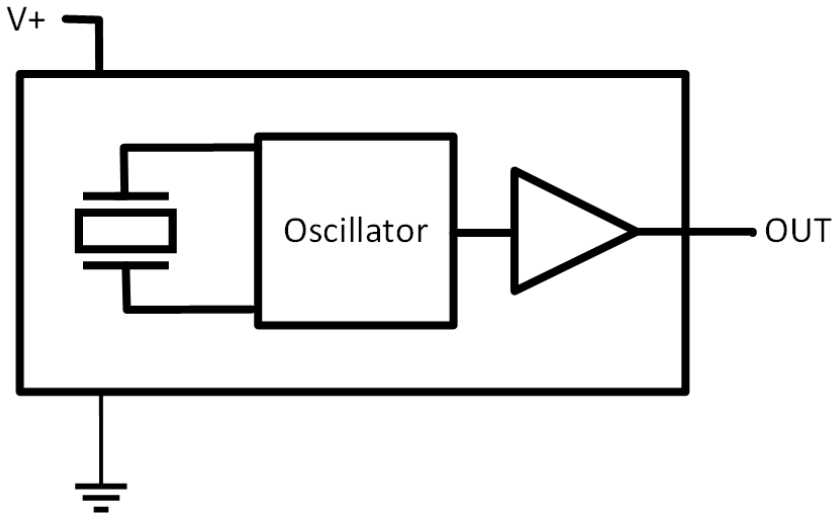
# PS-508

Low g SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, Balanced or Differential Sinewave, LVPECL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 330 mW
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.6 ppb/g
- Phase Noise 10 Hz offset: -55 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @1000 MHz carrier




Vectron™ | a Microchip company


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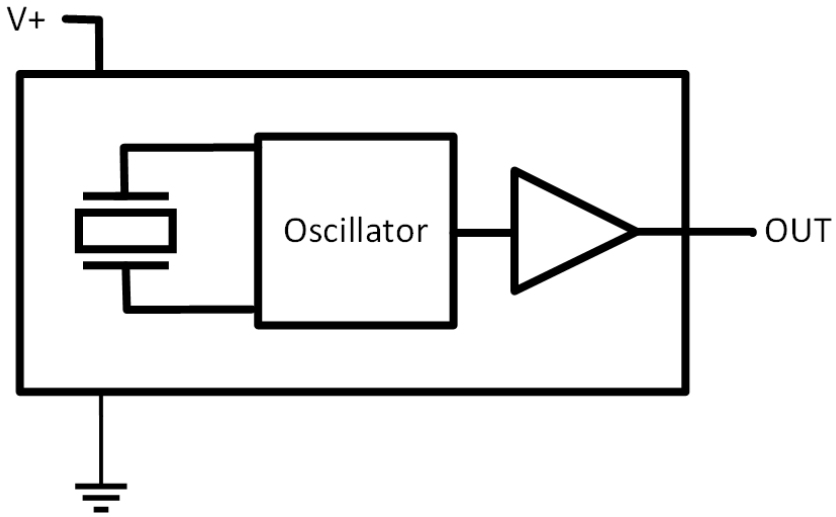
# PS-701

High shock SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: 10 to 85 °C
- 20000 g Shock, 0.2 ms Duration
- Phase Noise 10 Hz offset: -52 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -152 dBc/Hz @1000 MHz carrier




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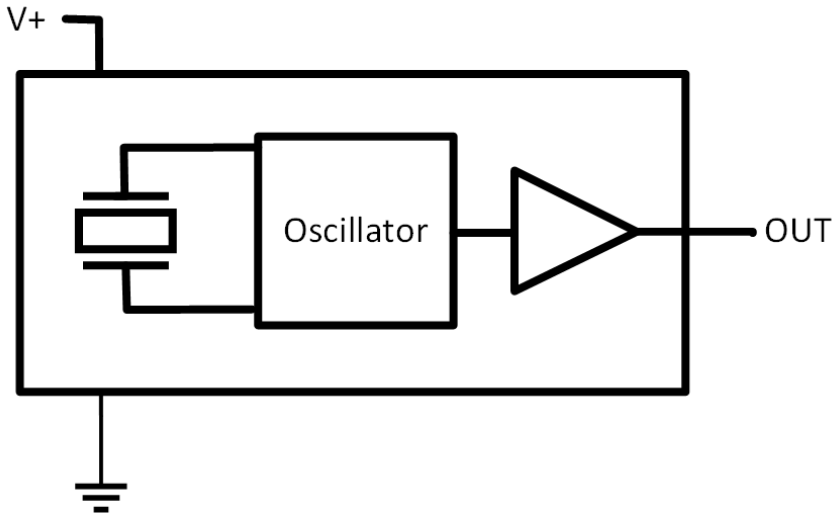
# PS-701

High shock SO

Online Datasheet

## Features:

- Frequency Range: 0.6 to 3 GHz
- Output: Sine, LVPECL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 250 mW
- Temperature Range: 10 to 85 °C
- 20000 g Shock, 0.2 ms Duration
- Phase Noise 10 Hz offset: -52 dBc/Hz @1000 MHz carrier
- Phase Noise 100 kHz offset: -152 dBc/Hz @1000 MHz carrier




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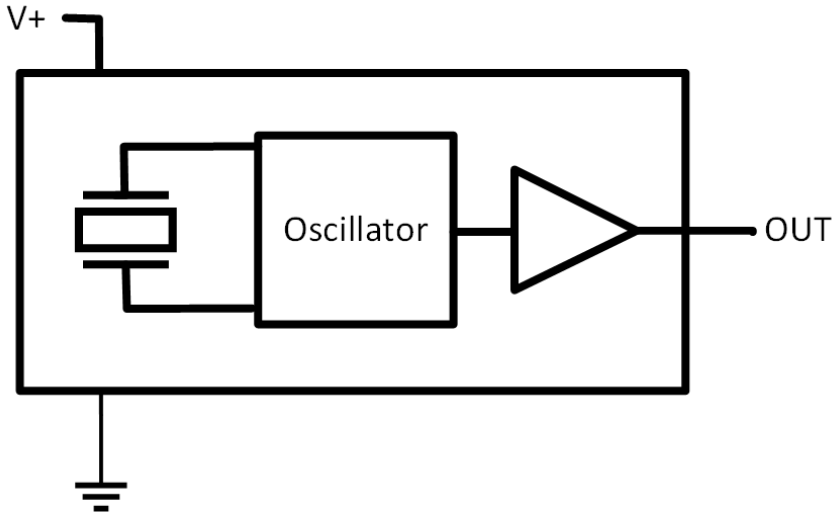
# PS-702

High frequency SO

Online Datasheet

## Features:

- Frequency Range: 0.15 to 1 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 231 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -46 dBc/Hz @622.08 MHz carrier
- Phase Noise 100 kHz offset: -134 dBc/Hz @622.08 MHz carrier




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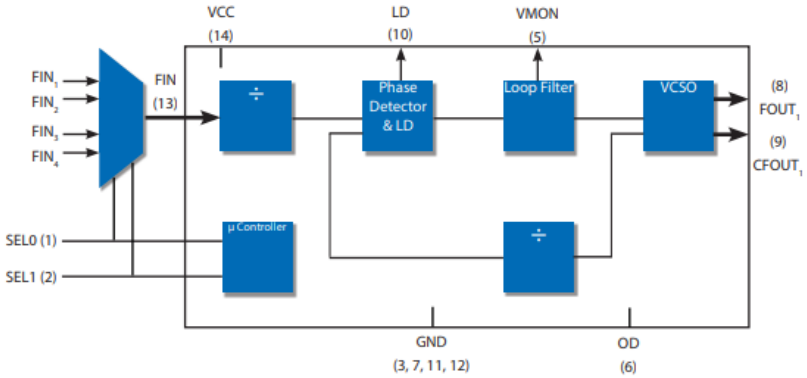
# FX-400

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 1.5 to 800 MHz
- Output: CMOS, LVPECL, LVDS
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 6 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 800 MHz
- Number of Inputs: 4
- Input Logic: CMOS, LVPECL, LVDS




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# FX-402

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 125 to 850 MHz
- Number of RF outputs: 2
- Output: LVPECL, LVDS
- Footprint: 20 x 13 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 1.5 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 0.008 to 400 MHz
- Number of Inputs: 4
- Input Logic: CMOS, LVPECL, LVDS

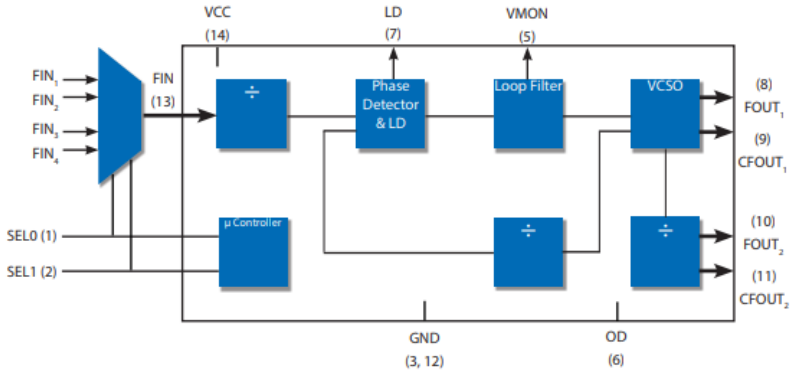



Figure 1. Functional block diagram

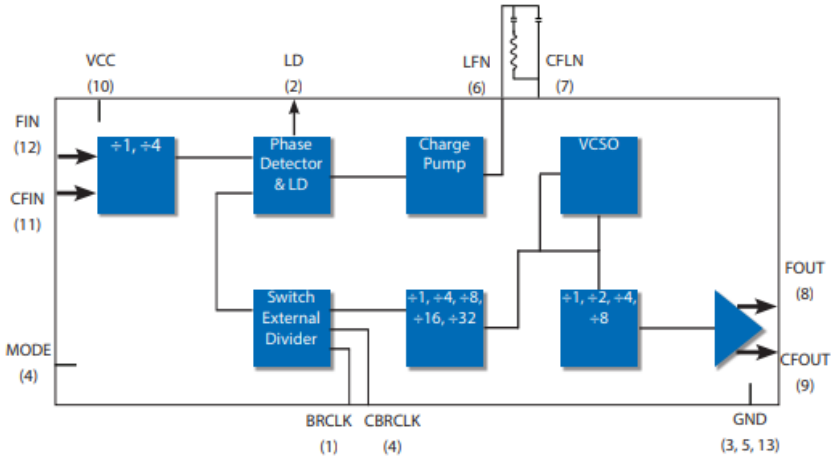
# FX-702

Frequency converter

Online Datasheet

## Features:

- Frequency Range: 0.062 to 1.2 GHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 6 mW
- Temperature Range: -40 to 85 °C
- Input Frequency: 1 to 1000 MHz
- Number of Inputs: 1
- Input Logic: CMOS, LVPECL, LVDS




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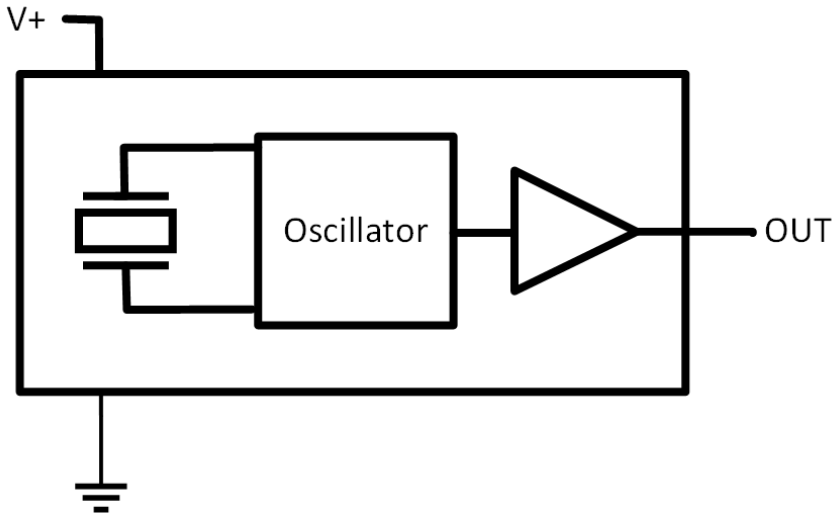
# M55310/09B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.4 to 60 MHz
- Output: TTL
- Footprint: Ø15.4 mm, through hole
- Supply Voltage: 5 V
- Power: 165 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 0.6 ms Duration
- 20 g Vibration




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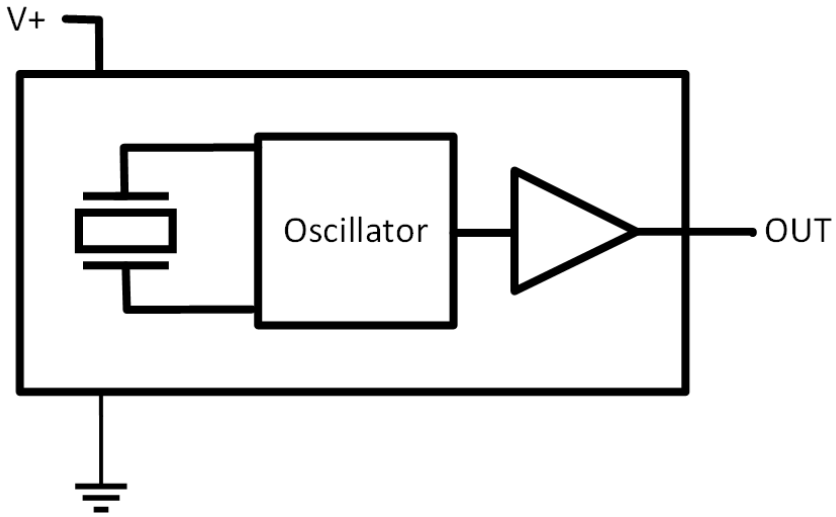
# M55310/16

Mil temp range and space XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.1 to 60 MHz
- Output: TTL
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 5 V
- Power: 1.5 W
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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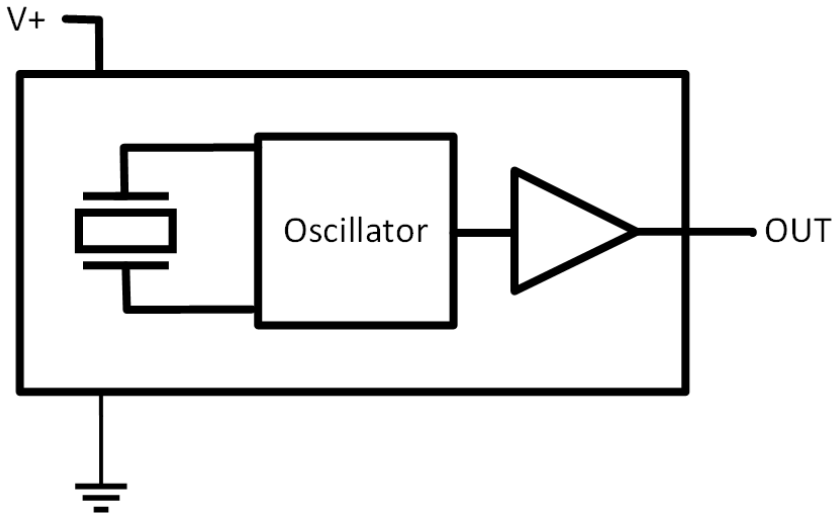
# M55310/19B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 60 MHz
- Output: TTL
- Footprint: 12 x 12 mm, surface mount
- Supply Voltage: 5 V
- Power: 350 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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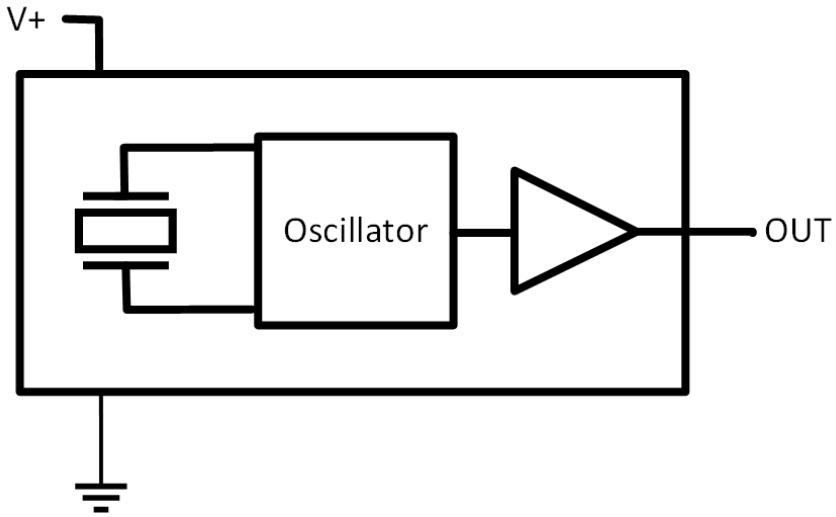
# M55310/21B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 60 MHz
- Output: TTL
- Footprint: 25 x 25 mm, surface mount
- Supply Voltage: 5 V
- Power: 150 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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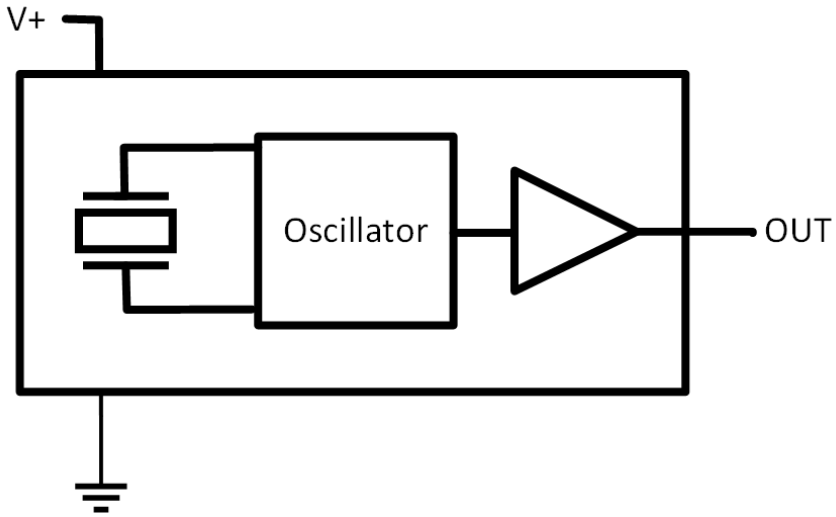
# M55310/26B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.01 to 65 MHz
- Output: CMOS
- Footprint: 20 x 13 mm, through hole
- Supply Voltage: 5 V
- Power: 50 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 5 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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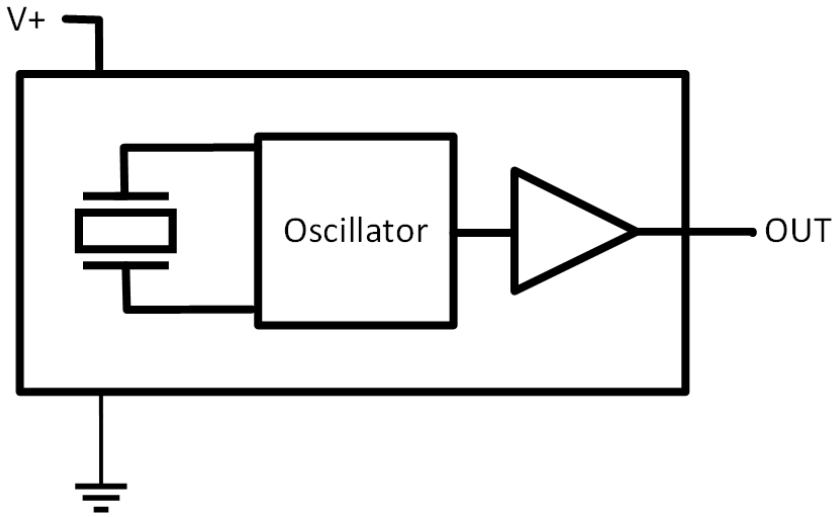
# M55310/27B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 85 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 5 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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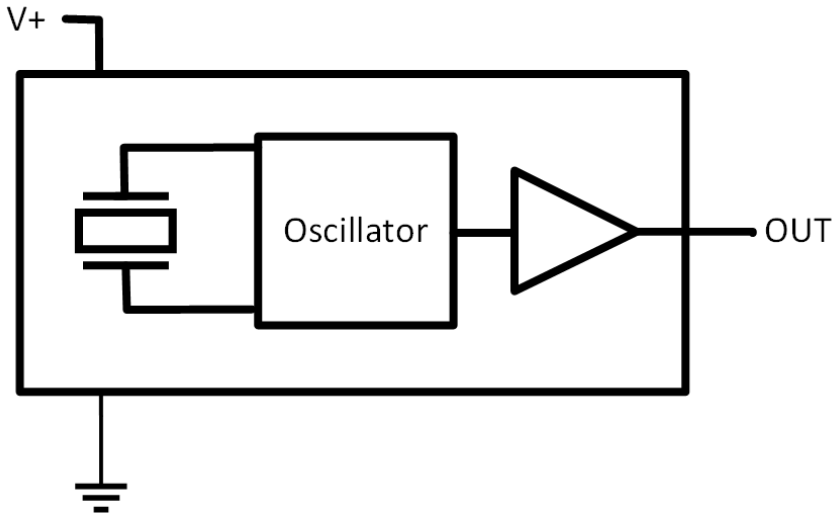
# M55310/28B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 1 to 85 MHz
- Output: TTL
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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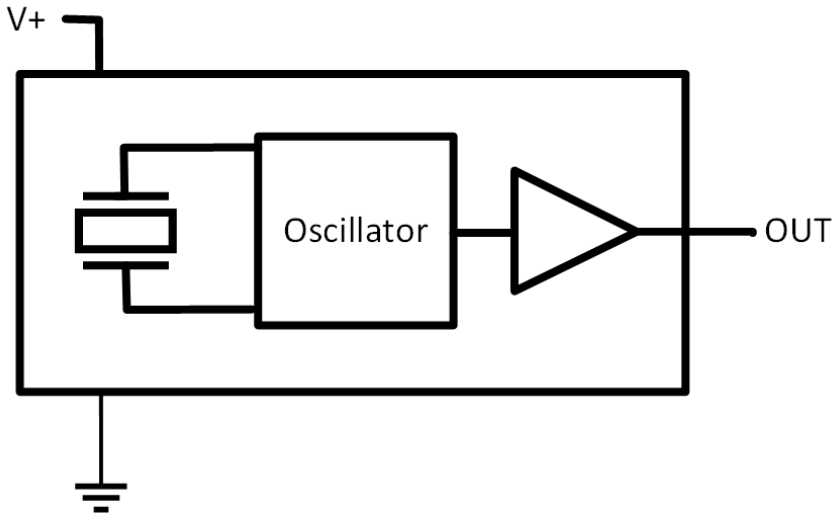
# M55310/30B

Mil temp range XO

Online Datasheet

## Features:

- DSCC QPL Part
- Target Market: Military
- Frequency Range: 0.45 to 85 MHz
- Output: CMOS
- Footprint: 14 x 9 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 75 mW
- Temperature Range: -55 to 125 °C
- Temperature Stabilty over Operating Temperature Range: 50 ppm
- Aging per Year: 10 ppm
- 100 g Shock, 6 ms Duration
- 20 g Vibration




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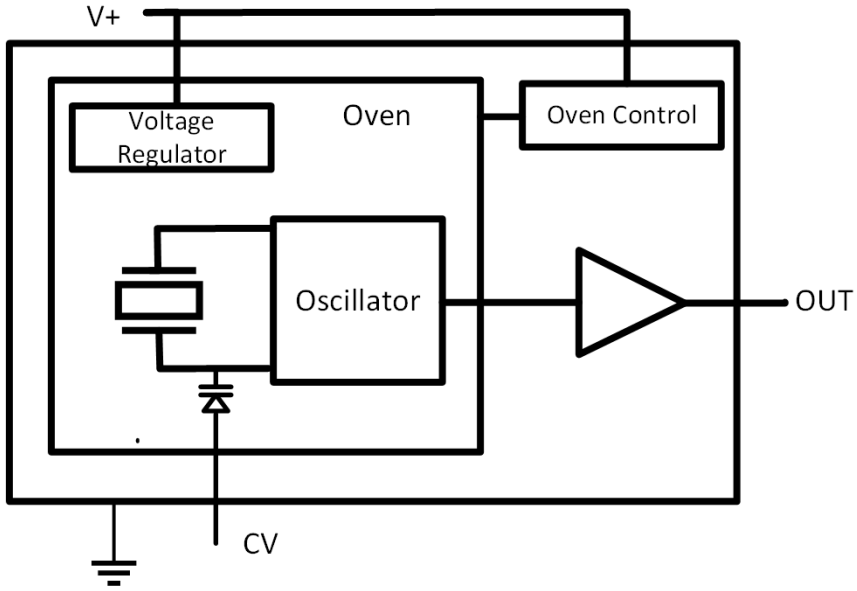
# EX-401

Low power OCXO

Online Datasheet

## Features:

- Frequency Range: 10 to 100 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 8 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.03 ppm
- Aging per Year: 0.1 ppm
- Phase Noise 10 Hz offset: -125 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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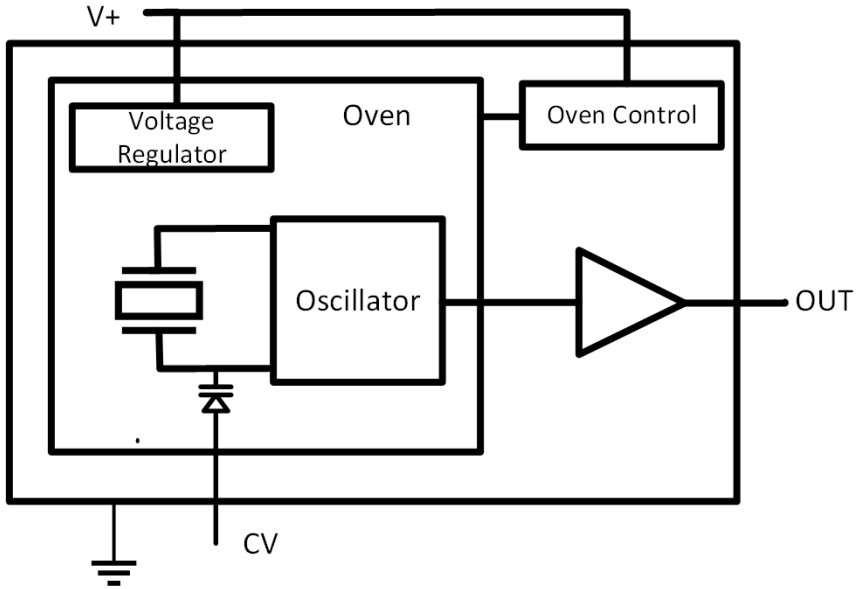
# EX-421

Low power OCXO

Online Datasheet

## Features:

- OCXO performance at ~ 1/5 the power
- Frequency Range: 10 to 100 MHz
- Output: CMOS, Sine
- Footprint: 13 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 12 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.03 ppm
- Aging per Year: 0.1 ppm
- Phase Noise 10 Hz offset: -125 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -165 dBc/Hz @10 MHz carrier




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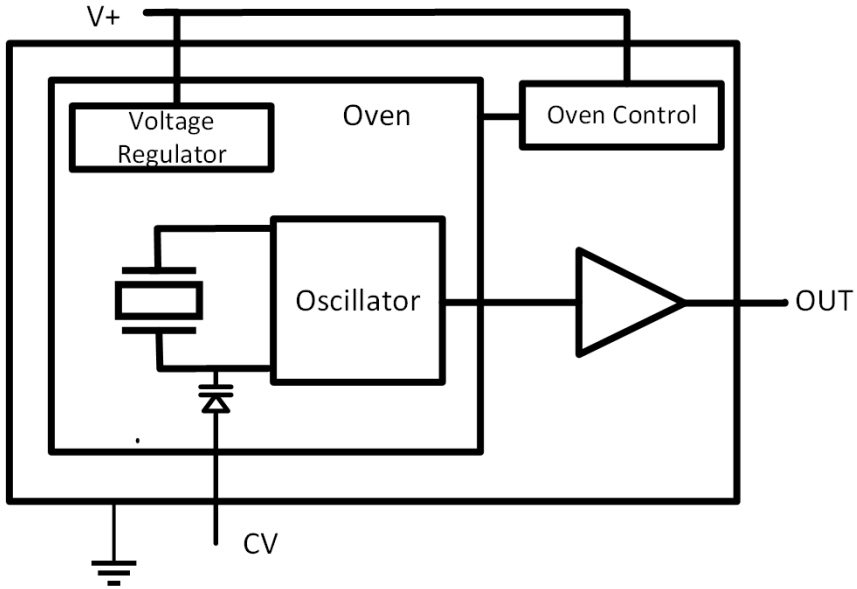
# OX-174

Low noise OCXO

Online Datasheet

## Features:

- High Stabilty, Low phase noise oscillator
- Frequency Range: 5 to 20 MHz
- Output: CMOS, Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 5, 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 10 ppb
- Aging per Year: 100 ppb




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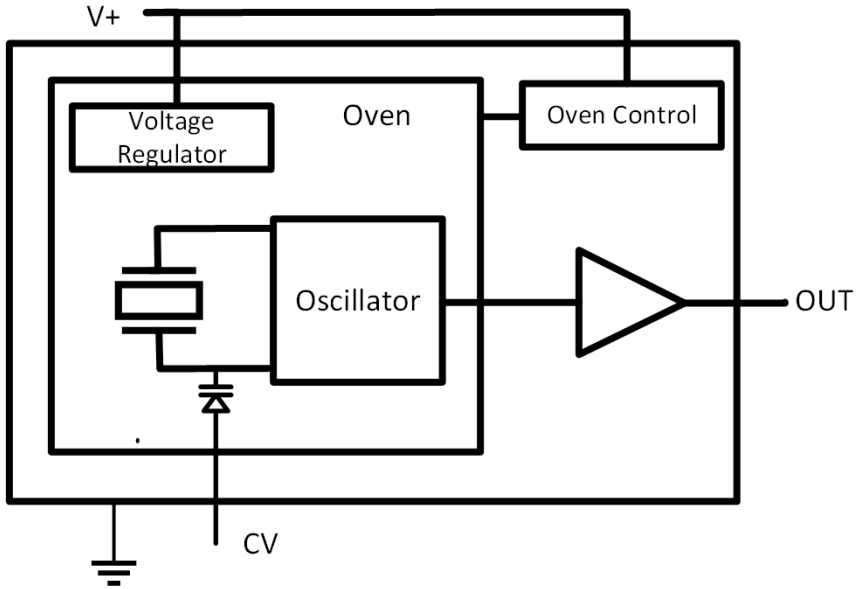
# OX-175

Low noise OCXO

Online Datasheet

## Features:

- High Stabilty, Low phase noise oscillator
- Frequency Range: 50 to 130 MHz
- Output: Sine
- Footprint: 38 x 28 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -176 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 100 ppb
- Aging per Year: 200 ppb




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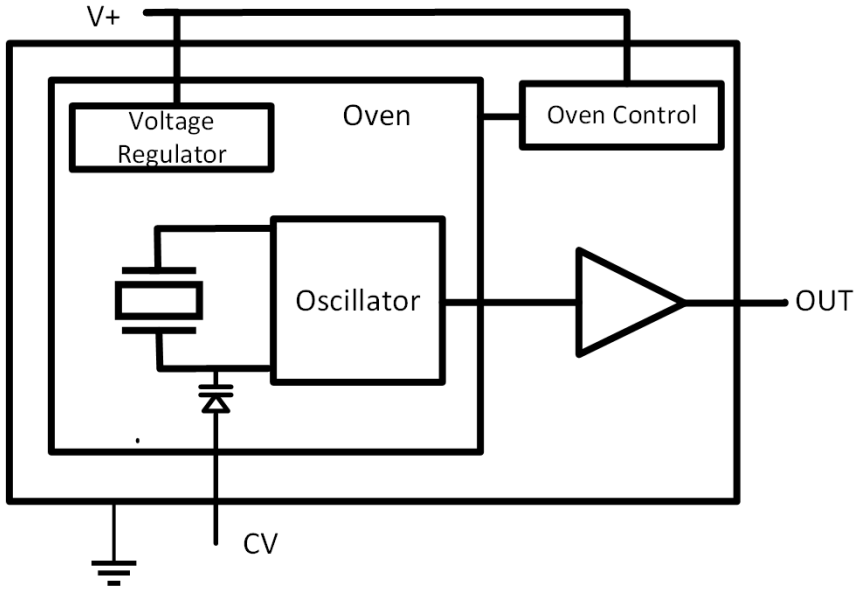
# OX-204

Low noise OCXO

Online Datasheet

## Features:

- Low Phase Noise Oscillator
- Target Market: Test and Measurement
- Frequency Range: 10 to 20 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 5, 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -140 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 20 ppb
- Aging per Year: 30 ppb




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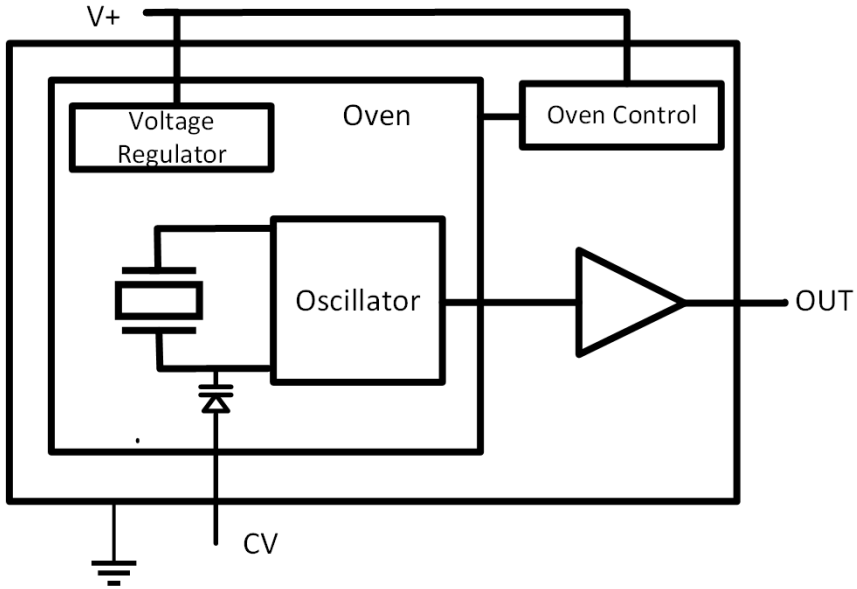
# OX-205

Low noise OCXO

Online Datasheet

## Features:

- Low Phase Noise Oscillator
- Target Market: Test and Measurement
- Frequency Range: 80 to 120 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -45 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -178 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 200 ppb
- Aging per Year: 200 ppb





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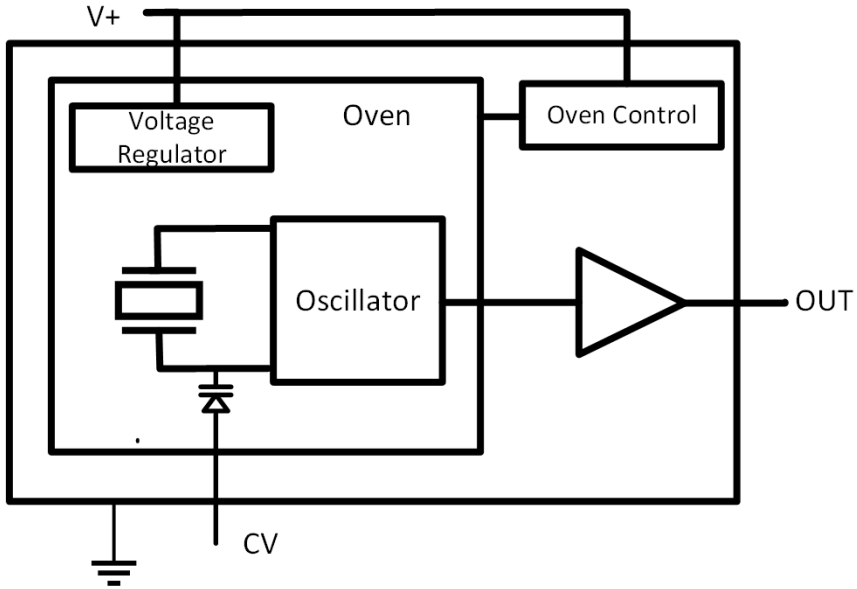
# OX-209

Low noise OCXO

Online Datasheet

## Features:

- Frequency Range: 20 to 35 MHz
- Output: Sine
- Footprint: 25 x 25 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -115 dBc/Hz @20 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @20 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 50 ppb
- Aging per Year: 100 ppb




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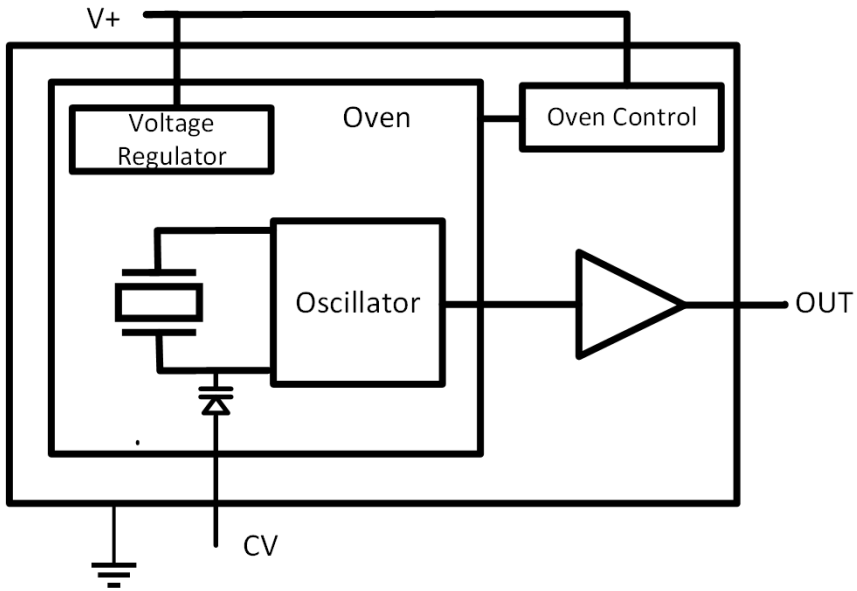
# OX-304

Low noise OCXO

Online Datasheet

## Features:

- smallest form factor low noise oscillator
- Target Market: Test and Measurement
- Frequency Range: 10 to 20 MHz
- Output: Sine
- Footprint: 20 x 20 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -173 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 20 ppb
- Aging per Year: 30 ppb




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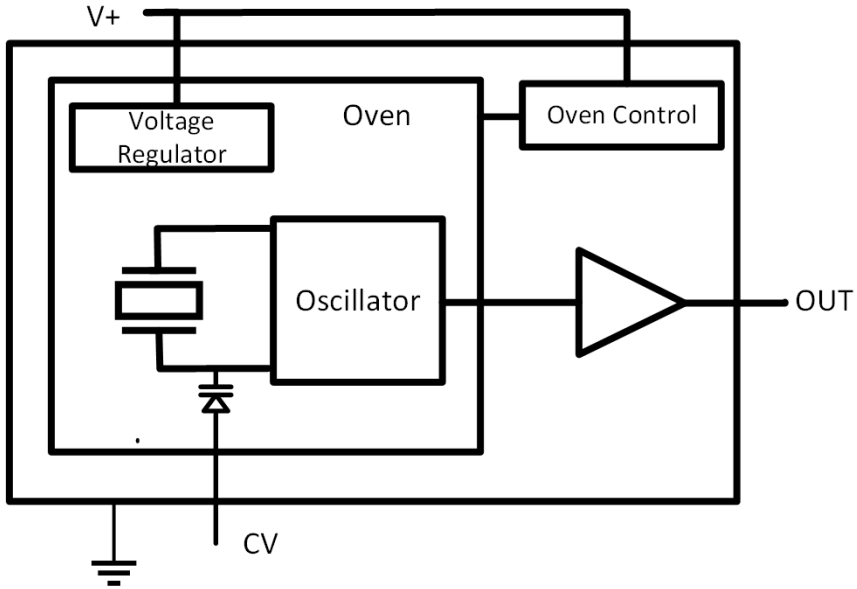
# OX-305

Low noise OCXO

Online Datasheet

## Features:

- smallest form factor low noise oscillator
- Target Market: Test and Measurement
- Frequency Range: 80 to 120 MHz
- 100 MHz
- Standard Frequency: 100 MHz
- Output: Sine
- Footprint: 20 x 20 mm, through hole, surface mount
- Supply Voltage: 12 V
- Power: 1.8 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -105 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -178 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 200 ppb
- Aging per Year: 200 ppb




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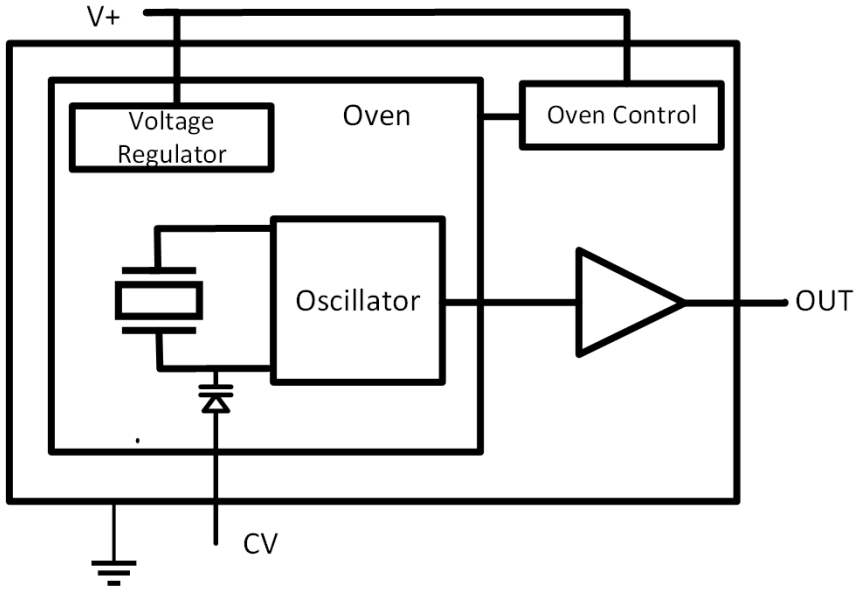
# OX-405

Low noise OCXO

Online Datasheet

## Features:

- low noise, small factor OCXO
- Frequency Range: 80 to 120 MHz
- Output: CMOS, Sine
- Footprint: 20 x 13 mm, through hole, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 1 W
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -95 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -160 dBc/Hz @100 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 50 ppb
- Aging per Year: 300 ppb




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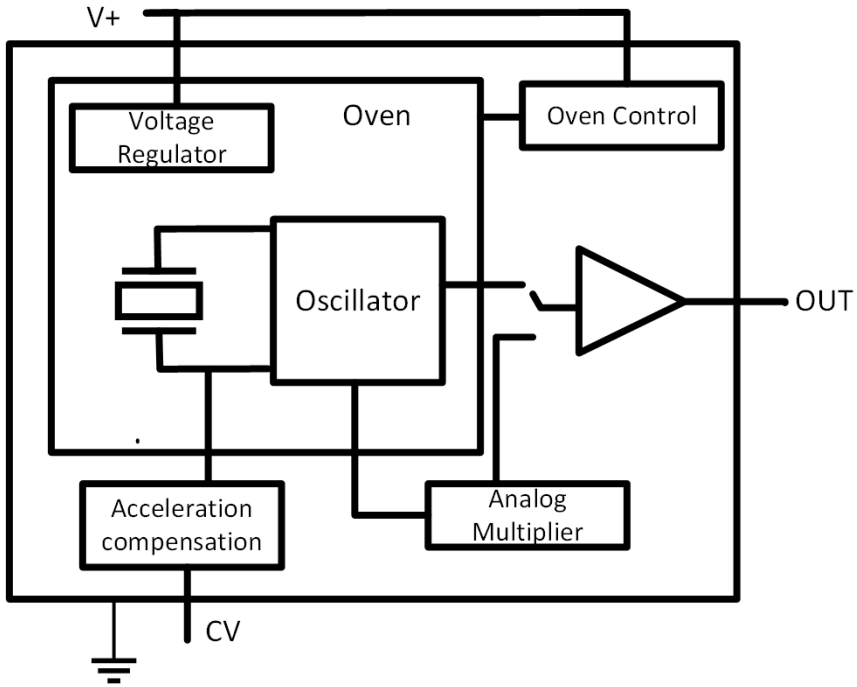
# OX-043

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 8 to 15 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.02 ppb/g
- Phase Noise 10 Hz offset: -135 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -170 dBc/Hz @10 MHz carrier




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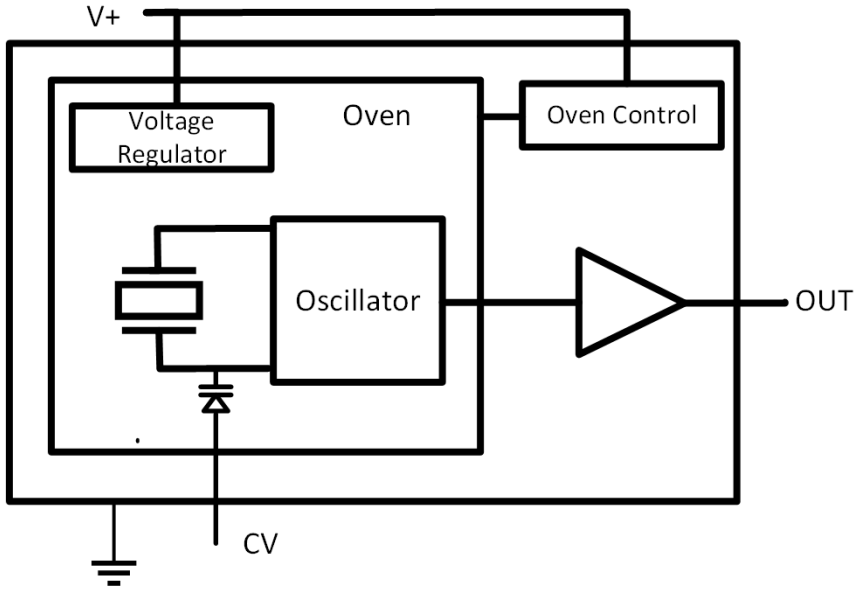
# OX-045

Low noise OCXO

Online Datasheet

## Features:

- Low close in phase noise with excellent daily aging
- Target Market: Test and Measurement
- 10 MHz
- Standard Frequency: 10 MHz
- Output: Sine
- Footprint: 51 x 51 mm, through hole
- Supply Voltage: 12, 15 V
- Power: 2 W
- Temperature Range: -40 to 70 °C
- Phase Noise 10 Hz offset: -140 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -163 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 5 ppb




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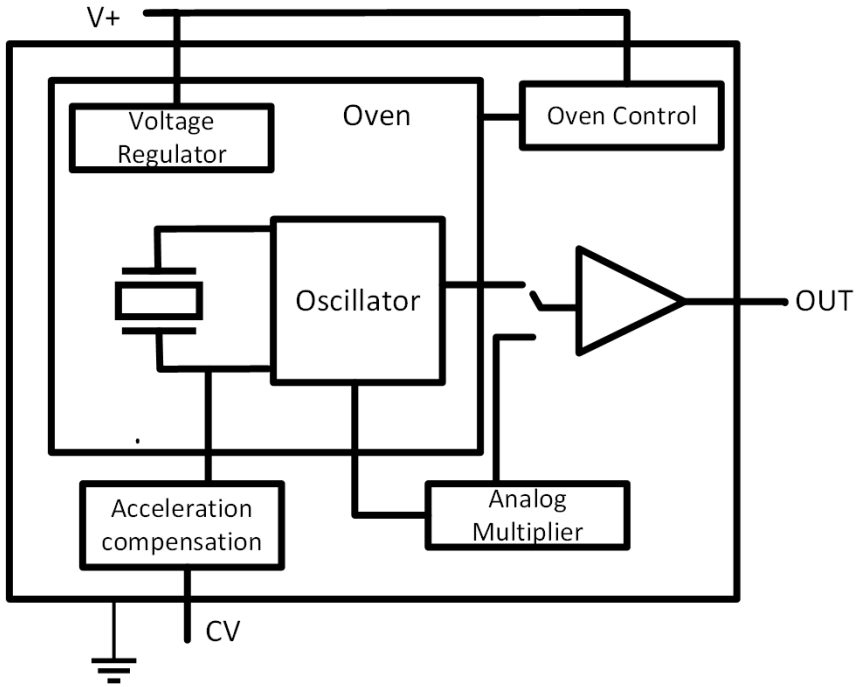
# OX-046

Low g OCXO

Online Datasheet

## Features:

- Low g, Low Phase Noise OCXO with active cancellation technology
- Target Market: Military
- Frequency Range: 50 to 250 MHz
- Output: Sine
- Footprint: 51 x 51 mm, chassis
- Supply Voltage: 12, 15 V
- Power: 3 W
- Temperature Range: -40 to 85 °C
- g-Sensitivity: 0.05 ppb/g
- Phase Noise 10 Hz offset: -100 dBc/Hz @100 MHz carrier
- Phase Noise 100 kHz offset: -175 dBc/Hz @100 MHz carrier




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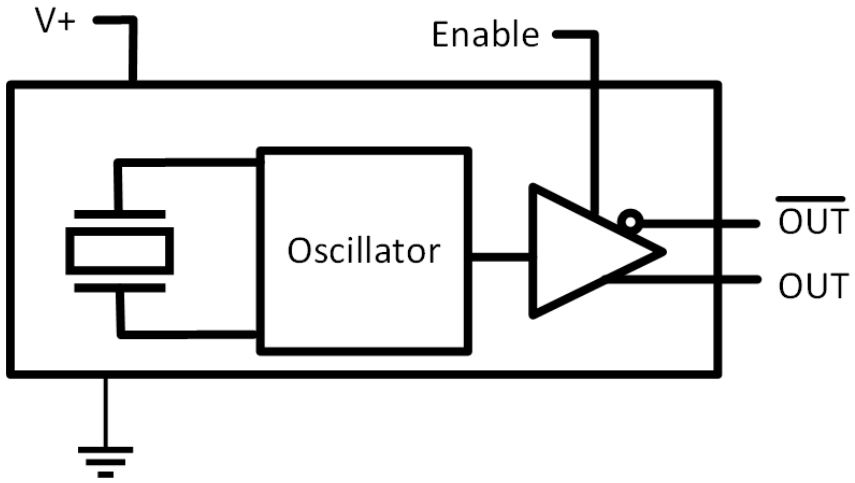
# VC-709

Low power XO

Online Datasheet

## Features:

- Frequency Range: 13.5 to 220 MHz
- Output: LVPECL, LVDS, HCSL
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3, 3.3 V
- Power: 105 mW
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 2 ppm
- 12k to 20 MHz jitter: 150 fs-rms @ 156.25 MHz




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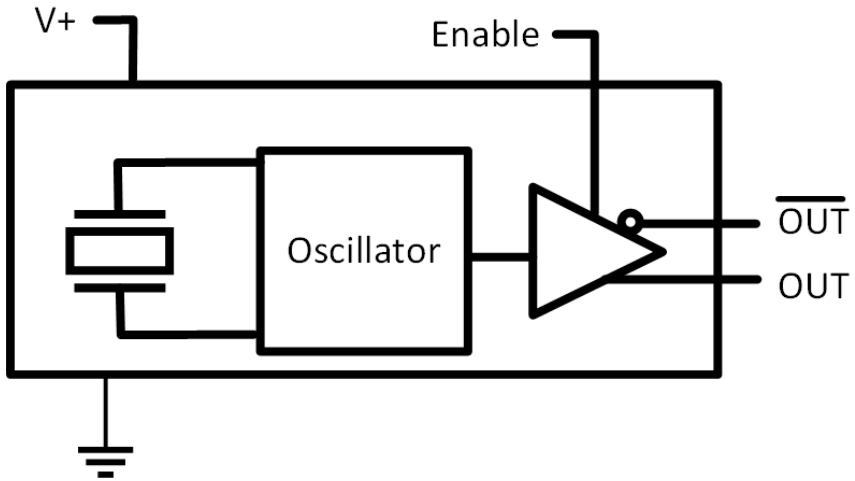
# VC-711

Low jitter XO

Online Datasheet

## Features:

- Frequency Range: 10 to 170 MHz
- Output: LVPECL, LVDS
- Footprint: 7 x 5 mm, surface mount
- Supply Voltage: 2.5, 3.3 V
- Power: 152.5 mW
- Temperature Range: -40 to 105 °C
- Temperature Stabilty over Operating Temperature Range: 100 ppm
- 12k to 20 MHz jitter: 100 fs-rms @ 156.25 MHz




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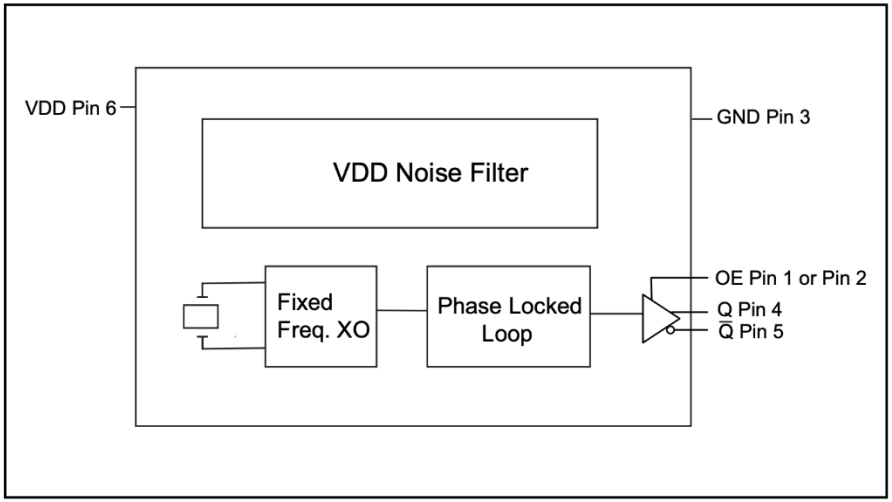
# MX55/57

Ultra-low Jitter Industry Standard Crystal Oscillators

Online Datasheet

## Features:

- Typical phase jitter: 200fs
- Supports 1 output
- Integrated crystal
- 2.5MHz to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard package:
  - MX55 - 3.2mm x 5mm
  - MX57 - 5mm x 7mm




| Part Number | Output Frequency (MHz) | Output Format | Frequency Stability (ppm) | Jitter (typ) (ps RMS) | Supply current (mA) | Supply voltage (V) | Temp. Range (°C) | Package size (mmxmm) | Custom Configuration |
|---|---|---|---|---|---|---|---|---|---|
| MX57 | <840 | LVCMOS LVPECL LVDS HSCL | ±50 | 0.2 | 70 | 2.25 to 3.63 | -20 to 70 -40 to 85 | 7.0x5.0 6L | ClockWorks Web tool |
| MX55 | <840 | | | | | | | 5.0x3.2 6L | |
| MX85 | <840 | | | 0.2 | 90 | | | 7.0x5.0 38-PIN LGA | |


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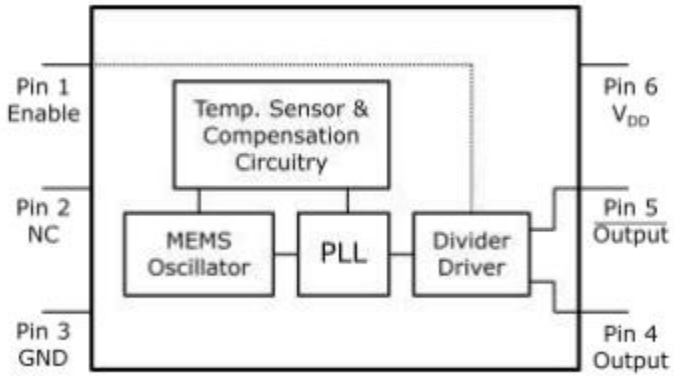
# DSC1101/1121

High performance oscillators

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 170MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function





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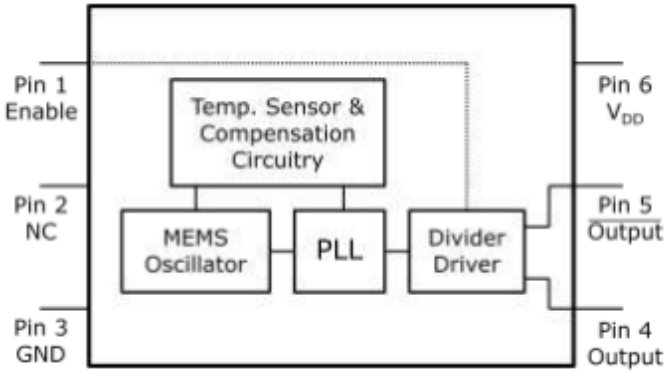
# DSC1102/1122

LVPECL

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVDS & HCSL Versions Available




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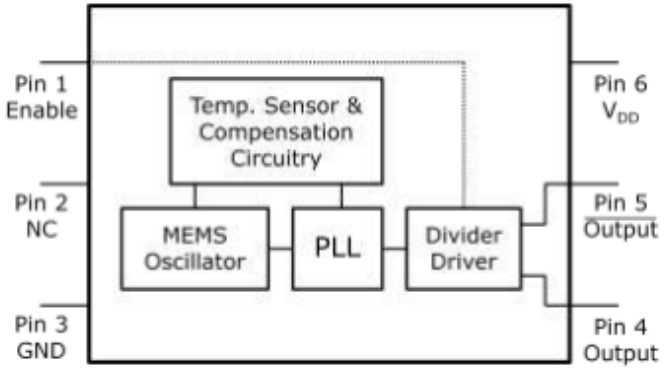
# DSC1103/1123

LVDS

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range:
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints:
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVPECL & HCSL Versions Available




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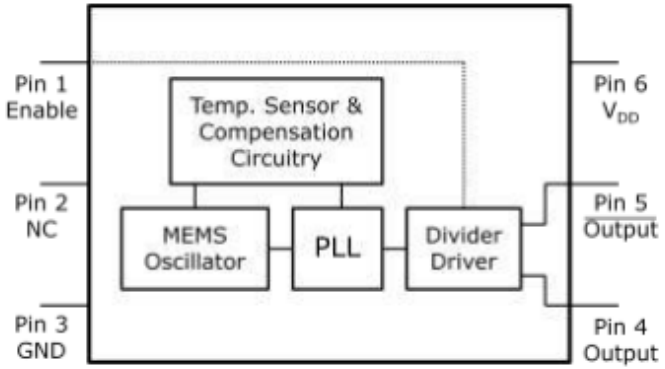
# DSC1104/1124

HSCL

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range
  - Industrial: -40°C to 85°C
  - Extended commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- Wide Freq. Range: 2.3 to 460MHz
- Small Industry Standard Footprints
  - 2.5mm x 2.0mm3.2mm x 2.5mm,
  - 5.0mm x 3.2mm, & 7.0mm x 5.0mm
- Excellent Shock & Vibration Immunity
  - Qualified to MIL-STD-883
- High Reliability
  - 20x better MTF than quartz oscillators
- Low Current Consumption
- Supply Range of 2.25V to 3.6V
- Standby & Output Enable Function
- LVDS & LVPECL Versions Available




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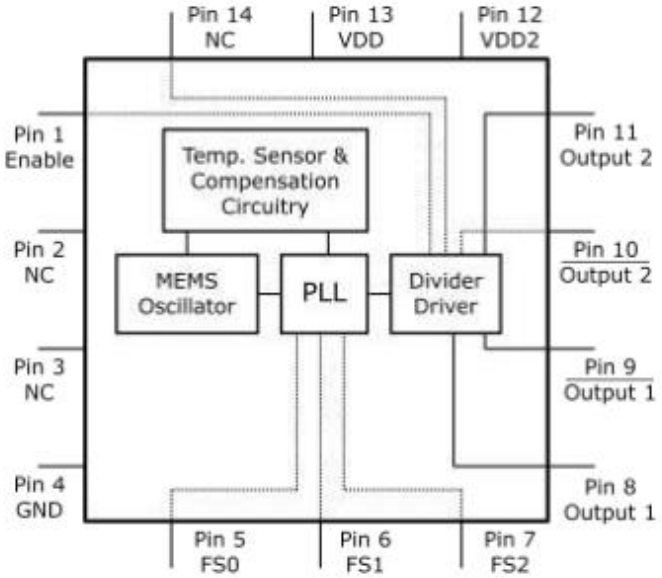
# DSC2XXX

**Low-Jitter Configurable Dual LVDS Oscillator**

Online Datasheet

## Features:

- Low RMS Phase Jitter: 1.5 ps (typ.)
- High Stability: ±10, ±25, ±50 ppm
- Wide Temperature Range: -20°C to 105°C
- High Supply Noise Rejection: -50dBc
- Two configurable independent outputs:
- LVCMOS, LVPECL, LVDS, HCSL
- Pin-Selectable Configurations:
- 3-bit Output Frequency Combinations
- Short Lead Times: 2 Weeks
- Wide Freq. Range: 2.3 to 460MHz
- Miniature Footprint of 3.2mm x 2.5mm
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
    - 20x better MTF than quartz oscillators
- Supply Range of 2.25V to 3.6V
- DSC20XX supports pin control
- DSC21xx supports I²C interface
- DSC22XX supports SPI interface





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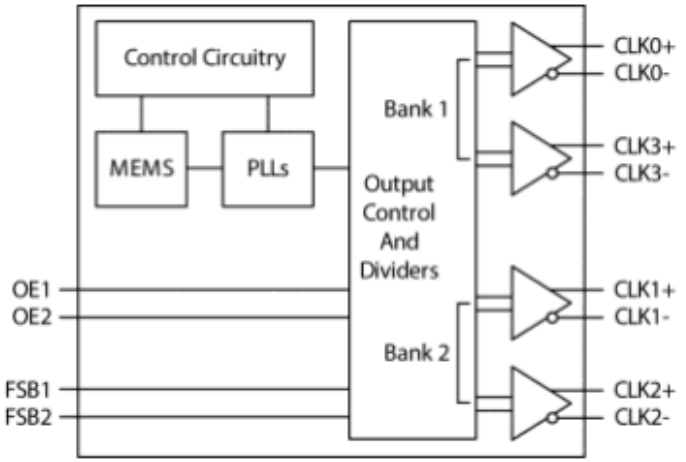
# DSC400

Configurable Four Output, Low Jitter Crystal-less™ Clock Generator

Online Datasheet

## Features:

- Low RMS Phase Jitter: <1ps (typ.)
- High Stability: ±25ppm, ±50ppm
- Wide Temperature Range:
  - Ext. commercial: -20°C to +70°C
  - Industrial: -40°C to +85°C
- High Supply Noise Rejection: -50dBc
- Wide frequency range: 2.3MHz to 460MHz
- 20-pin QFN footprint (5.0mm x 3.2mm)
- Excellent shock and vibration immunity:
  - Qualified to MIL-STD-883
- Four format-configurable outputs:
  - LVPECL, LVDS, HCSL, LVCMOS
- Available pin-selectable frequency table:
  - 1 pin per bank for two frequency sets
- High Reliability: 20x better MTF than quartz -- based devices
- Wide supply range of 2.25V to 3.6V
- AEC-Q100 Automotive qualified





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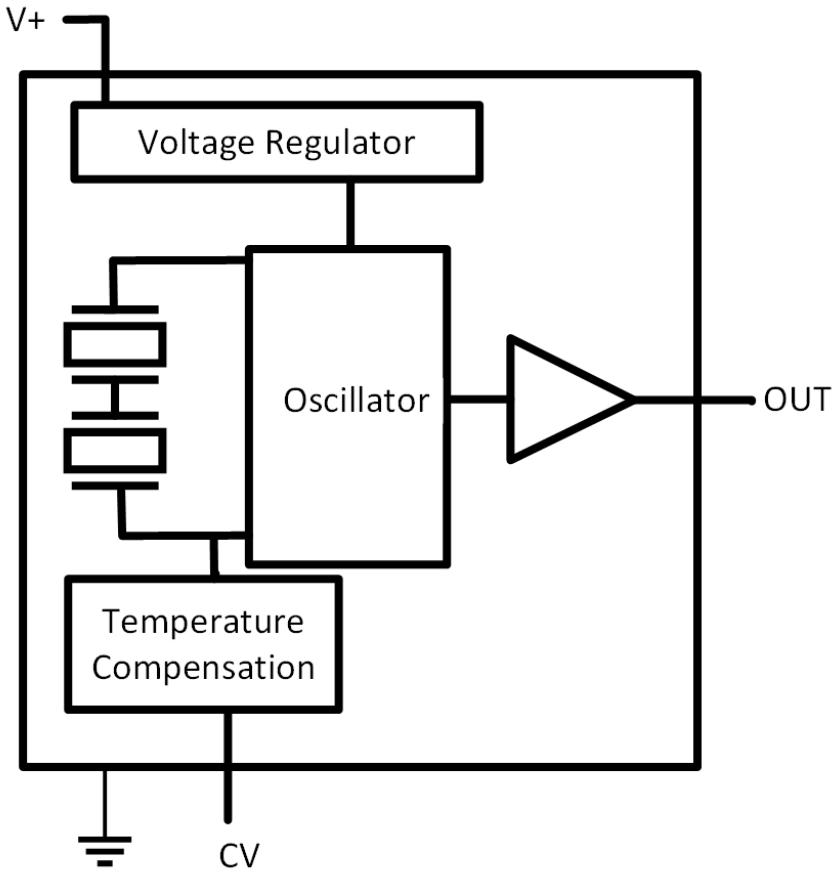
# TX-321

Low noise TCXO

Online Datasheet

## Features:

- Lowest Noise TCXO in market
- Target Market: Test and Measurement
- Frequency Range: 5 to 50 MHz
- Output: CMOS
- Footprint: 23 x 18 mm, surface mount
- Supply Voltage: 3.3, 5 V
- Power: 82.5 mW
- Temperature Range: -40 to 85 °C
- Phase Noise 10 Hz offset: -116 dBc/Hz @10 MHz carrier
- Phase Noise 100 kHz offset: -168 dBc/Hz @10 MHz carrier
- Temperature Stabilty over Operating Temperature Range: 1 ppm
- g-Sensitivity: 0.2 ppb/g




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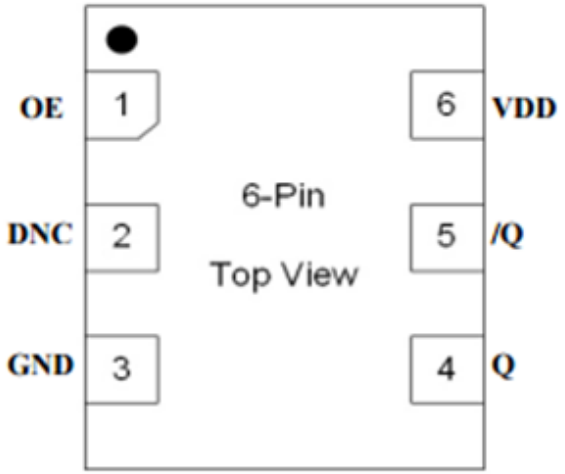
# MXT57

High-Frequency TCXO Oscillator

Online Datasheet

## Features:

- Supports 1 LVCMOS/LVPECL/LVDS/HSCL output
- Typical phase jitter: 0.2ps
- Guaranteed ±2.5ppm over -40°C to +85°C
- ±5ppm total frequency stability
- Integrated crystal
- 10MHz to 850MHz
- Programmable output buffers
- O/E Pin selectable
- Industry standard 6-Pin 7mm x 5mm LGA package





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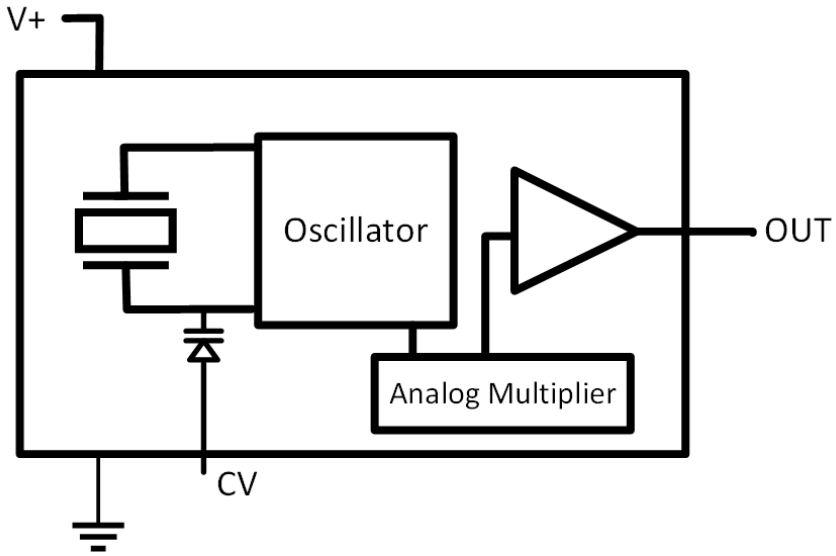
# VS-800

Single frequency VCSO

Online Datasheet

## Features:

- Smallest form factor, High Frequency VCSO in market
- Frequency Range: 0.8 to 3.2 GHz
- Output: Sine, Balanced or Differential Sinewave
- Footprint: 5 x 3.2 mm, surface mount
- Supply Voltage: 3.3 V
- Power: 250 mW
- Temperature Range: -40 to 85 °C
- Absolute Pull Range: 20 ppm
- Phase Noise 1kHz offset: -95 dBc/Hz @2949.12 MHz carrier
- Phase Noise 1 MHz offset: -162 dBc/Hz @2949.12MHz carrier




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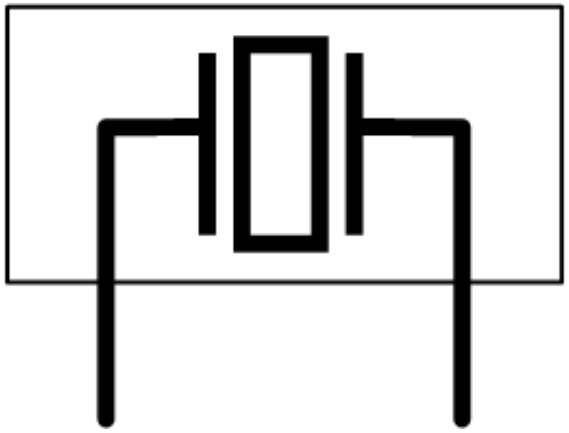
# VXA1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 1.536 to 150 MHz
- Footprint: 11.5 x 5.0 mm, through hole
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 25 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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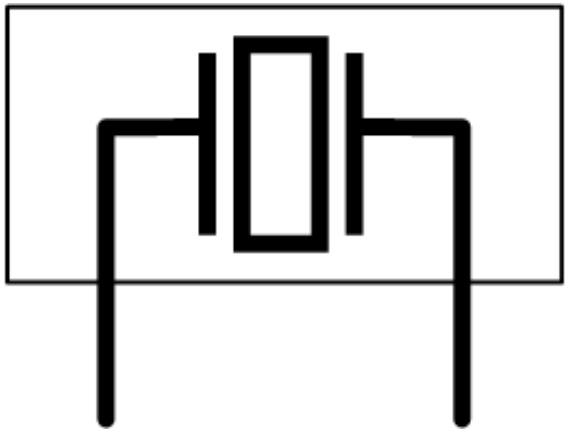
# VXA4

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 3.5 to 100 MHz
- Footprint: 10.9 x 4.5 mm, through hole
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 30 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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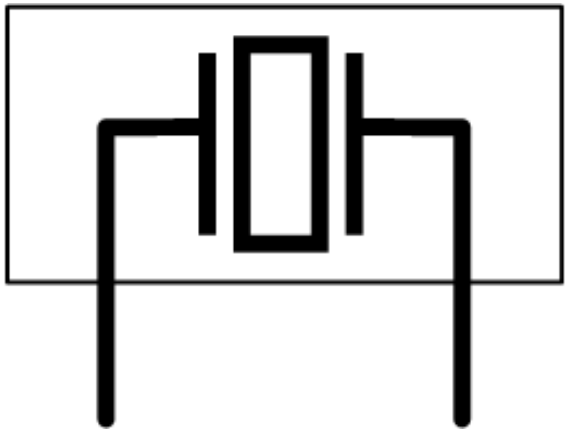
# VXA7

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 1.8432 to 150 MHz
- Footprint: 13.5 x 11.5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 25 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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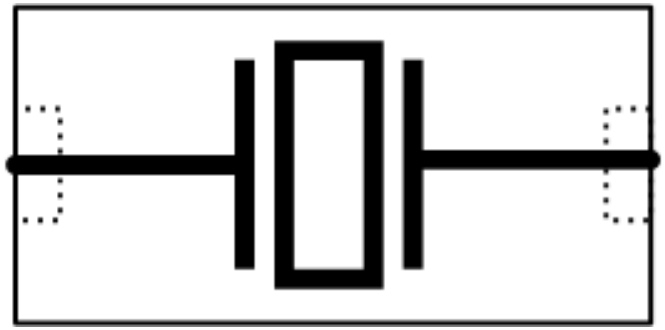
# VXB1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 3.5 to 75 MHz
- Footprint: 11.5 x 5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 25 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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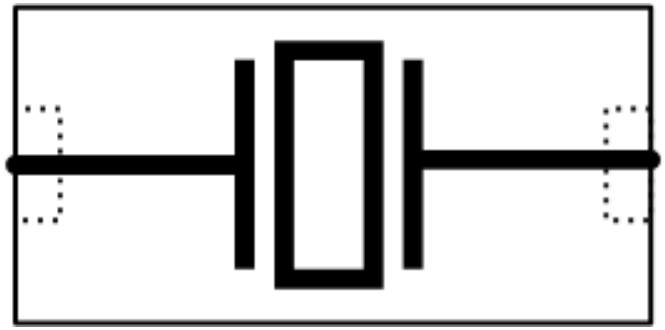
# VXB2

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 3.5 to 75 MHz
- Footprint: 11.5 x 5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 25 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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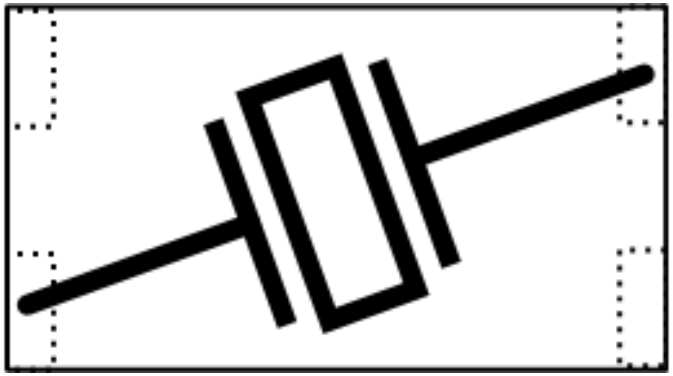
# VXC1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Footprint: 7 x 5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 30 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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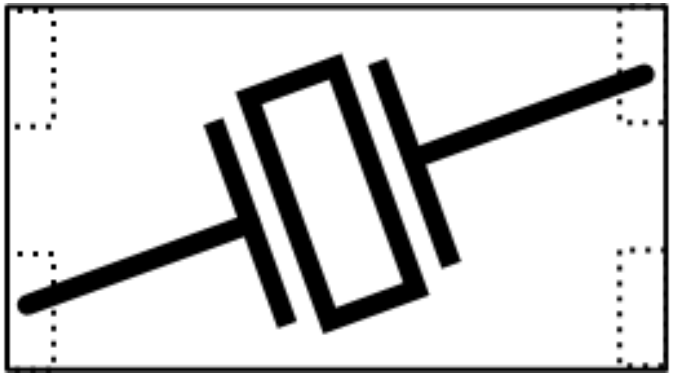
# VXC4

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 8 to 100 MHz
- Footprint: 7 x 5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 30 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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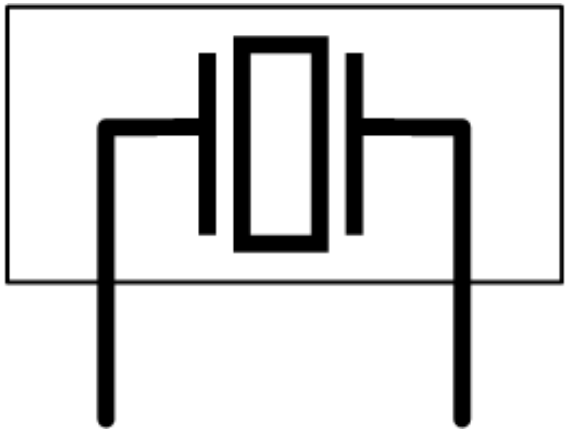
# VXD1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 7 to 200 MHz
- Footprint: 7.9 x 3.2 mm, through hole
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 25 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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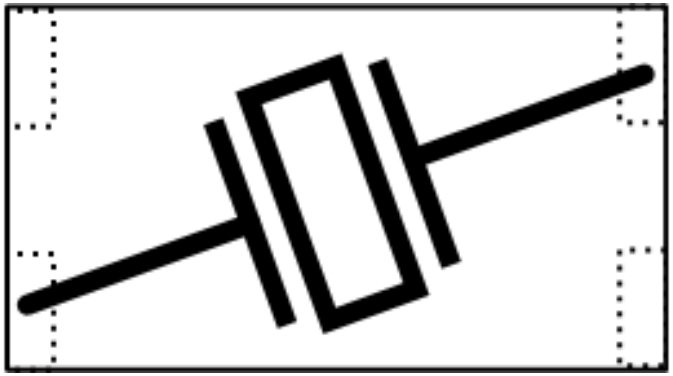
# VXE4

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 9.68 to 100 MHz
- Footprint: 6 x 3.5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 30 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



Vectron™ | a Microchip company

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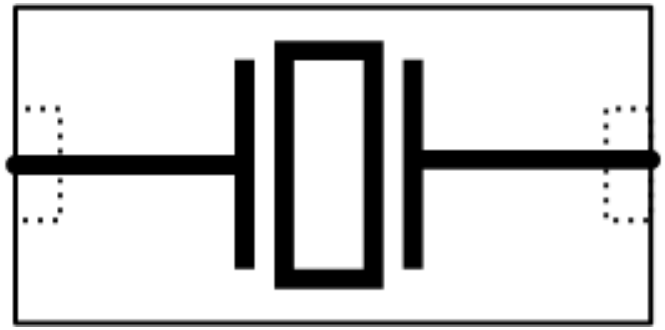
# VXM1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 8 to 60 MHz
- Footprint: 5 x 3.2 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 50 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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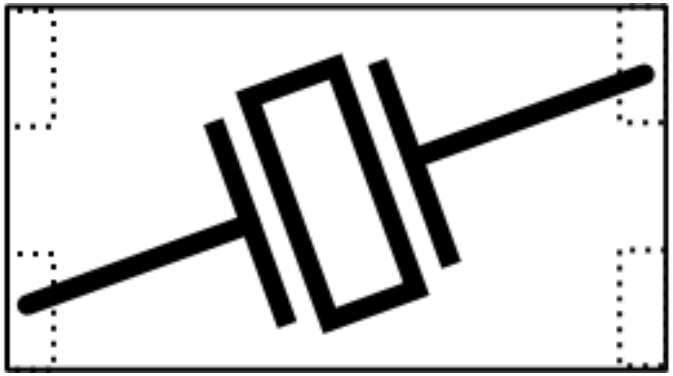
# VXM2

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 8 to 150 MHz
- Footprint: 5 x 3.2 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 50 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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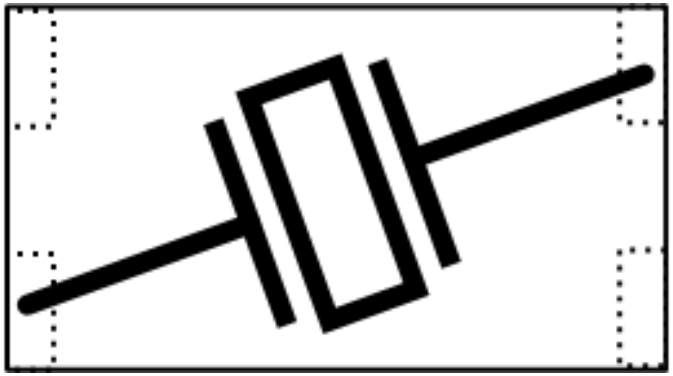
# VXM4

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 12 to 60 MHz
- Footprint: 4 x 2.5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 50 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



Vectron™ | a Microchip company

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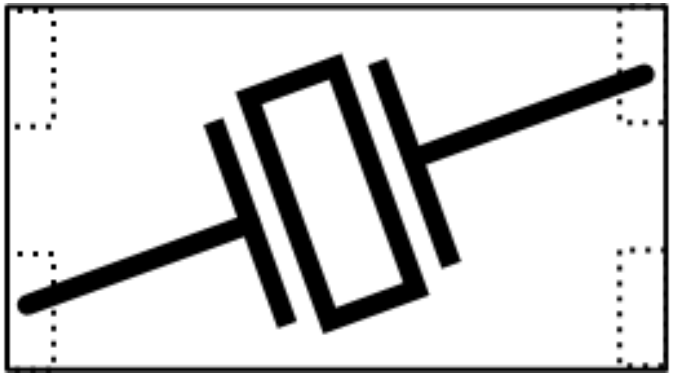
# VXM5

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 8 to 54 MHz
- Footprint: 5 x 3.2 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental, 3rd OT
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 40 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



Vectron™ | a Microchip company

<< BACK

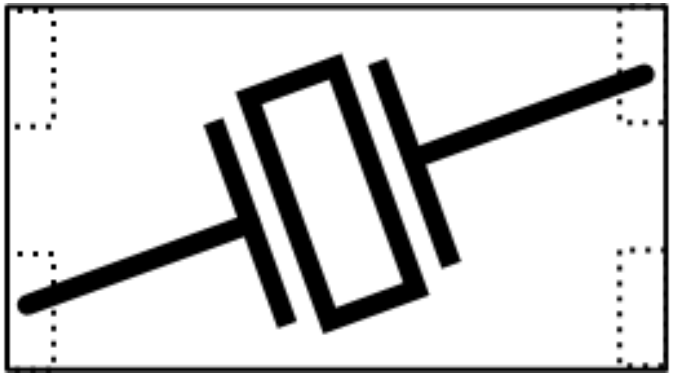
# VXM7

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 12 to 60 MHz
- Footprint: 3.2 x 2.5 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 60 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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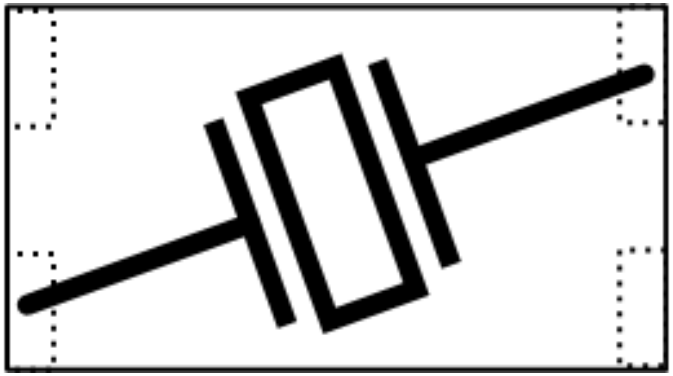
# VXM8

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 14 to 60 MHz
- Footprint: 2.5 x 2 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 60 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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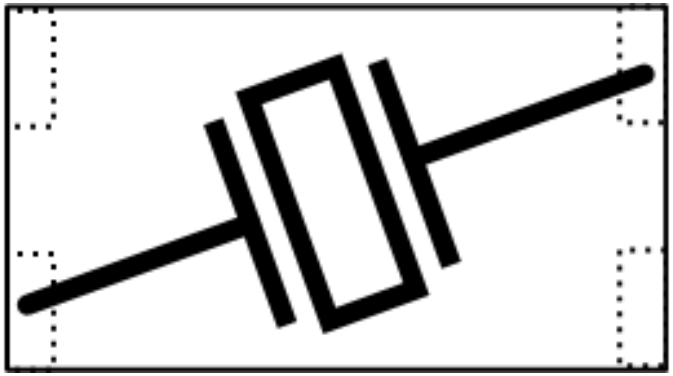
# VXM9

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 16 to 60 MHz
- Footprint: 2 x 1.6 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 100 Ohms
- Temperature Stabilty 0 to 70°C: 10 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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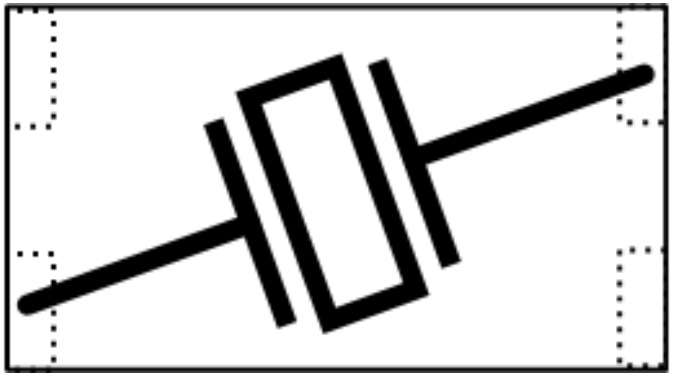
# VXN1

Precision crystal

Online Datasheet

## Features:

- Frequency Range: 24 to 54 MHz
- Footprint: 1.6 x 1.2 mm, surface mount
- Temperature Range: -40 to 85 °C
- Cload max: 32 pF
- Co max: 5 pF
- Mode: fundamental
- Maximum Drive Level: 100 uW
- ESR at 24 MHz: 100 Ohms
- Temperature Stabilty 0 to 70°C: 15 ppm
- Temperature Stabilty -40 to 85°C: 50 ppm



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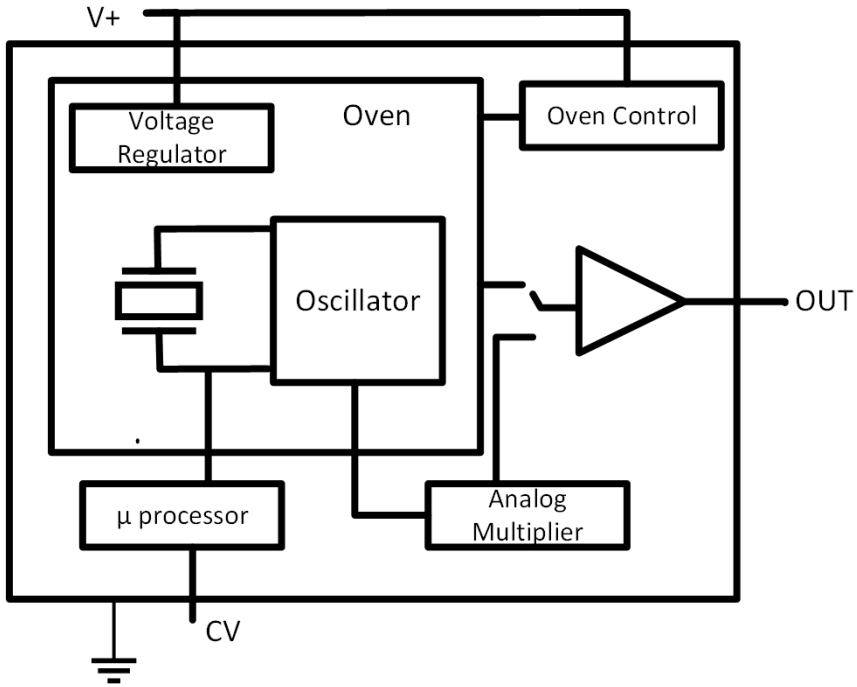
# MX-041

Microprocessor corrected OCXO

Online Datasheet

## Features:

- Microprocessor based temperature correction
- Frequency Range: 5 to 15 MHz
- Standard Frequencies: 5, 10 MHz
- Output: CMOS, Sine
- Footprint: 51 x 51 mm, through hole
- Supply Voltage: 5, 12 V
- Power: 2 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.6 ppb
- Aging per Day: 0.1 ppb




Vectron™ | a Microchip company

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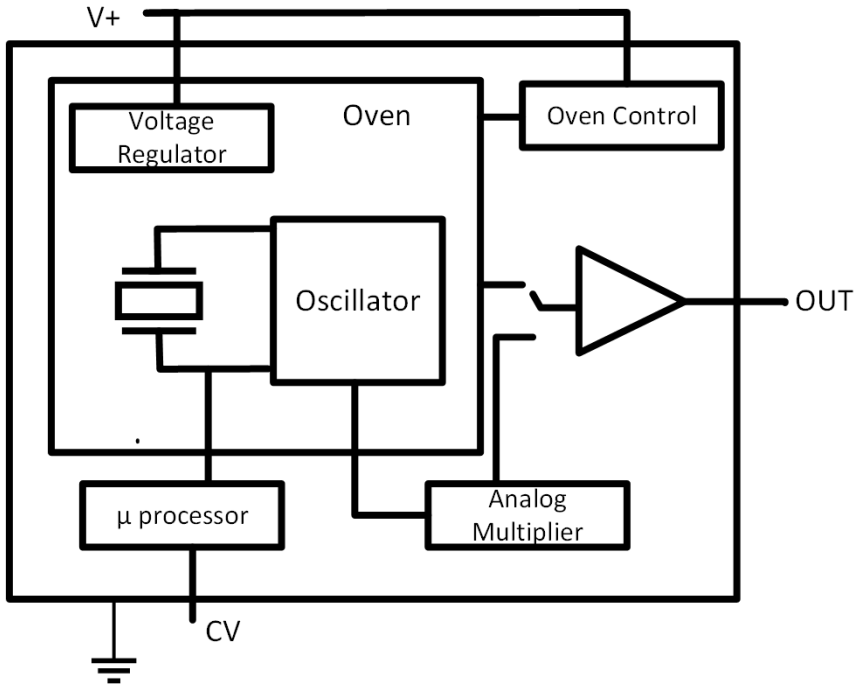
# MX-060

Microprocessor corrected OCXO

Online Datasheet

## Features:

- Microprocessor based temperature correction
- Frequency Range: 5 to 15 MHz
- Standard Frequencies: 5, 10 MHz
- Output: CMOS, Sine
- Footprint: 51 x 41 mm, through hole
- Supply Voltage: 5, 12 V
- Power: 2 W
- Temperature Range: -40 to 85 °C
- Temperature Stabilty over Operating Temperature Range: 0.6 ppb
- Aging per Day: 0.06 ppb




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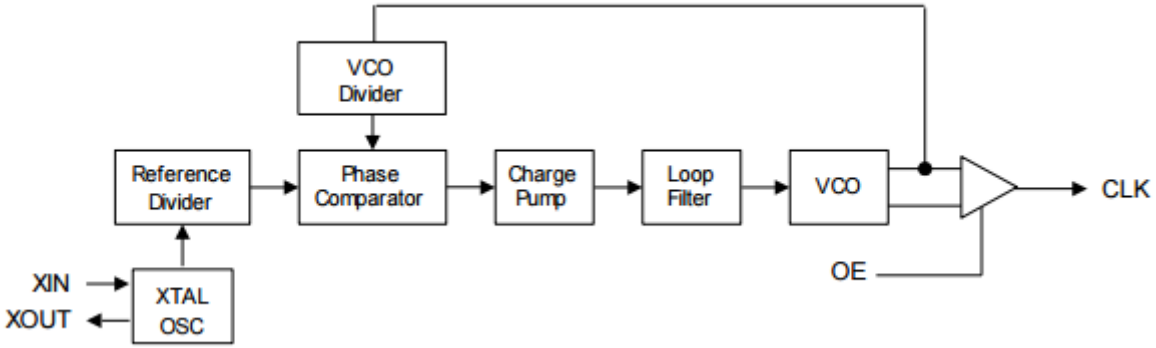
# PL602-03

Low Cost, High Performance & Low Phase Noise XO

Online Datasheet

## Features:

- Low phase noise XO output for the 48MHz to
- 100MHz range (-130 dBc at 10kHz offset).
- 12 to 25MHz crystal input
- Integrated crystal load capacitor:
- No external load capacitor required.
- Selectable High Drive (30mA) or
- Standard Drive (10mA) output.
- 3.3V operation
- Available in 8-Pin TSSOP or SOIC





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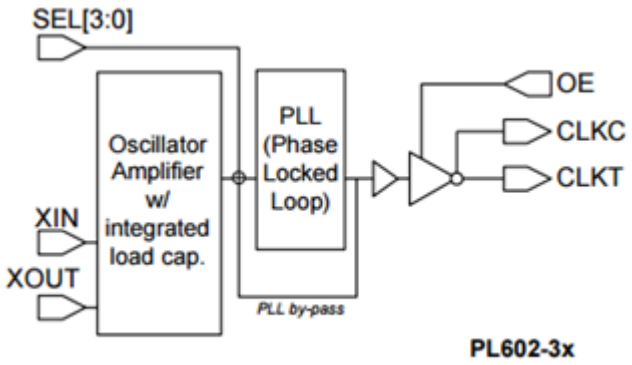
# PL602-37/38/39

HCSL Compatible Clock Generator for PCI Express

Online Datasheet

## Features:

- Selectable 750kHz to 800MHz range
- Low phase noise output:
  - -127dBc/Hz for 155.52MHz @ 10kHz offset
  - -115dBc/Hz for 622.08MHz @ 10kHz offset
- LVCMOS (PL602-37), LVPECL (PL602-35 and -- PL602-38) or LVDS (PL602-39) output
- 12MHz to 25MHz crystal input
- No external load capacitor or varicap required
- Output Enable selector
- Selectable /16 to x32 frequency divider/multiplier
- 3.3V operation
- Available in 16-Pin TSSOP, 16-pin 3mm x 3mm -- packages



PL602-3x

<< BACK

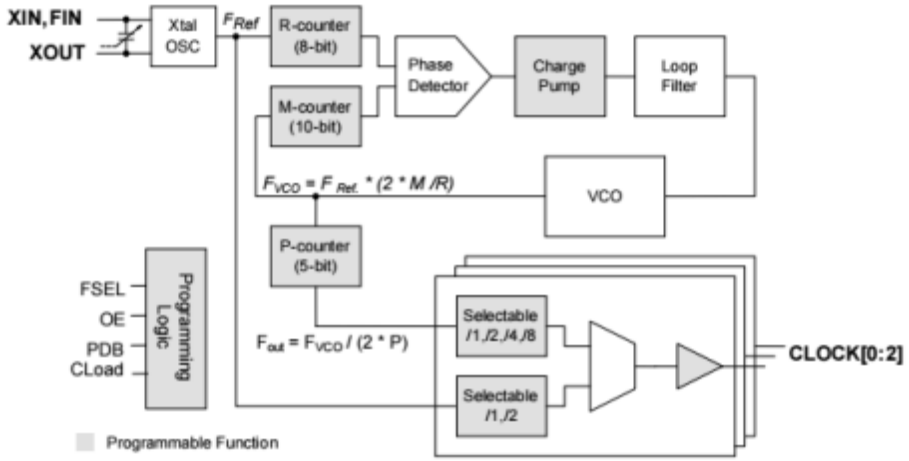
# PL611-01

Programmable Clock™

Online Datasheet

## Features:

- Advanced programmable PLL design
- Very low Jitter and Phase Noise:
  - 30-70ps Pk-Pk typical
- Up to 3 programmable outputs
- Output frequency up to 200MHz CMOS
- Accepts Crystal or reference clock inputs:
  - Fundamental crystal: 10MHz-30MHz
  - 3RD overtone crystal: Up to 75MHz
  - Reference input: Up to 200MHz
- Accepts <1.0V reference signal input –
  - voltage
- One programmable I/O pin can be configured as:
  - Programmable clock
  - Frequency Selection input
  - Output Enable (OE)
  - Power Down (PDB) input
- Supply operating range 2.25V to 3.63V
- Industrial temperature range: -40°C to +85°C
- Available in 8-pin MSOP/SOP, and 6-pin SOT packages




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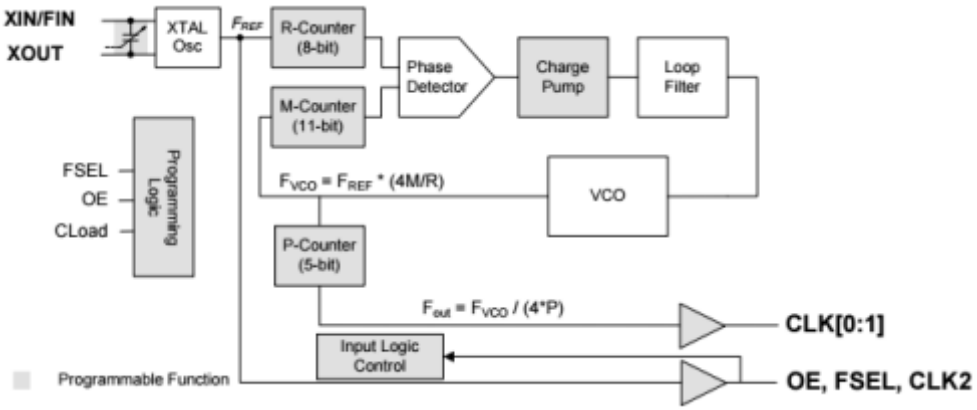
# PL611-30

Low-Cost General Purpose Frequency Synthesizer

Online Datasheet

## Features:

- Advanced programmable PLL design
- Very low Jitter and Phase Noise:
  - <40ps Pk-Pk typ.
- Supports complementary LVCMOS –
  - outputs to drive LVPECL & LVDS inputs
- Output Frequencies:
  - ≤400MHz at 3.3V
  - ≤350MHz at 2.5V
- Input Frequencies:
  - Fundamental crystal: 10MHz-30MHz
  - 3RD overtone crystal: Up to 75MHz
  - Reference Input: Up to 200MHz
- Accepts <1.0V reference signal input voltage
- One programmable I/O pin can be configured as:
  - Output Enable (OE) input
  - Frequency Selection (FSEL) input
  - Reference Clock (CLK2) output
- Single 2.5V or 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 8-pin MSOP/SOP and 6-pin SOT-23 packages




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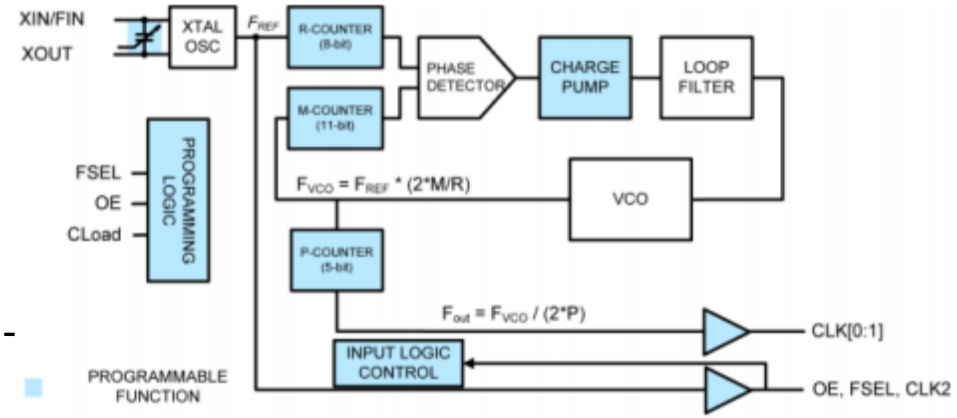
# PL611-31

Low-Cost General Purpose Frequency Synthesizer

Online Datasheet

## Features:

- Advanced programmable PLL design
- Very low Jitter and Phase Noise:
  - <40ps Pk-Pk typ.
- Up to 3 outputs
- Output Frequencies up to 200MHz CMOS:
  - Provides complementary LVCMOS -
    - outputs to drive LVSMOS, LVPECL, -
    - LVDS, HCSL or CML inputs
- Input Frequencies:
  - Fundamental crystal: 10MHz – 30MHz
  - Reference clock: 1MHz – 200MHz
- Accepts <1.0V reference signal input voltage
- One programmable I/O pin can be configured as:
  - Output Enable (OE) input
  - Frequency Selection (FSEL) input
  - Reference Clock (CLK2) output
- Single 2.5V or 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 8-pin MSOP/SOP and 6-pin SOT-23 packages





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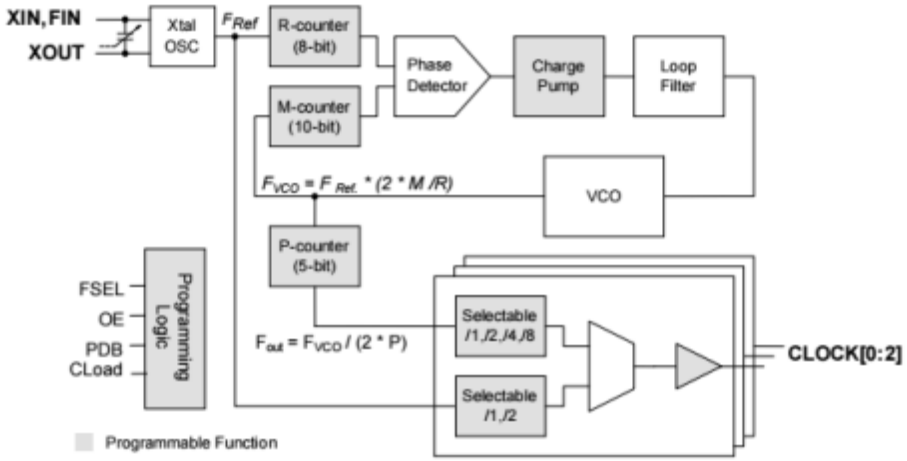
# PL611-01

Low-Cost General Purpose Frequency Synthesizer

Online Datasheet

## Features:

- Advanced programmable PLL design
- Very low Jitter and Phase Noise
  - 30-70ps Pk-Pk typical
- Up to 3 programmable outputs
- Output frequency up to 200MHz CMOS
- Accepts Crystal or reference clock inputs:
  - Fundamental crystal: 10MHz-30MHz
  - 3RD overtone crystal: Up to 75MHz
  - Reference input: Up to 200MHz
- Accepts <1.0V reference signal input –
  - voltage
- One programmable I/O pin can be configured as:
  - Programmable clock
  - Frequency Selection input
  - Output Enable (OE)
  - Power Down (PDB) input
- Supply operating range 2.25V to 3.63V
- Industrial temperature range: -40°C to +85°C
- Available in 8-pin MSOP/SOP, and 6-pin SOT packages





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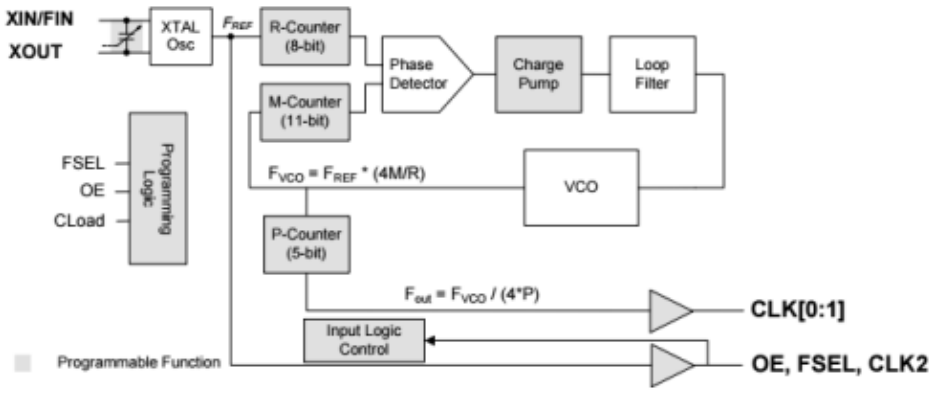
# PL611-30

Low-Cost General Purpose Frequency Synthesizer

Online Datasheet

## Features:

- Advanced programmable PLL design
- Very low Jitter and Phase Noise:
  - <40ps Pk-Pk typ.
- Supports complementary LVCMOS –
  - outputs to drive LVPECL and LVDS inputs
- Output Frequencies:
  - ≤400MHz at 3.3V
  - ≤350MHz at 2.5V
- Input Frequencies:
  - Fundamental crystal: 10MHz-30MHz
  - 3RD overtone crystal: Up to 75MHz
  - Reference Input: Up to 200MHz
- Accepts <1.0V reference signal input voltage
- One programmable I/O pin can be configured as:
  - Output Enable (OE) input
  - Frequency Selection (FSEL) input
  - Reference Clock (CLK2) output
- Single 2.5V or 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 8-pin MSOP/SOP, and 6-pin SOT-23 packages




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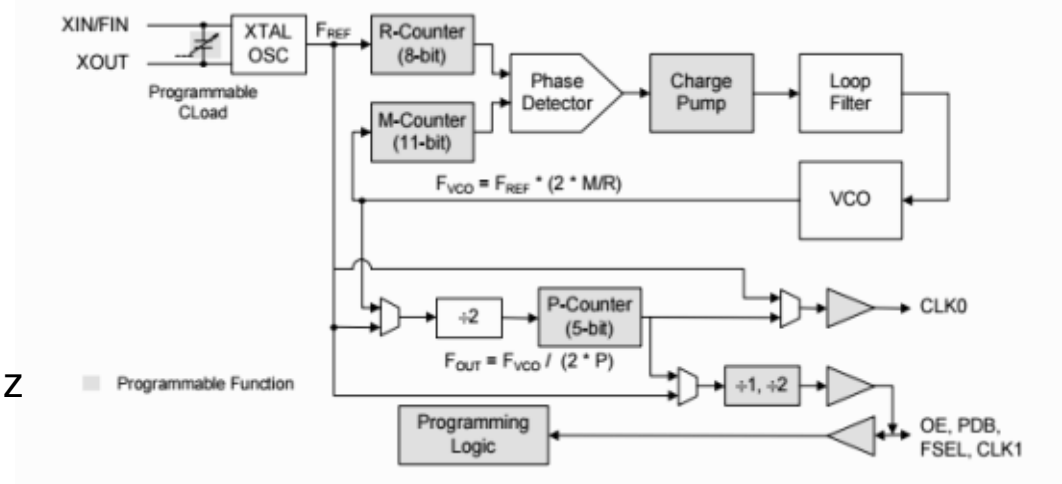
# PL611s-02

1.8V-3.3V PicoPLL, World's Smallest Programmable Clock

Online Datasheet

## Features:

- Advanced One Time Programmable PLL design
- Programmable PLL or Direct Oscillation operation
- Very low Jitter and Phase Noise:
  - 30-70ps Pk-Pk typ.
- Output Frequencies:
  - ≤110MHz at 1.8V
  - ≤166MHz at 2.5V
  - ≤200MHz at 3.3V
- Input Frequencies:
  - Fundamental crystal: 10MHz-30MHz
- Input Frequency: Fundamental crystal:
  - 10MHz-50MHz
- 8-bit Switch Capacitor for ±50ppm crystal CL tuning
- Low current consumption, <10µA when PDB is activated
- One programmable I/O pin can be configured as:
  - Output Enable (OE) input
  - Power Down (PDB) input
- Single 1.8V, 2.5V or 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Wire bond (-02) or Flip-Chip (-03) pad layout




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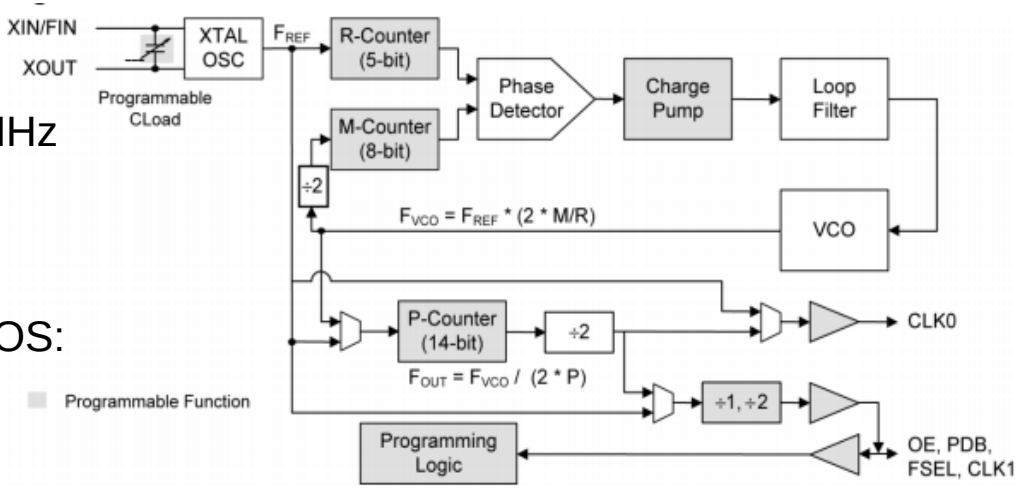
# PL611s-18

0.5kHz to 125MHz, MHz-to-kHz Programmable Clock

Online Datasheet

## Features:

- Designed for very low power applications
- Accepts crystal or reference clock inputs
- Input frequency:
  - Fundamental crystal: 10MHz to 50MHz
  - Reference input: 1MHz to 125MHz
- Accepts >0.1V reference signal input -
  - voltage
- Output frequency 0.5kHz to 125MHz CMOS:
  - 65MHz @ 1.8V operation
  - 90MHz @ 2.5V operation
  - 125MHz @ 3.3V operation
- One programmable I/O pin can be configured as:
  - OE, PDB, FSEL, or CLK1
- Low current consumption:
  - <1.0mA with 27MHz & 32kHz outputs
  - <5µA when PDB is activated
- Single 1.8V - 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 6-pin DFN, and SOT-23 packages





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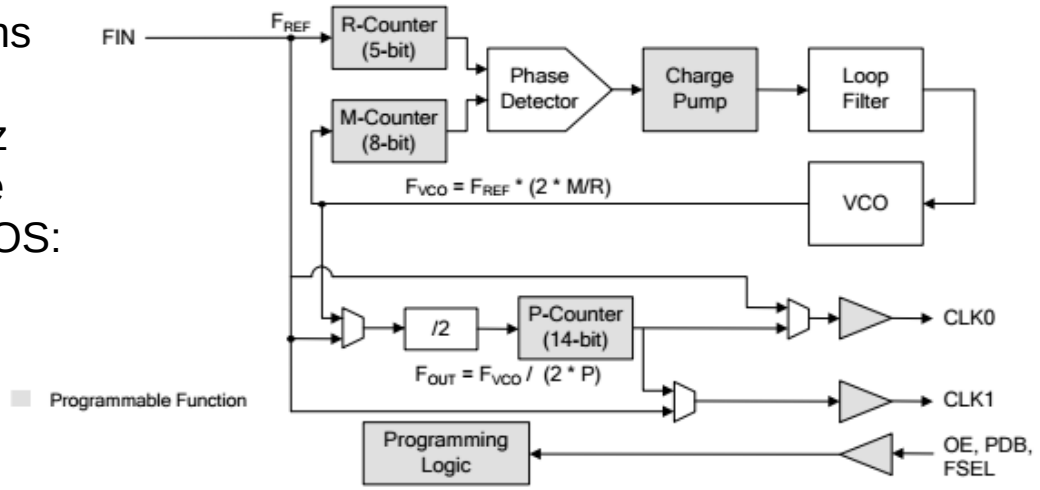
# PL611s-19

0.5kHz-125MHz, MHz to KHz Programmable Clock™

Online Datasheet

## Features:

- Designed for very low power applications
- Input Frequency, AC Coupled:
  - Reference input: 1MHz to 125MHz
  - Accepts >0.1V input signal voltage
- Output frequency up to 125MHz LVCMOS:
  - ≤65MHz @ 1.8V operation
  - ≤90MHz @ 2.5V operation
  - ≤125MHz @ 3.3V operation
- One programmable input pin can be configured as:
  - Power Down (PDB) input
  - Output Enable (OE)
  - Frequency Selection Switching input
- Disabled outputs Active Low
- Low current consumption:
  - <1.0mA with 27MHz & 32kHz outputs
  - <5µA when PDB is activated
- Single 1.8V - 3.3V ±10% power supply
- Industrial temperature range: -40°C to +85°C
- Available in 6-pin DFN, and SOT-23 packages





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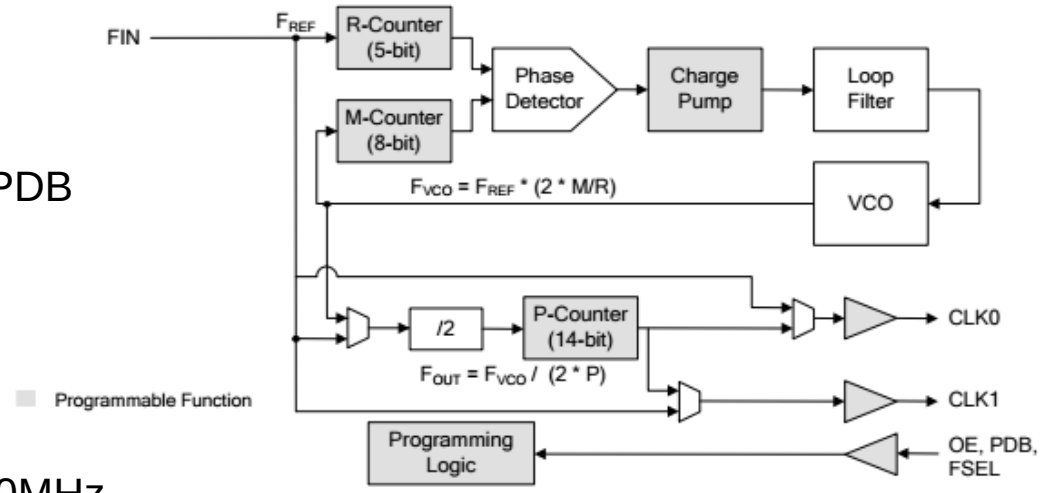
# PL613-01

1.8V to 3.3V, PicoPLL, 3-PLL, 200 MHz, 8 Output Clock IC

Online Datasheet

## Features:

- Designed for PCB space savings
- 3 low-power Programmable PLLs & -
  - Up to 8 clock outputs
- Low-Power Consumption: 10µA typ in PDB
- Output Frequency:
  - ≤110MHz @ 1.8V operation
  - ≤166MHz @ 2.5V operation
  - ≤200MHz @ 3.3V operation
- Input Frequency:
  - Fundamental Crystal: 10MHz to 40MHz
  - Reference Input: 10MHz to 200MHz
- Programmable I/O pins can be configured as:
  - Output Enable (OE), Configuration Switching –
    - (CSEL), Frequency Switching (FSELX), Power –
    - Down (PDB) inputs, or Clock Outputs
- Disabled outputs programmable as HiZ or Active Low
- Single 1.8V, 2.5V or 3.3V ±10% power supply
- Temperature range:
  - Commercial: 0°C to +70°C, Industrial: -40°C to +85°C
- Available in 3mm x 3mm QFN or TSSOP packages




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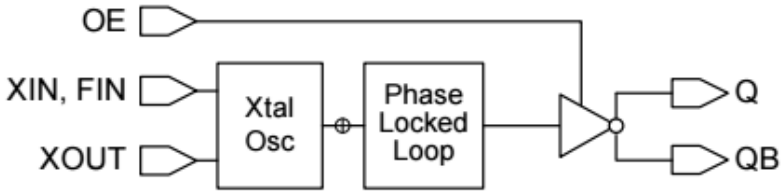
# PL602-XX

HCSL Compatible Clock Generator for PCI Express

Online Datasheet

## Features:

- Input Frequency:
- Fundamental Crystal or Reference Input: 25MHz
- Output Frequency:
  - PL602-21: 100MHz differential outputs
  - PL602-22: 125MHz differential outputs
  - PL602-23: 200MHz differential outputs
  - PL602-26: 25MHz differential outputs
  - PL602-27: 250MHz differential outputs
  - PL602-15: 156.25MHz differential outputs
- Very low Jitter: 28ps Pk-Pk typ
- Very low Phase Noise:
  - -130 dBc at 10kHz offset at 100MHz
- No external loop filter is required
- Power supply range: 2.25V to 3.63V
- Industrial temperature range: -40°C to 85°C
- 6-pin SOT and 8-pin SOP packages





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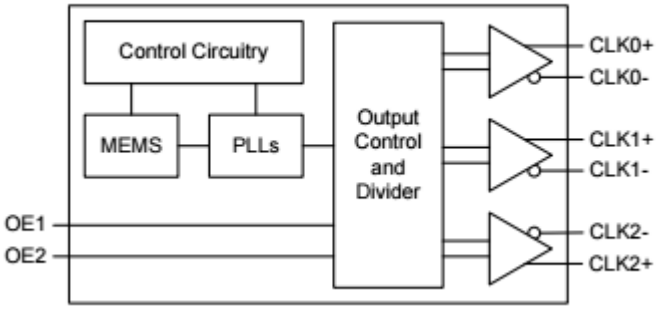
# DSC557-03

Crystal-less Two Output PCIe Gen1/2/3 Clock Generator

Online Datasheet

## Features:

- Meets PCIe Gen1, Gen2 & Gen3 specs.
- Available Output Formats:
  - HCSL, LVPECL, or LVDS
  - HCSL/LVPECL, HCSL/LVDS, -
    - LVPECL/LVDS
- Wide Temperature Range:
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- Excellent Shock & Vibration Immunity
  - Qualified to MIL-STD-883
- Low Power Consumption
  - 30% lower than competing devices
- Supply Range of 2.25V to 3.6V
- TSSOP and 14-Pin QFN packages





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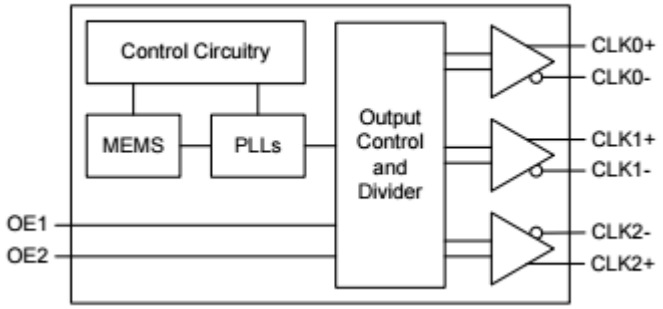
# DSC557-04

Crystal-less™ Three Output PCIe Clock Generator

Online Datasheet

## Features:

- Meets PCIe Gen1, Gen2 & Gen3 specs.
- Available Output Formats:
  - HCSL, LVPECL, or LVDS
  - Mixed Outputs: LVPECL/HCSL/LVDS
- Wide Temperature Range:
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- Low Power Consumption:
  - 30% lower than competing devices
- Supply Range of 2.25V to 3.6V
- Available in 20-Pin QFN package





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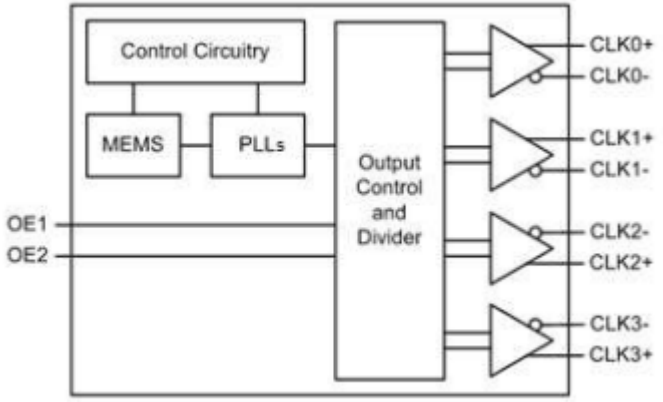
# DSC557-05

Crystal-less™ Four Output PCIe Clock Generator

Online Datasheet

## Features:

- Meets PCIe Gen1, Gen2 & Gen3 specs.
- Available Output Formats:
  - HCSL, LVPECL, or LVDS
  - Mixed Outputs: LVPECL/HCSL/LVDS
- Wide Temperature Range:
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- Excellent Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- Low Power Consumption:
  - 30% lower than competing devices
- Supply Range of 2.25V to 3.6V
- Available in 20-Pin QFN package




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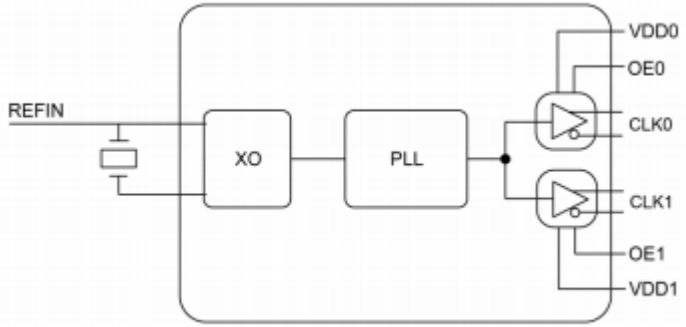
# PL602031/2/3/4

HCSL-Compatible Clock Generator for PCI Express

Online Datasheet

## Features:

- Input frequency:
  - Fundamental crystal or reference input – - 25MHz
- Output frequency:
  - PL602031: 2 x 25MHz differential outputs
  - PL602032: 2 x 100MHz differential outputs
  - PL602033: 2 x 125MHz differential outputs
  - PL602034: 2 x 200MHz differential outputs
- Very low jitter: 28ps peak-to-peak typical
- Very low phase noise: -130dBc at 10kHz offset – - at 100MHz
- Compliant with PCI-Express Gen1 and Gen2
- Industrial temperature range: -40°C to +85°C
- Power supply range: 2.25V to 3.63V
- Available in 16-pin QFN package





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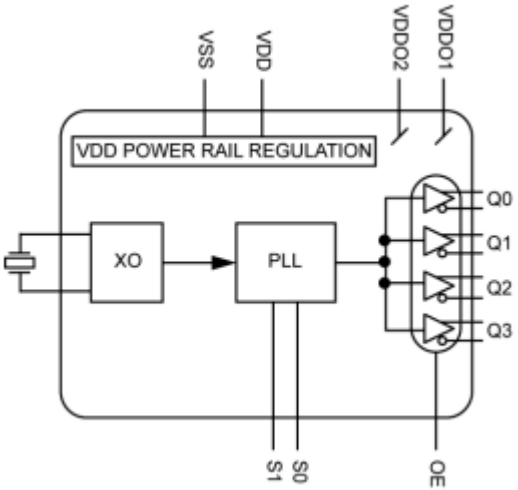
# PL602041

ClockWorks™ PCIe Quad, Ultra-Low Jitter, HCSL Frequency Synthesizer

Online Datasheet

## Features:

- Input crystal frequency of 25MHz
- Generates four HCSL clock outputs:
  - 25MHz, 100MHz, 125MHz, and 200MHz
- 2.5V or 3.3V operating range
- Typical phase jitter @ 100MHz (1.875MHz to –
  - 20MHz): 105fs
- Compliant with PCI Express Gen1, Gen2, -
  - and Gen 3
- Industrial temperature range: -40°C to +85°C
- Available in 24-pin 4mm x 4mm QFN package





<< BACK

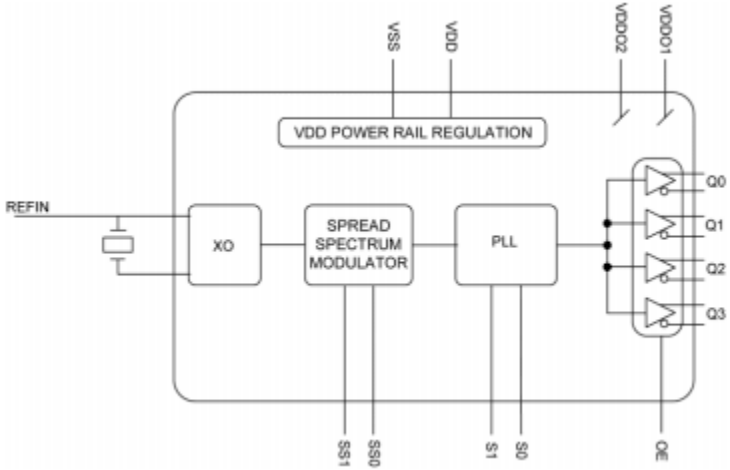
# PL607041

ClockWorks™ PCIe Quad, Ultra-Low Jitter, HCSL Frequency Synthesizer

Online Datasheet

## Features:

- 25MHz fundamental crystal or reference input
- Generates four HCSL clock outputs:
  - 25MHz, 100MHz, 125MHz, and 200MHz
- Spread spectrum for EMI reduction
- 2.5V or 3.3V operating range
- Typical phase jitter @ 100MHz (1.5MHz to –
  - 10MHz): 320fs
- Industrial temperature range: -40°C to +85°C
- Available in 24-pin 4mm x 4mm QFN package




<< BACK

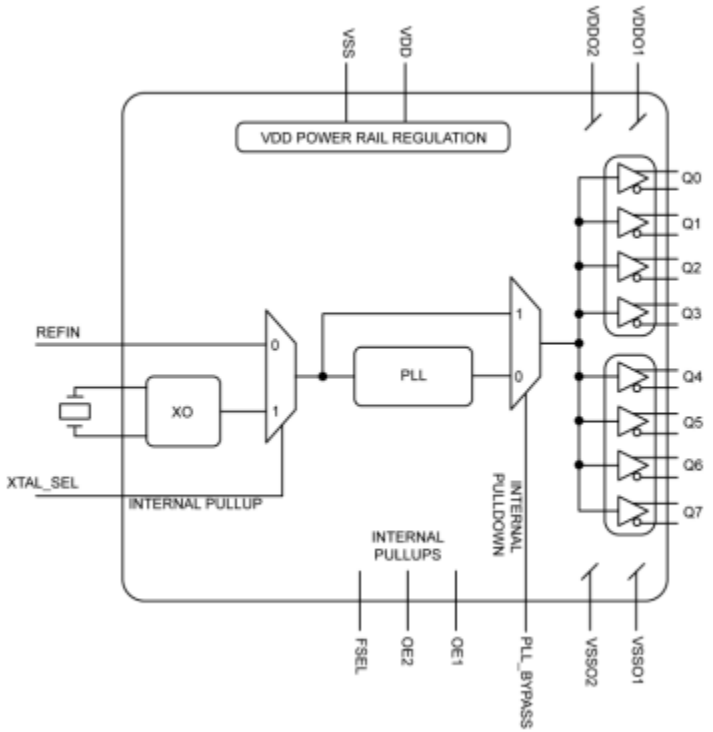
# PL602081/2

PCIe Octal, Ultra-Low Jitter, HCSL Frequency Synthesizer

Online Datasheet

## Features:

- Generates eight HCSL clock outputs
- PL602081 output frequencies: 25MHz, -
  - 100MHz, or 200MHz
- PL602082 output frequencies: 25MHz, -
  - 125MHz, or 250MHz
- 2.5V or 3.3V operating range
- Typical phase jitter: 250fs for 12kHz to 20MHz
- Industrial temperature range: -40°C to +85°C
- Available in 44-pin 7mm x 7mm QFN package




<< BACK

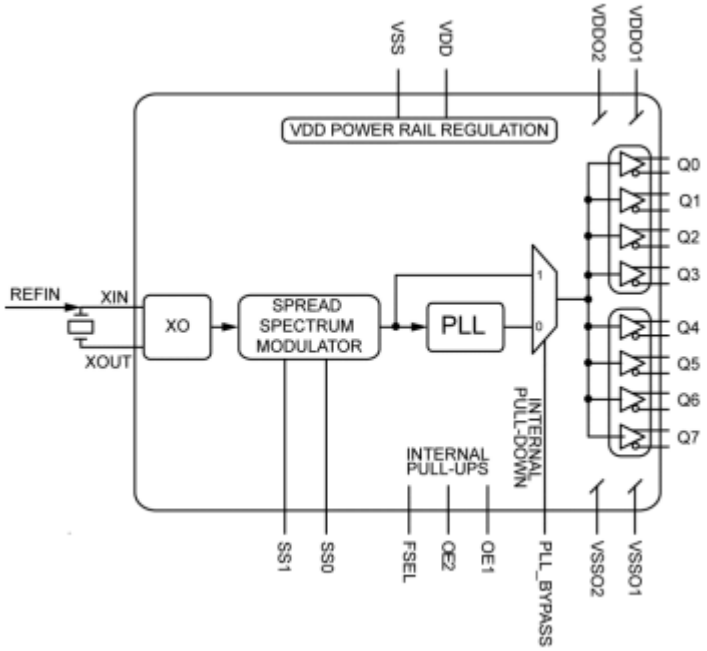
# PL607081/2

PCIe Octal, Ultra-Low Jitter, HCSL Frequency Synthesizer

Online Datasheet

## Features:

- Generates eight HCSL clock outputs
- PL607081 output frequencies: 25MHz, -
  - 100MHz, or 200MHz
- PL607082 output frequencies: 25MHz, -
  - 125MHz, or 250MHz
- Spread spectrum for EMI reduction
- 2.5V or 3.3V operating range
- Typical phase jitter @ 100MHz: 320fs for –
  - 1.5MHz to 10MHz
- Industrial temperature range: -40°C to +85°C
- Available in 44-pin 7mm x 7mm QFN package



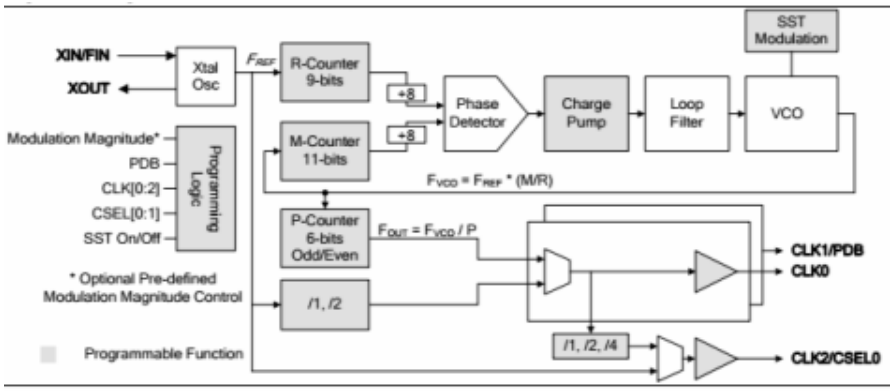

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# PL671-01

PicoEMI™ Programmable Spread Spectrum Clock

Online Datasheet

## Features:




- Advanced programmable PLL with Spread -- Spectrum
- Crystal or Reference Clock input:
  - Fundamental crystal: 10MHz to 40MHz
  - Reference input: 1MHz to 200MHz
- Accepts ≥0.1V reference signal input voltage
- Up to 3 programmable outputs
- Low Cycle to Cycle jitter
- Single 2.5V or 3.3V ±10% power supply
- Programmable Spread Spectrum Modulation Magnitude:
- Center Spread: ±0.125% to ±2.0% in ±0.125% steps:
  - Down Spread: -0.25% to -4.0% in 0.25% steps
  - Spread Spectrum On/Off selection
- Programmable output drive (4mA, 8mA, 16mA)
- Industrial temperature range:
  - -40°C to +85°C
- Output frequency range:
  - Up to 166MHz @ 2.5V
  - Up to 200MHz @ 3.3V
- 8-pin SOP, MSOP and 6-pin SOT packaging


<< BACK

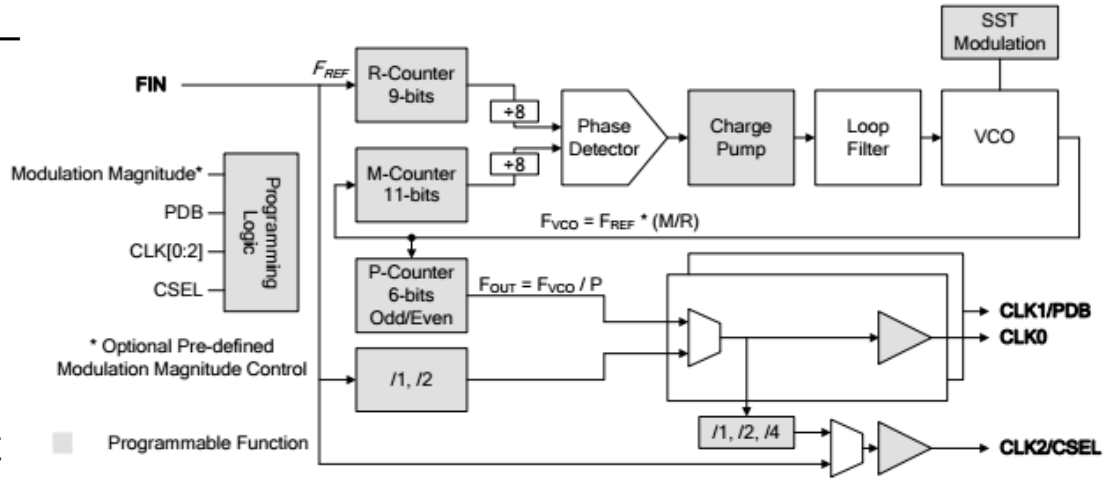
# PL671-02

PicoEMI™ Programmable Spread Spectrum Clock Generator

Online Datasheet

## Features:

- Advanced programmable PLL with –
  - Spread Spectrum
- Reference Clock input:
  - 1MHz to 200MHz
- Output Frequency:
  - ≤200MHz
- Two programmable I/O pins:
  - PDB for Power Down function
  - CSEL for Configuration Select
  - CLK1/CLK2 additional clock –
    - outputs
- Programmable output drive
- Low Cycle to Cycle jitter
- Single 2.5V or 3.3V ±10% power supply
- 6-pin SOT23 and Thin SOT (TSOT) packaging





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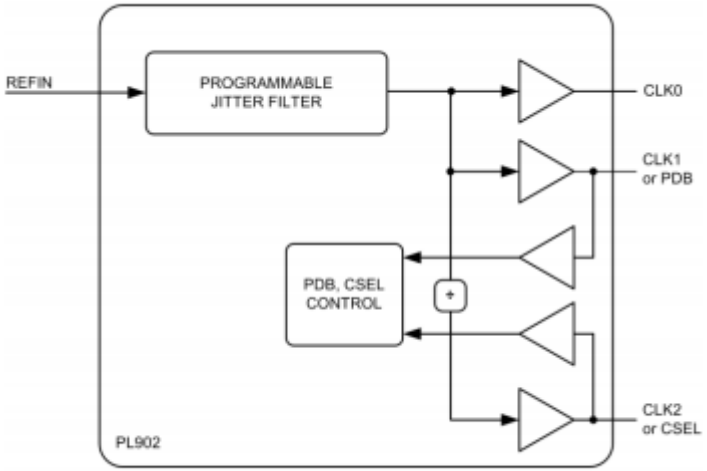
# PL902

JitterBlocker™

Online Datasheet

## Features:

- Lowest power, smallest programmable jitter attenuator
- Input/output frequency up to 200MHz
- I/O pins can be configured as:
  - Output enable (OE)
  - Frequency switching (CSEL)
  - Power down (PDB) input
  - CLK1(2) output
- <10µA current consumption with PDB active
- Industrial temperature range:
  - –40°C to +85°C
- Available in 6-pin SOT-23 package
- Related devices:
  - PL903xxx: Single-ended input, differential - - output, and phase noise cleaning
  - PL904xxx: Differential input, two differential – - outputs, and phase noise cleaning





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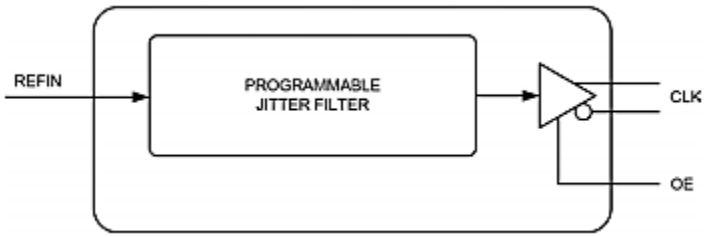
# PL903

JitterBlocker™

Online Datasheet

## Features:

- Lowest-power, smallest programmable jitter attenuator
- Input frequency up to 200MHz
- Output frequency up to 840MHz
- Jitter attenuation 20dB at 3MHz spur frequency
- Additive phase jitter or phase jitter floor:
  - 55fs for 1.875MHz to 20MHz
  - 251fs for 12kHz to 20MHz
- Single ended CMOS input
- One differential or two single ended outputs
- Output logic types supported:
  - LVPECL, LVDS, HCSL and LVCMOS (single – - ended or differential).
- Industrial temperature range from –40°C to +85°C
- Available in 24-pin QFN package
- Related devices:
  - PL902xxx: LVCMOS, period jitter cleaning
  - PL904xxx: Differential input, two differential – - outputs, and phase noise cleaning





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# PL904

JitterBlocker™

Online Datasheet

## Features:

- Input frequency up to 200MHz
- Output frequency up to 850MHz
- Programmable input type, differential or single – - ended
- Up to two outputs supporting:
  - LVPECL, LVDS, HCSL, or LVCMOS logic – - types
- Output enable control for each output
- Jitter attenuation of 20db at 3MHz spur frequency
- Cleans up spurs to below 0.5psRMS phase jitter
- Industrial temperature range: -40°C to +85°C
- Available in 32-pin QFN package
- Related devices:
  - PL902xxx: LVCMOS, period jitter cleaning
  - PL903xxx: Single-ended input, one – - differential output, phase noise cleaning





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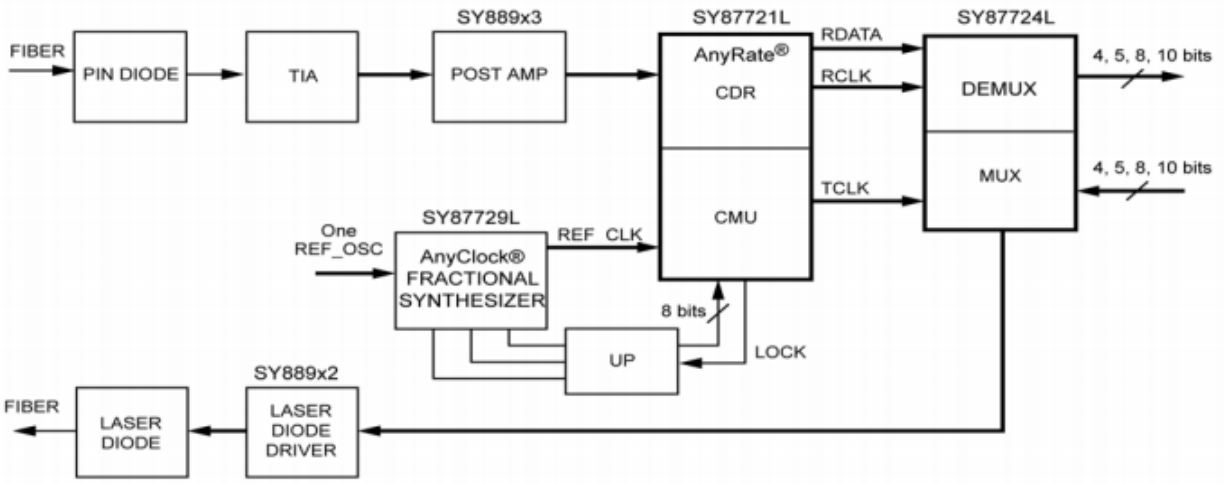
# SY87729L

3.3V AnyClock® Fractional N Clock Generator

Online Datasheet

## Features:

- 10MHz to 365MHz -
  - from a single 27MHz reference oscillator
- Generates exactly the correct frequency for -
  - common transport protocols with or without FEC
- Directly enables SY87721L to lock onto any data –
  - rate within its range
- Exceeds BellCore and ITU jitter generation specifications
- Programmable via MicroWire™ interface
- Available in 32-Pin EPAD-TQFP package




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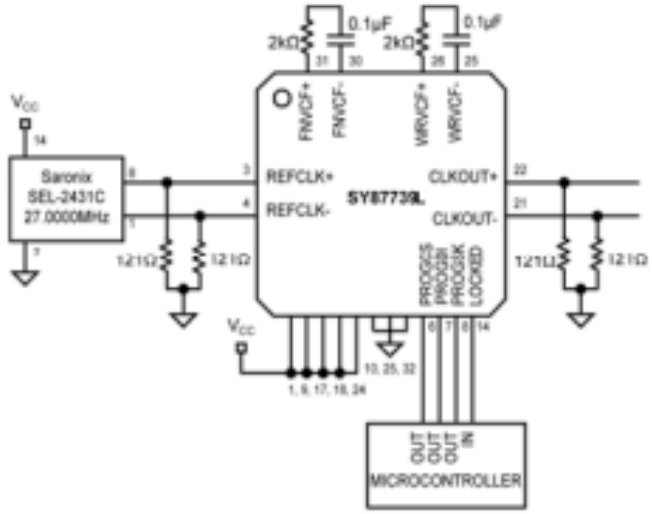
# SY87739L

Protocol Transparent Fractional-N Clock Generator

Online Datasheet

## Features:

- Protocol transparent
- 10MHz to 729MHz from a single 27MHz –
  - reference oscillator
- Generates exactly the correct frequency for –
  - common transport protocols with or without FEC
- Directly enables SY87721L CDR to lock onto any -
  - data rate within its range
- Exceeds BellCore and ITU jitter generation –
  - specifications
- Programmable via MicroWire™ interface
- Available in 32-Pin ePad-TQFP package




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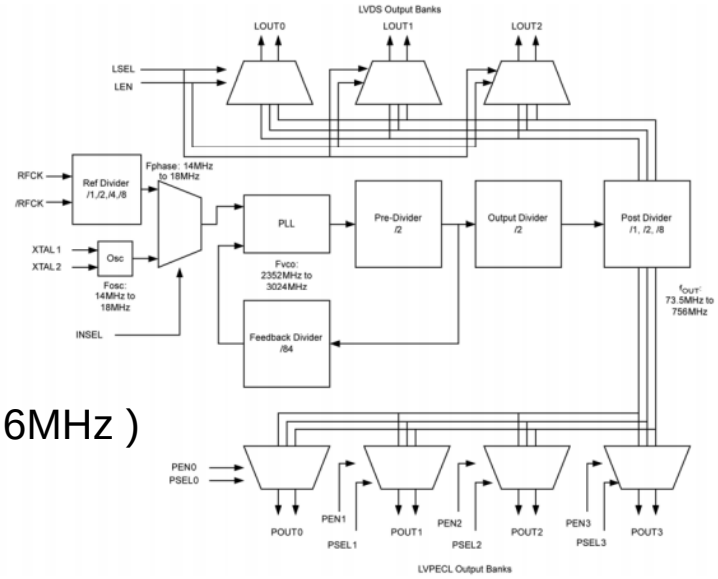
# SY89537L

LVPECL & LVDS Programmable Clock Generator & Fanout Buffer

Online Datasheet

## Features:

- Integrated programmable clock generator with multiple -
  - output dividers, fanout buffers, and clock drivers
- Direct interface to crystal: 14MHz to 18MHz Input MUX:
  - Ideal for reference backup clock source or –
    - system test frequency source
  - Input MUX isolates XTAL and minimizes crosstalk
- Guaranteed AC performance:
  - 87.15MHz to 700MHz output range (w/ RFCK at 16.6MHz )
  - <100psPP total jitter
  - <7psRMS cycle-to-cycle jitter
  - <8psPP deterministic jitter
  - <0.7psRMS crosstalk induced jitter
  - <50ps bank-to-bank skew
- LVPECL and LVDS outputs, TTL/CMOS compatible control logic
- Five independently programmable output frequency banks:
  - Four differential LVPECL output banks
  - One differential LVDS output bank with 3 output pairs
- 3.3V ±10% power supply (2.5V output capable)
- Industrial temperature range: -40°C to +85°C
- Available in 44-pin (7mm x 7mm) MLF® package





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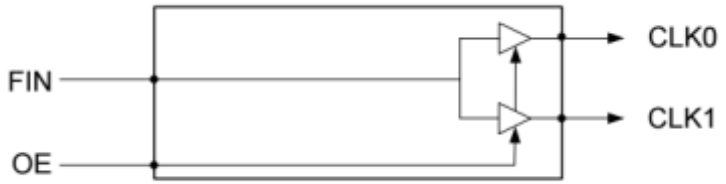
# PL133-27

Low-Power, 1.62V to 3.63V, 1MHz to 150MHz, 1:2 Fanout Buffer IC

Online Datasheet

## Features:

- 2 LVCMOS Outputs
- Input/Output Frequency: 1MHz to 150MHz
- Supports LVCMOS or Sine Wave Input Clock
- Extremely low additive Jitter
- 8mA Output Drive Strength
- Low Current Consumption
- Single 1.8V, 2.5V or 3.3V ±10% operation
- Operating Temperature Range:
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C
- Available in DFN-6L Packages





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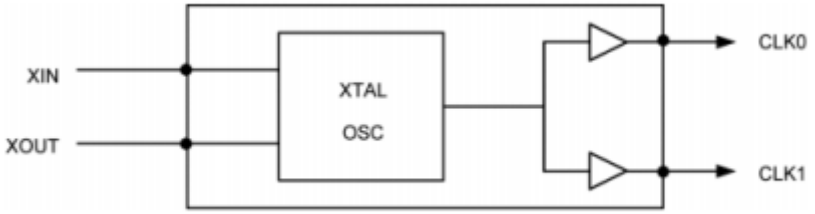
# PL135-27

**Low Power, 1.62V to 3.63V, 10MHz to 40MHz, 1:2 Oscillator Fanout Buffer**

Online Datasheet

## Features:

- Advanced oscillator design for wide –
  - frequency coverage
- Two LVCMOS Outputs
- 8mA Output Drive Strength
- Input/Output Frequency: 10MHz to –
  - 40MHz fundamental crystal
- Very low jitter and phase noise
- Low current consumption
- Single 1.62V to 3.63V power supply
- Available in 2.0mm x 13.mm DFN-6 package





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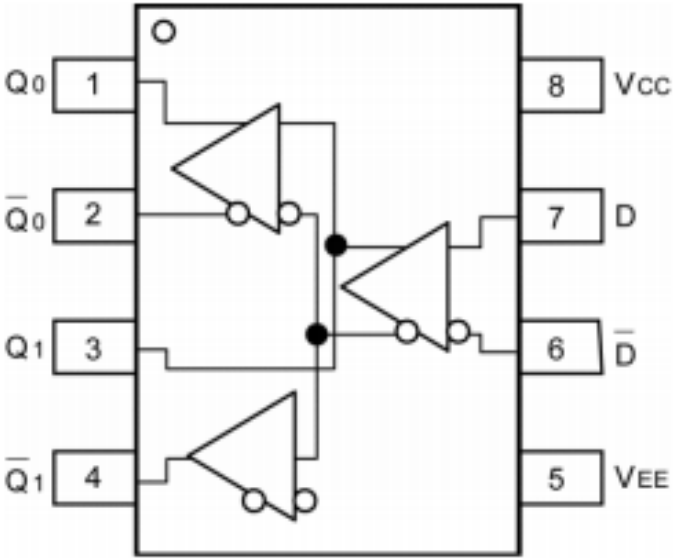
# SY100EL11V

5V/3.3V 1:2 Differential Fanout Buffer

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 265ps propagation delay
- 5ps skew between outputs
- High bandwidth output transitions
- Internal 75kΩ input pull-down resistors
- Replaces SY10/100EL11
- Improved output waveform characteristics
- Available in 8-pin SOIC package




8-Pin SOIC (Z8-1)


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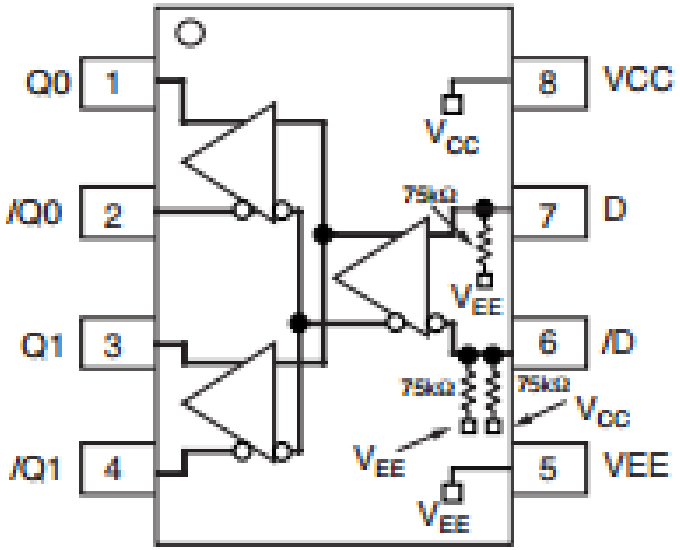
# SY100EP11U

2.5V/3.3V/5V 1:2 Differential PECL/LVPEC/ECL Fanout Buffer

Online Datasheet

## Features:

- 2.5V, 3.3V, and 5V power supply options
- Guaranteed AC parameters over temperature:
  - fMAX = >3GHz
  - <20ps output-to-output skew
  - <200ps tr/tf
  - <300ps propagation delay
- Industrial temperature range: -40°C to +85°C
- Available in 8-Pin MSOP and SOIC packages




8-pin MSOP and SOIC Packages

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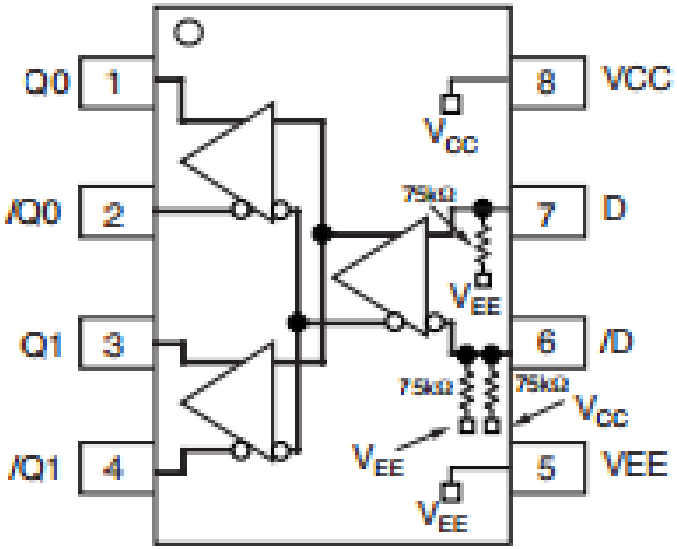
# SY10EP11U

2.5V/3.3V/5V 1:2 Differential PECL/LVPEC/ECL Fanout Buffer

Online Datasheet

## Features:

- 2.5V, 3.3V, and 5V power supply options
- Guaranteed AC parameters over temperature:
  - fMAX = >3GHz
  - <20ps output-to-output skew
  - <200ps tr/tf
  - <300ps propagation delay
- Industrial temperature range:
  - -40°C to +85°C
- Available in 8-Pin MSOP and SOIC packages




8-pin MSOP and SOIC Packages

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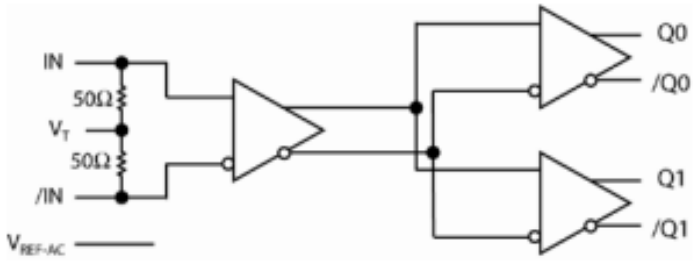
# SY54011

Low Voltage 1.2V/1.8V CML 1:2 Fanout Buffer, 3.2Gbps, 3.2 GHz

Online Datasheet

## Features:

- 1.2V/1.8V/2.5V CML 1:2 Fanout Buffer
- Guaranteed AC performance over temperature – - and voltage:
  - DC-to >3.2Gbps throughput
  - <300ps propagation delay (IN-to-Q)
  - <15ps within-device skew
  - <95ps rise/fall times
- Ultra-low jitter design:
  - <50fsRMS typical additive phase jitter
- High-speed CML outputs
- 2.5V ±5% VCC, 1.2/1.8V/2.5V ±5% - - VCCO power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF package




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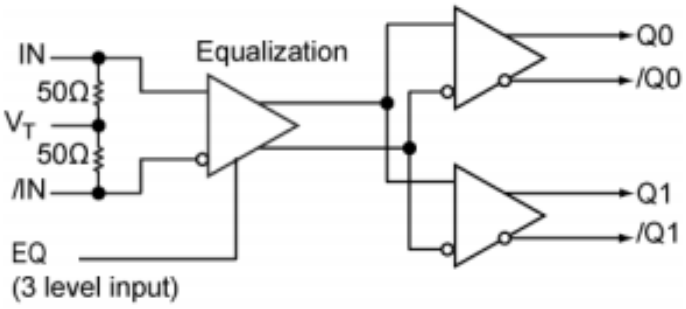
# SY56011R

Low Voltage 1:2 Fanout Buffer with Equalization

Online Datasheet

## Features:

- 1.2V/1.8V/2.5V CML 1:2 Fanout Buffer
- Equalizes 9, 18, 27 inches of FR4
- Guaranteed AC performance over temperature – - and voltage:
  - DC-to >6.4Gbps Data throughput
  - DC-to >4.5GHz Clock throughput
  - <280ps propagation delay (IN-to-Q)
  - <15ps within-device skew
- <80ps rise/fall times
- Ultra-low jitter design:
  - <1psRMS random jitter
- High-speed CML outputs
- 2.5V ±5% VCC, 1.2/1.8V/2.5V ±5% VCCO power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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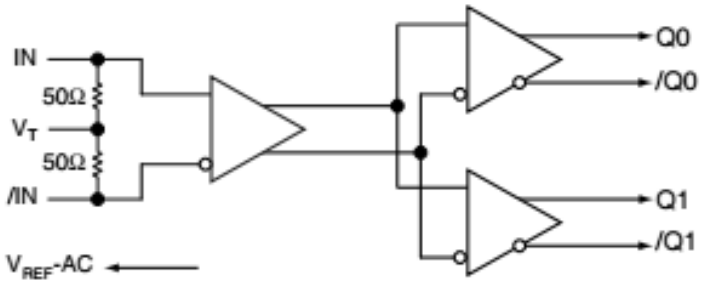
# SY58011U

7GHz, 1:2 CML Fanout Buffer/Translator

Online Datasheet

## Features:

- Precision 1:2, 400mV CML fanout buffer
- Guaranteed AC performance over –
  - temperature/voltage:
    - >7GHz fMAX clock
    - <60ps tr/tf times
    - <250ps tpd
    - <15ps max. skew
- Low jitter performance:
    - <10psPP total jitter (clock)
- <1psRMS random jitter (data):
    - <10psPP deterministic jitter (data)
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts DC coupled and –
  - AC-coupled differential inputs: LVPECL, LVDS, and CML
- 50Ω source terminated CML outputs
- Power supply 2.5V ±5% and 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF® package





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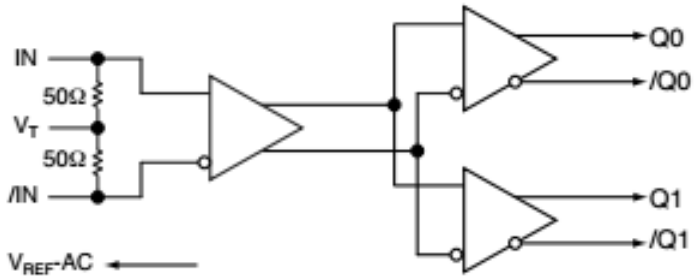
# SY58012U

5GHz, 1:2 LVPECL Fanout Buffer/Translator

Online Datasheet

## Features:

- Precision 1:2, 800mV LVPECL fanout buffer
- Guaranteed AC performance over –
  - temperature/ voltage:
- >5GHz fMAX (clock)
- <110ps tr/tf times
- <260ps tpd
- <15ps max skew
- Low jitter performance
- 60fs RMS phase jitter
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts DC and -
  - AC-coupled differential inputs: LVPECL, LVDS, and CML
- Outputs are 100k LVPECL compatible, 800mV swing
- Power supply 2.5V ±5% and 3.3V ±10%
- Industrial temperature range:
  - -40°C to +85°C e
- Available in 16-pin (3mm x 3mm) QFN package





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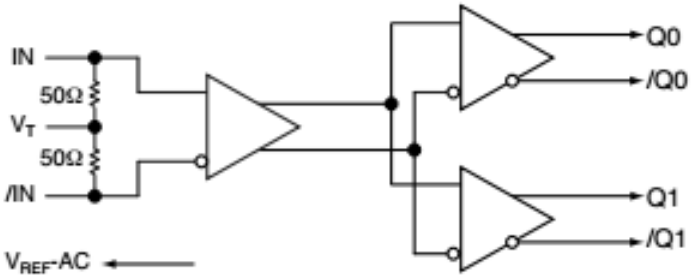
# SY58013U

6 GHz, 1:2 Fanout Buffer/Translator w/400mV LVPECL Outputs

Online Datasheet

## Features:

- Precision 1:2, 400mV LVPECL fanout buffer
- Low phase jitter
- <55fsRMS (typical)
- Guaranteed AC performance over temperature –
  - and voltage:
    - >6GHz fMAX clock
    - <80ps tr/tf times
    - <250ps tpd
- <15ps maximum skew
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts DC –
  - coupled and AC-coupled differential inputs: -
  - LVPECL, LVDS, and CML
- 400mV LVPECL compatible outputs
- Power supply 2.5V ±5% and 3.eV ±10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin 3mm x 3mm QFN package





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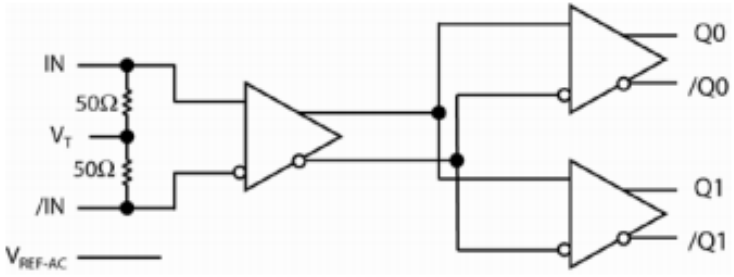
# SY58606U

4.25Gbps Precision, 1:2 CML Fanout Buffer with Fail Safe Input

Online Datasheet

## Features:

- Precision 1:2, 400mV CML fanout buffer
- Guaranteed AC performance over –
  - temperature and voltage:
    - DC-to >4.25Gbps throughput
    - <320ps propagation delay (IN-to-Q)
    - <15ps within-device skew
    - <85ps rise/fall times
- Fail Safe Input
- Prevents outputs from oscillating when input is invalid
- Ultra-low jitter design
- 100fsRMS typical additive jitter
- High-speed CML outputs
- 2.5V ±5% or 3.3V ±10% power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





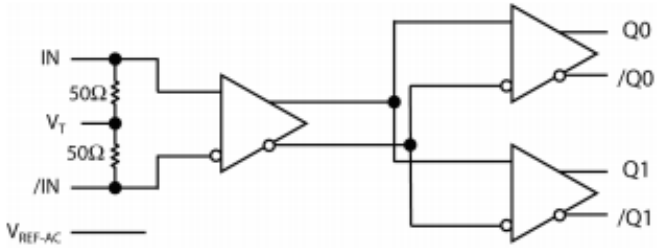
<< BACK

# SY58607U

3.2Gbps Precision, 1:2 LVPECL Fanout Buffer with Fail Safe Input

Online Datasheet

## Features:




- Precision 1:2, 800mV LVPECL fanout buffer
- Guaranteed AC performance over temperature – - and voltage:
  - DC-to >3.2Gbps throughput
  - <350ps propagation delay (IN-to-Q)
  - <20ps within-device skew
  - <110ps rise/fall times
- Fail Safe Input prevents outputs from oscillating when input is invalid
- Ultra-low jitter design
- 85fsRMS phase jitter
- High-speed LVPECL outputs
- 2.5V ±5% or 3.3V ±10% power supply operation
- Industrial temperature range:
  - –40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package


<< BACK

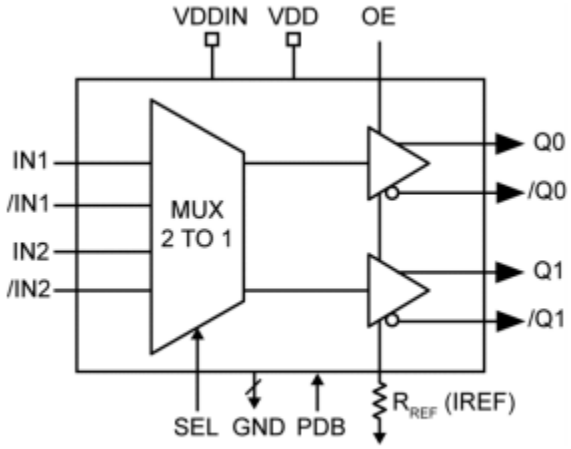
# SY75572L

267MHz 1:2 3.3V HCSL/LVDS Fanout Buffer

Online Datasheet

## Features:

- Two differential pairs of LVDS or HCSL outputs
- Two pairs of differential inputs accept LVDS or HCSL – - logic levels
- 267MHz maximum frequency
- Ultra-low phase jitter:
  - 137fsRMS, 200MHz (12kHz–20MHz)
  - 153fsRMS, 156.25MHz (12kHz–20MHz)
  - 212fsRMS, 100MHz (12kHz–20MHz)
- <2ps total jitter (peak-to-peak), 200MHz (BER = 10-12)
- 50ps output-to-output skew
- 3.3V ±5% power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm × 3mm) QFN package




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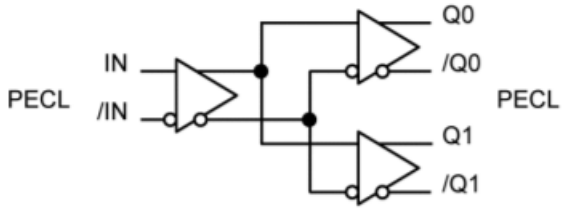
# SY89311U

## 2.5V/3.3V/5V 1:2 Differential PECL/LVPECL/ECL Fanout Buffer

Online Datasheet

### Features:

- 2.5V, 3.3V, and 5V power supply
- >Guaranteed AC parameters over temperature:
- fMAX >3.0GHz
- <20ps output-to-output skew
- <200ps tr/tf
- <300ps propagation delay
- 51fsRMS phase jitter (typical)
- 100K compatible I/O
- Industrial temperature range:
    - –40°C to +85°C
- Available in ultra-small 8-pin MLF® -
  - (2mm x 2mm) package





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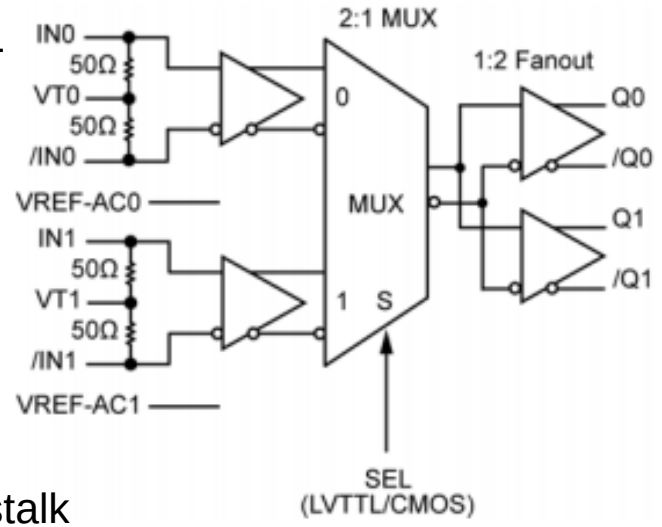
# SY89473U

**Precision LVPECL 2:1 Multiplexer with 1.2 Fanout**

Online Datasheet

## Features:

- Selects between two input channels and provides two -
  - copies of the selected output
- Guaranteed AC performance over temperature and -
  - supply voltage:
    - DC to 2.5Gbps data throughput
    - DC to 2.5GHz fMAX (clock)
    - <500ps In-to-Out tpd
    - <190ps tr/tf
    - <20ps Output-to-output skew
- Unique patented input isolation design minimizes crosstalk
- Ultra-low Jitter Design:
    - <1psRMS random jitter
    - <1psRMS cycle-to-cycle jitter
    - <10psPP total jitter (clock)
    - <0.7psRMS crosstalk induced jitter
- Unique patent-pending input termination and VT pin –
  - accepts DC and AC-coupled inputs (CML, PECL, LVDS)
- 800mV (100K) LVPECL output swing
- 2.5V ±5% or 3.3V ±10% supply voltage
- Industrial temperature range: -40°C to +85°C





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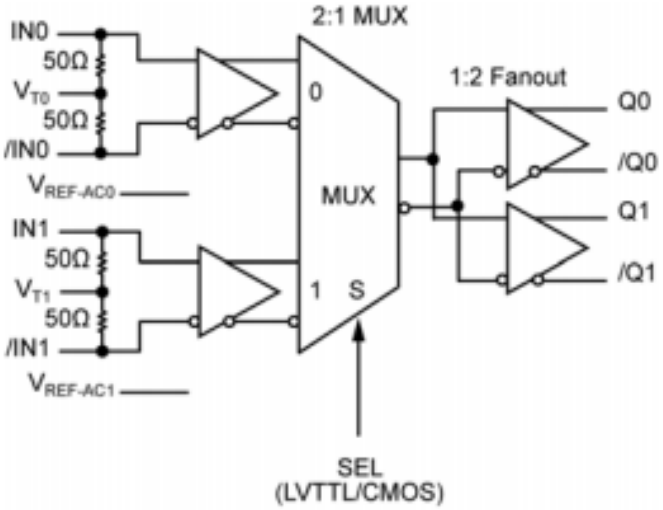
# SY89474U

**Precision LVDS 2:1 Multiplexer with 1:2 Fanout**

Online Datasheet

## Features:

- Selects from two inputs and provides two output copies
- AC performance:
  - DC to 2.5Gbps data throughput
  - DC to 2.5GHz fMAX (clock)
  - <470ps In-to-Out tpd
  - <150ps tr/tf
  - <20ps output-to-output skew
- Unique input isolation design minimizes crosstalk
- Ultra-low jitter design:
  - <1psRMS random jitter
  - <10psPP deterministic jitter
  - <1psRMS cycle-to-cycle jitter
  - <10psPP total jitter (clock)
  - <0.7psRMS crosstalk induced jitter
- Unique input termination and VT pin accepts DC and AC -– coupled inputs (CML, PECL, LVDS)
- 325mV LVDS output swing
- 2.5V ±5% supply voltage
- Industrial temperature range:-40°C to +85°C
- Available in 24-pin (4mm x 4mm) QFN package




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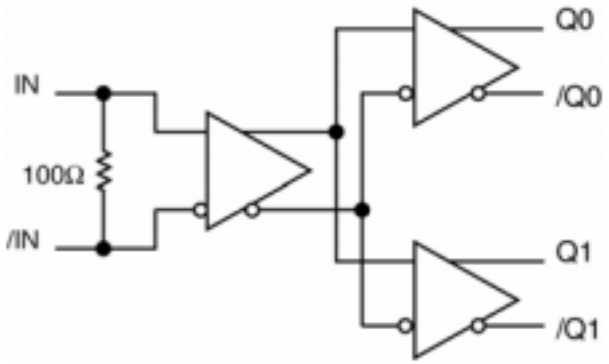
# SY89835U

2.5V, 2GHz Ultra-Precision, Differential 1:2 LVDS Fanout Buffer

Online Datasheet

## Features:

- Guaranteed AC performance over temperature – - and voltage:
- DC-to >3.2Gbps throughput:
  - 210ps typical propagation delay (IN-to-Q)
  - <20ps within-device skew
  - <150ps rise/fall times
- Fail Safe Input
- Prevents outputs from oscillating
- Ultra-low jitter design:
  - <1psRMS cycle-to-cycle jitter
  - <10psPP total jitter
  - <1psRMS random jitter
  - <10psPP deterministic jitter
- High-speed LVDS outputs
- 2.5V ±5% power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 8-pin (2mm x 2mm) MLF® package





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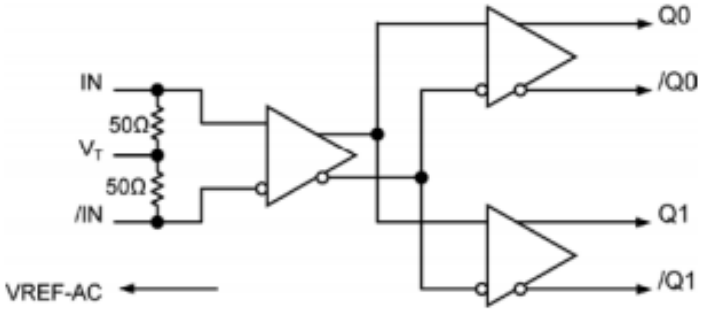
# SY89851U

Low Power, 3 GHz, 1:2 LVPECL Fanout Buffer/Translator

Online Datasheet

## Features:

- Precision 1:2, 800mV LVPECL fanout buffer
- Low power consumption: 80mW typ. (2.5V)
- Guaranteed AC performance over temperature –
  - and voltage:
    - DC to >3GHz clock throughput
    - <340ps propagation delay
    - <180ps rise/fall time
    - <20ps output-to-output skew
- Ultra-low jitter design:
    - <1psRMS random jitter
    - <10psPP deterministic jitter
    - <10ps PP total jitter (clock)
- Unique, patented input termination and VT pin accepts DC -
  - and AC-coupled inputs (CML, LVPECL, LVDS)
- 100K LVPECL-compatible outputs
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
    - –40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF® package





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# PL133-37

Low-Power, 1.62V to 3.63V, 1MHz to 150MHz, 1:3 Fanout Buffer IC

Online Datasheet

## Features:

- 3 LVCMOS Outputs
- 12mA Output Drive Strength
- Input/Output Frequency: Reference Clock: -- 1MHz to 150MHz
- Supports LVCMOS or Sine Wave Input -- Clock
- Very Low Jitter and Phase Noise
- Low Current Consumption
- Single 1.8V, 2.5V or 3.3V ±10% operation
- Operating Temperature Range:
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C
- Available in SOT23-6L packages





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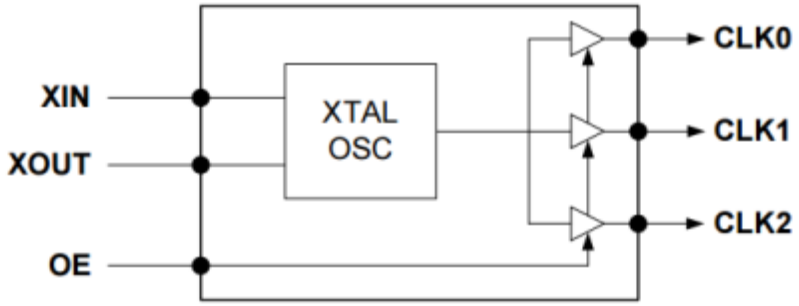
# PL135-37

Low Power 10MHz to 40MHz 1:3 Oscillator Fanout Buffer

Online Datasheet

## Features:

- Advanced Oscillator Design for Wide –
  - Frequency Coverage
- 3 LVCMOS Outputs
- 12mA Output Drive Strength
- Input/Output Frequency:
  - Fundamental Crystal: 10MHz to 40MHz
- Very Low Jitter and Phase Noise
- Low Current Consumption
- Single 1.62V to 3.63V Power Supply
- Available in SOP-8L package





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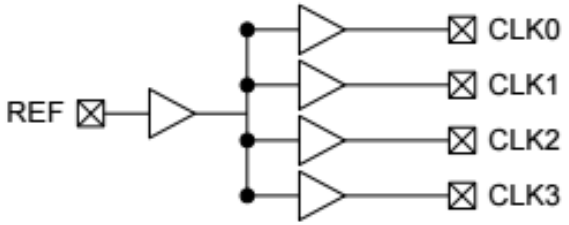
# PL133-47

Low-Power 2.25V to 3.63V DC to 150MHz 1:4 Fanout Buffer IC

Online Datasheet

## Features:

- 1:4 LVCMOS output fanout buffer for DC to150MHz
- Low Additive Phase Jitter of 60fs RMS
- 8mA Output Drive Strength
- Low power consumption for portable applications
- Low input-output delay
- Output-Output skew less than 250ps
- 2.5V to 3.3V ±10% operation
- Industrial temperature range:
  - -40°C to 85°C
- Available in 8-Pin SOP package





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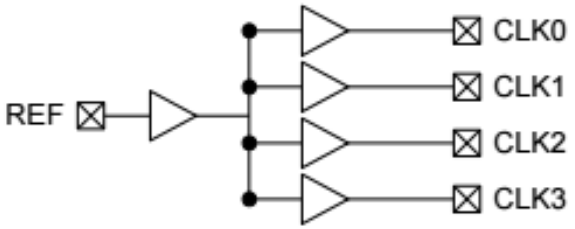
# PL138-48

2.5V to 3.3V, Low-Skew, 1:4 Differential PECL Fanout Buffer

Online Datasheet

## Features:

- Four differential 2.5V/3.3V LVPECL output -
  - pairs
- Output Frequency: ≤1GHz
- Two selectable differential input pairs
- Translates any standard single-ended or –
  - differential input format to LVPECL output
- Accepts standard input formats and more:
  - LVPECL, LVCMOS, LVDS, HCSL, SSTL, LVHSTL, CML
- Output Skew: 25ps (typ.)
- Part-to-part skew: 140ps (typ.)
- Propagation delay: 1.5ns (typ.)
- Additive Jitter: <100fs (typ.)
- Operating Supply Voltage: 2.375V ~ 3.63V
- Industrial temperature range:
  - -40°C to 85°C
- Package: 20-pin TSSOP





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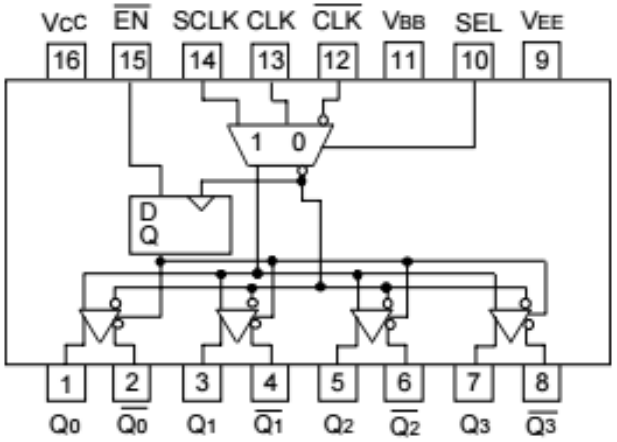
# SY100EL15L

3.3V 1:4 Clock Distribution

Online Datasheet

## Features:

- 3.3V power supply
- 50ps output-to-output skew
- Low power
- Synchronous enable/disable
- Multiplexed clock input
- 75KΩ internal input pull-down resistors
- Available in 16-pin SOIC package




SOIC
TOP VIEW

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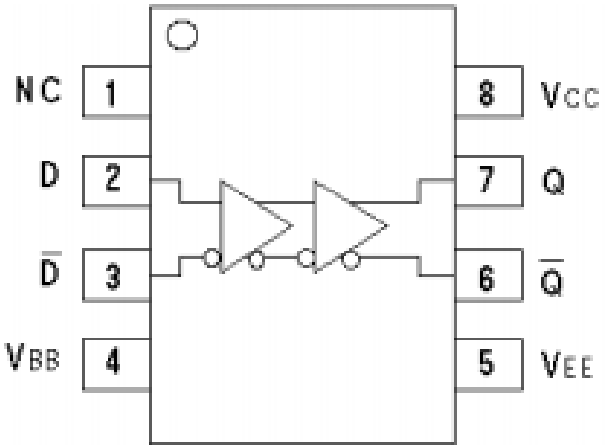
# SY100EL16V

5V/3.3V Differential Receiver

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 250ps propagation delay
- High bandwidth output transitions
- Internal 75KΩ input pull-down resistors
- Replaces SY10/100EL16
- Improved output waveform characteristics
- Available in 8-pin MSOP and SOIC package




**8-Pin MSOP (K8-1)**
**8-Pin SOIC (Z8-1)**


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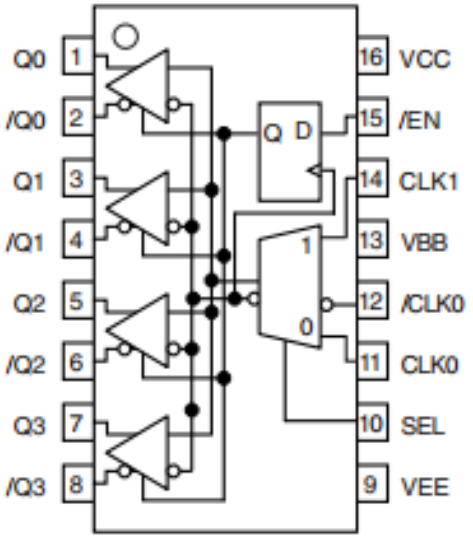
# SY100EP15V

3.3V/5V 2.5 GHz PECL/ECL 1:4 Fanout Buffer with 2:1 Input Mux

Online Datasheet

## Features:

- High-speed 1:4 PECL/ECL fanout buffer
- 2:1 multiplexer input
- Guaranteed AC parameters over temp/voltage:
  - >2.5GHz fMAX (toggle)
  - <225ps rise/fall times
  - <25ps within device skew
  - <425ps propagation delay (CLK-to-Q)
- Low jitter design:
  - <1psRMS cycle-to-cycle jitter
  - <20psPP total jitter
- Flexible power supply: 3.3V/5V
- Industrial temperature range:
  - –40°C to +85°C
- VBB reference for AC-coupled or single-ended applications
- Output enable/disable function
- 100K PECL/ECL compatible logic
- Input accepts PECL/LVPECL/ECL/HSTL logic levels
- Available in a 16-pin TSSOP package




**Available in 16-Pin TSSOP (K4-16-1)**


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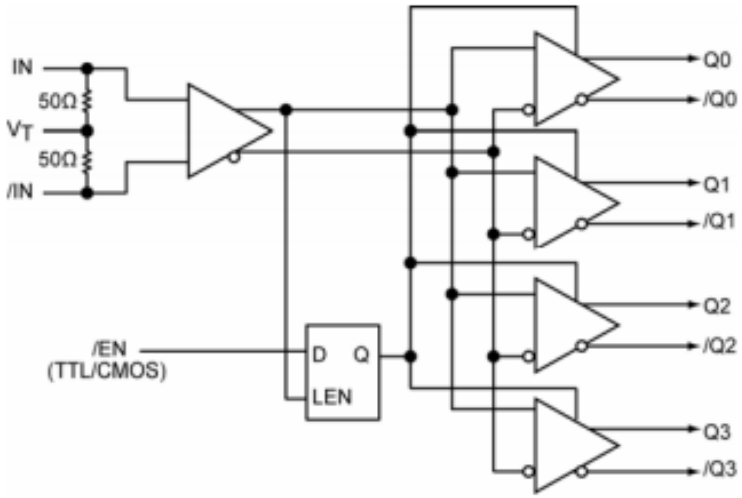
# SY54020A

3.2GHz Low Voltage 1:4 Fanout Buffer with /EN 3.2Gbps

Online Datasheet

## Features:

- 1.2V/1.8V/2.5V CML 1:4 Fanout Buffer
- Active-low Enable (/EN) input to disable the – - outputs
- Guaranteed AC performance over temperature – – and voltage:
  - DC-to- >3.2Gbps throughput
  - DC-to >3.2GHz Clock throughput
  - <320ps propagation delay (IN-to-Q)
  - <20ps within-device skew
  - <100ps rise/fall times
- Ultra-low jitter design:
  - <1psRMS cycle-to-cycle jitter
- High-speed CML outputs
- 2.5V ±5% $V_{CC}$, 1.2V/1.8V/2.5V ±5% $V_{CCO}$ – - power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF® package





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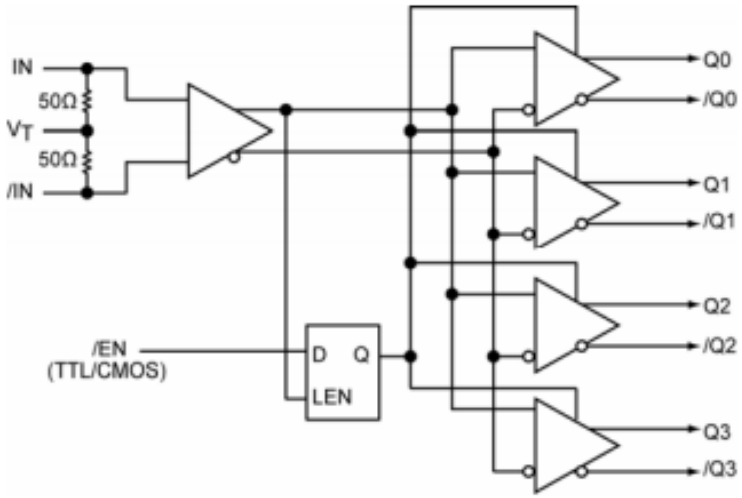
# SY54020R

## 2.5GHz Low Voltage 1:4 Fanout Buffer with /EN and Fail-Safe Input

Online Datasheet

### Features:

- 1.2V/1.8V/2.5V CML 1:4 Fanout Buffer w/ FSI
- Active-low Enable (/EN) input to disable the –
  - outputs
- Guaranteed AC performance over temperature –
  - and voltage:
    - DC-to- >3.2Gbps throughput
    - DC-to >2.5GHz Clock throughput
    - <400ps propagation delay (IN-to-Q)
    - <20ps within-device skew
    - <100ps rise/fall times
- Ultra-low jitter design:
    - <1psRMS cycle-to-cycle jitter
- High-speed CML outputs
- 2.5V ±5% VCC, 1.2V/1.8V/2.5V ±5% VCCO –
  - power supply operation
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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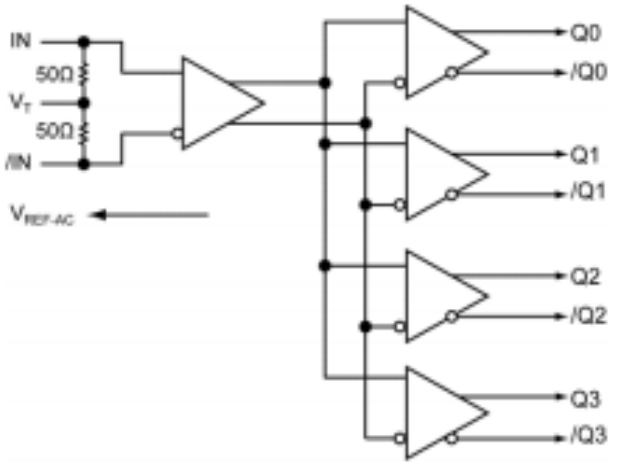
# SY6020R

Low Voltage 1:4 Fanout Buffer 6.4Gbps with Equalization

Online Datasheet

## Features:

- 1.2V/1.8V/2.5V CML 1:4 Fanout Buffer
- Equalizes 9, 18, 27 inches of FR4
- Guaranteed AC performance over temperature –
  - and voltage:
    - DC-to >6.4Gbps Data throughput
    - DC-to >4.5GHz Clock throughput
    - <280 ps propagation delay (IN-to-Q)
    - <15ps within-device skew
    - <90ps rise/fall times
- Ultra-low jitter design:
    - <1psRMS random jitter
- High-speed CML outputs
- 2.5V ±5% $V_{CC}$ , 1.2/1.8V/2.5V ±5% $V_{CCO}$ -
  - power supply operation
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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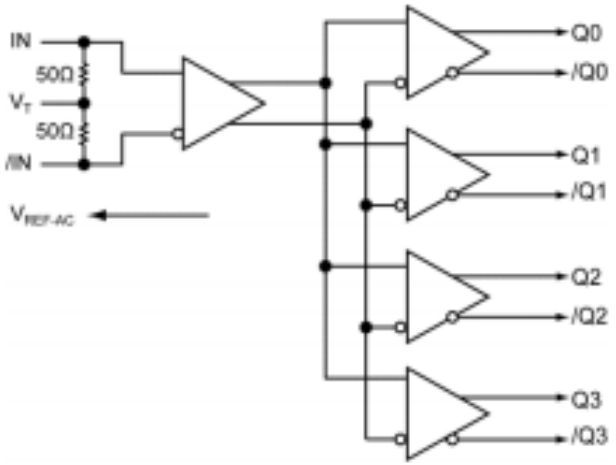
# SY58020U

6GHz, 1:4 CML Fanout Buffer/Translator with Internal I/O Termination

Online Datasheet

## Features:

- Precision 1:4, 400mV CML fanout buffer
- Guaranteed AC performance over –
  - temperature/voltage:
    - >6GHz fMAX clock
    - <60ps tr/tf times
    - <250ps tpd
    - <15ps max. skew
- Low jitter performance:
    - <10pspp total jitter (clock)
    - <1psrms random jitter (data)
    - <10pspp deterministic jitter (data)
- Accepts an input signal as low as 100mV
- Unique input termination and VTpin accepts DC coupled and AC-
  - coupled differential inputs: LVPECL, LVDS, and CML
- 50Ω source terminated CML outputs
- Power supply 2.5V ±5% and 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF® package





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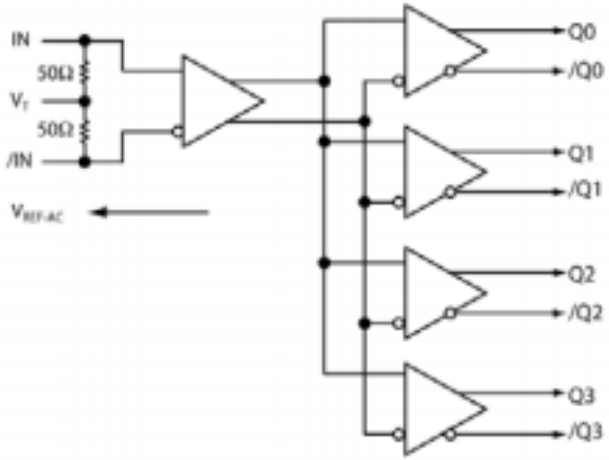
# SY58021U

4GHz, 1:4 LVPECL Fanout Buffer/Translator with Internal Termination

Online Datasheet

## Features:

- Precision 1:4 LVPECL fanout buffer
- Low jitter performance:
    - 70fsRMS phase jitter (typical)
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts -
  - DC-coupled and AC-coupled differential –
  - inputs:
    - LVPECL, LVDS, and CML
- 100k LVPECL-compatible 800mV swing output
- Power supply 2.5V ±5% and 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C range
- Available in 16-pin (3mm x 3mm) QFN package





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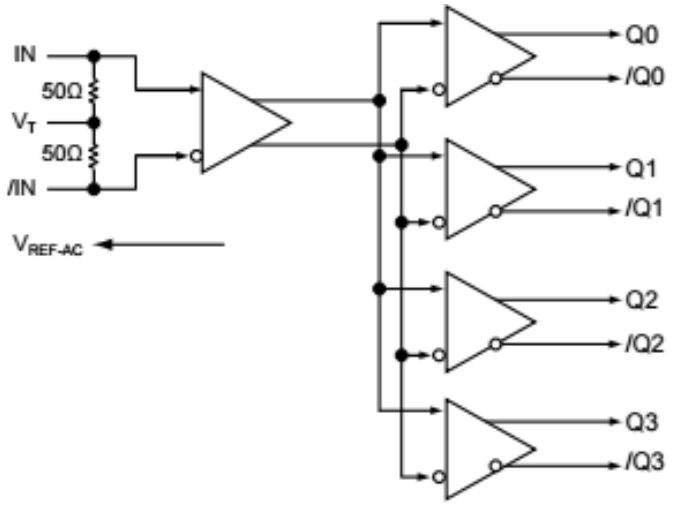
# SY58022U

5.5GHz 1:4 Fanout Buffer/ Translator w/400mV LVPECL Outputs

Online Datasheet

## Features:

- Precision 1:4, 400mV LVPECL fanout buffer
- Guaranteed AC performance over temperature –
  - and voltage:
    - > 5.5GHz fMAX clock
    - <80ps tr/tf times
    - <250ps ($V_{IN}$ ≥300mV) tpd
    - <15ps max. skew
- Low jitter performance:
    - 60fs RMS phase jitter
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts DC and -
  - AC-coupled differential inputs: LVPECL, LVDS and CML
- 400mV LVPECL compatible outputs
- Power supply 2.5V ±5% and 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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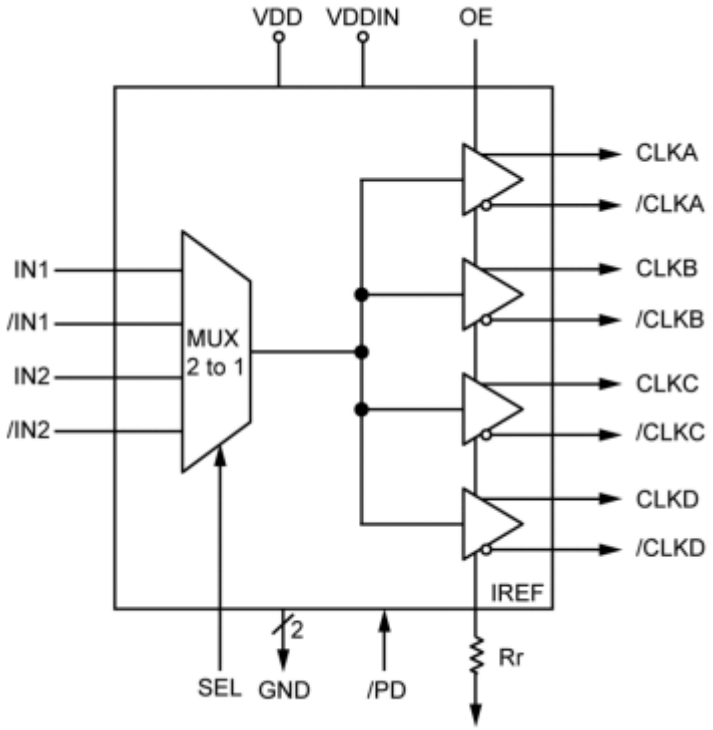
# SY75576L

267MHz 1:4 3.3V HCSL/LVDS Fanout Buffer Precision Edge™

Online Datasheet

## Features:

- Four differential pairs of LVDS or HCSL outputs
- Two pairs of differential inputs accept LVDS or – - HCSL logic levels
- 267MHz max HCSL frequency
- 100MHz max LVDS frequency
- Ultra low phase jitter:
  - 137fsrms, 200MHz (12kHz–20MHz)
  - 153fsrms, 156.25MHz (12kHz–20MHz)
  - 212fsrms, 100MHz (12kHz–20MHz)
- <2ps Total_Jitterpk-pk, 200MHz (BER = $10^{-12}$)
- 50ps output-to-output skew
- 3.3V ±5% power supply operation
- Industrial temperature range:
  - −40°C to +85°C
- Available in 20-pin TSSOP package




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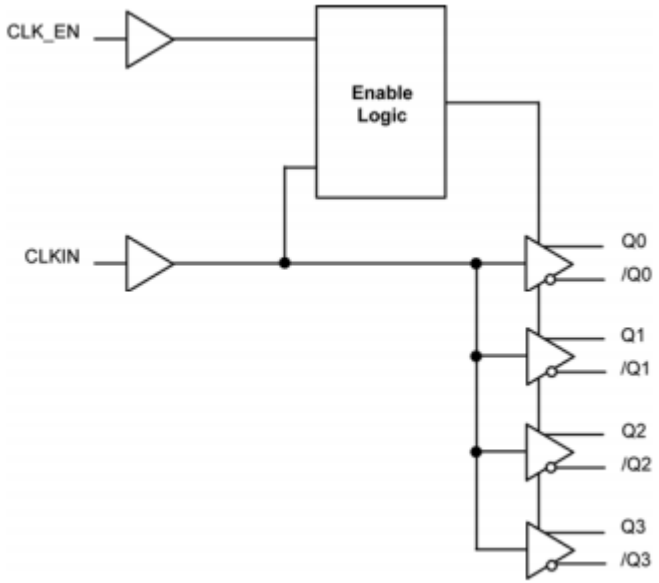
# SY89645L

Precision Low Skew, 1-to-4 LVCMOS/LVTTL-to-LVDS Fanout Buffer

Online Datasheet

## Features:

- Four identical LVDS outputs
- CLKIN accepts LVCMOS or LVTTL input levels
- Maximum output frequency: 650MHz
- Translates LVCMOS/LVTTL input signals to –
  - LVDS levels
- <40ps output-to-output skew
- <3ns propagation delay
- <400ps rise/fall times
- 3.3V ±5% operating supply
- Industrial temperature range:
  - -40°C to +85°C
- Available in 20-pin TSSOP





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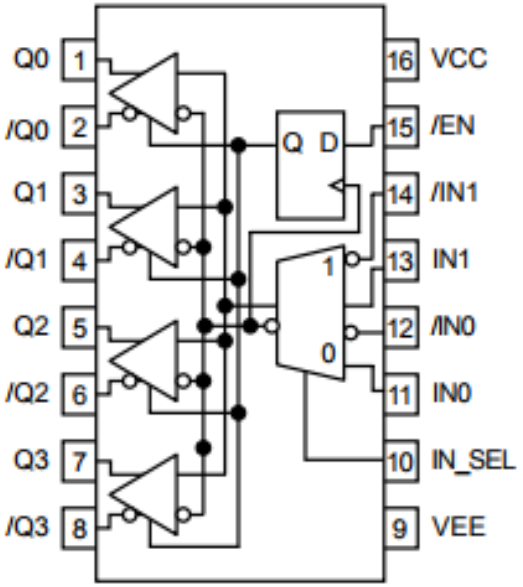
# SY89830U

2.5GHz 1:4 PECL/ECL Clock Driver with 2:1 MUX

Online Datasheet

## Features:

- Guaranteed AC parameters over temp/voltage:
  - >2.5GHz fMAX
  - <25ps within-device skew
  - <225ps tr/tf time
  - <450ps prop delay
- Low jitter design:
  - <1psRMS cycle-to-cycle jitter
  - <15psPP total jitter
- 2:1 Differential MUX input
- Flexible supply voltage: 2.5V/3.3V/5V
- Wide operating temperature range:
  - -40°C to +85°C
- 100K ECL compatible outputs
- Inputs accept PECL/LVPECL/ECL/HSTL logic levels
- Available in a 16-pin TSSOP package




16-Pin TSSOP (T32-1)

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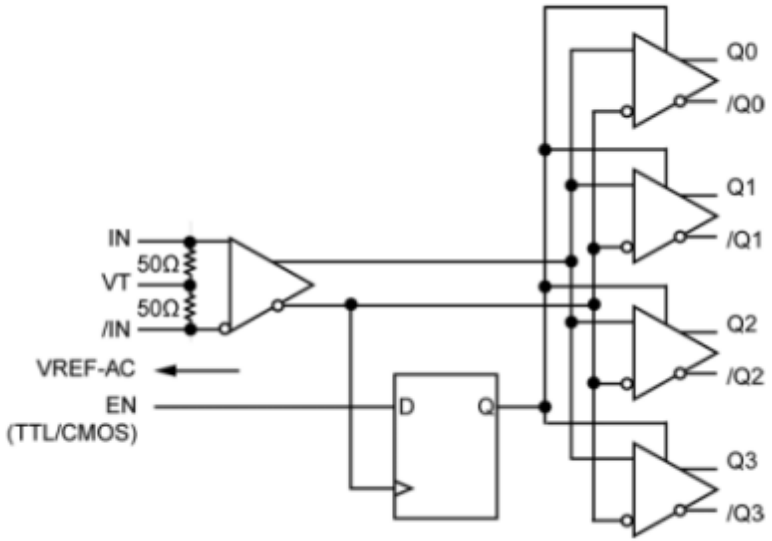
# SY89831U

Ultra-Precision 1:4 LVPECL Fanout Buffer/Translator

Online Datasheet

## Features:

- Guaranteed AC performance over temperature –
  - and voltage:
    - DC-to-2.5GHz throughput (typical)
    - 350ps propagation delay (IN-to-Q) (typical)
    - 5ps within-device skew (typical)
    - 150ps rise/fall time (typical)
- Ultra-low jitter design:
    - 62fsRMS phase jitter (typical)
- Unique patent-pending input termination and –
  - VT pin accepts DC- and AC-coupled –
  - differential inputs
- 800mV, 100K LVPECL typical output swing
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) MLF® package





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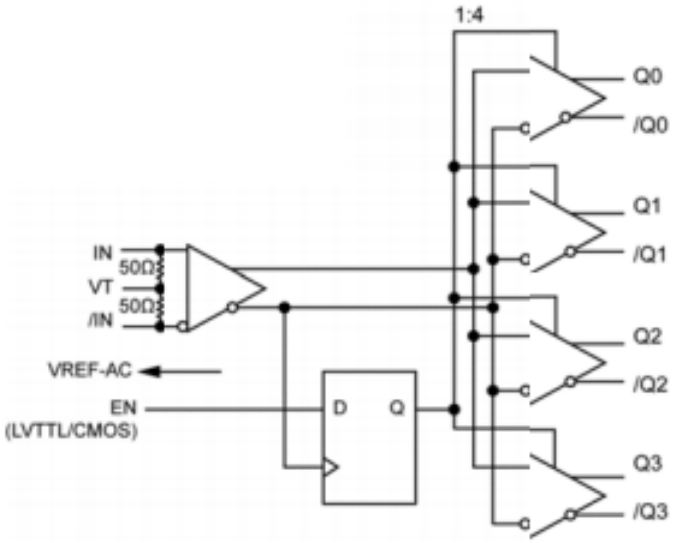
# SY89832U

2.5V Ultra-Precision 1:4 LVDS Fanout Buffer/Translator

Online Datasheet

## Features:

- Guaranteed AC performance over temperature –
  - and voltage:
    - DC-to >2.0GHz throughput
    - <570ps propagation delay (IN-to-Q)
    - <20ps within-device skew
    - <200ps rise/fall time
- Ultra-low jitter design:
    - 81fsRMS phase jitter
- Unique, patent-pending input termination and –
  - VT pin accepts DC- and AC-coupled inputs
- High-speed LVDS outputs
- 2.5V voltage supply operation
- Industrial temperature range:
    - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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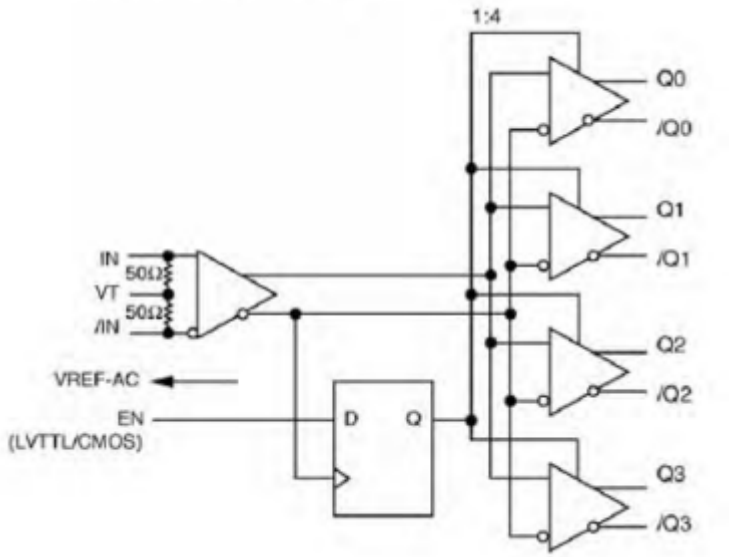
# SY89833AL

3.3V Low Noise Ultra-Precision 1:4 LVDS Fanout Buffer/Translator

Online Datasheet

## Features:

- Guaranteed AC performance over temperature -– and voltage:
  - DC-to >2.0GHz throughput
  - <470ps propagation delay (IN-to-Q)
  - <20ps within-device skew
  - <190ps rise/fall time
- Improved ultra-low jitter design:
  - 195fsRMS phase jitter (typ.)
- Unique input termination and VT pin accepts –- DC- and AC-coupled inputs
- High-speed LVDS outputs
- 3.3V power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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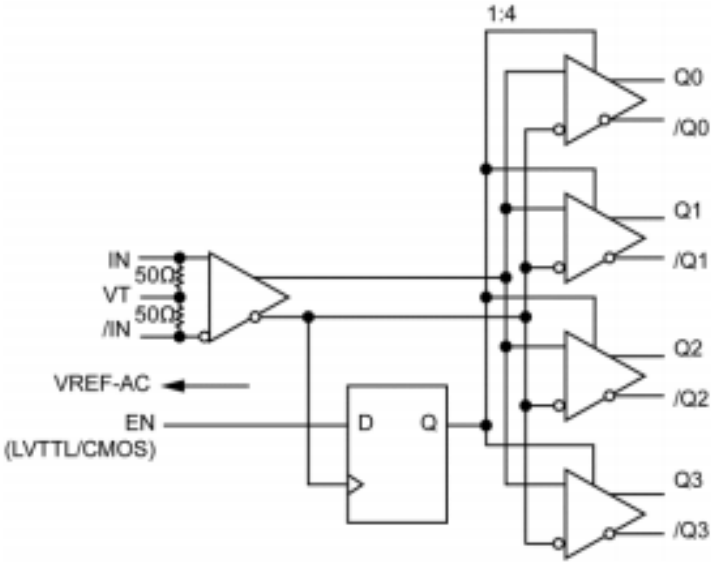
# SY89833L

3.3V Ultra-Precision 1:4 LVDS Fanout Buffer/Translator

Online Datasheet

## Features:

- Guaranteed AC performance over temperature – and voltage:
- DC-to >2GHz throughput:
  - <600ps propagation delay (IN-to-Q)
  - <20ps within-device skew
  - <190ps rise/fall times
- Ultra-low jitter design:
- 98fsRMS phase jitter
- Unique input termination and VTpin accepts -- DC and AC-coupled inputs
- High-speed LVDS outputs
- 3.3V power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 16-pin (3mm x 3mm) QFN package





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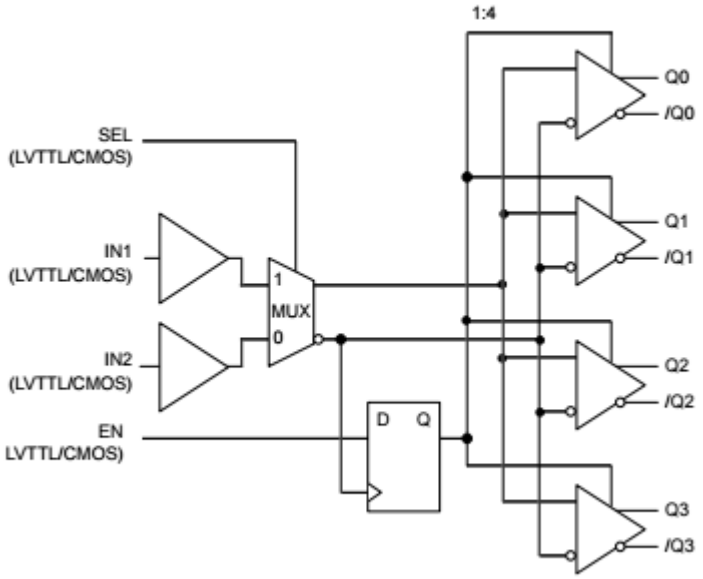
# SY89834U

Two Input, 1GHz LVTTL/CMOS-TO-LVPECL 1:4 Fanout Buffer/Translator

Online Datasheet

## Features:

- Selects between two LVTTL/CMOS inputs and –
  - provides
- 4 LVPECL output copies
- Guaranteed AC performance over temperature –
  - and voltage:
    - DC-to >1.0GHz throughput
    - <500ps propagation delay (IN-to-Q)
    - <20ps within-device skew
    - <225ps rise/fall time
- Ultra-low jitter design:
    - <1psRMS cycle-to-cycle jitter
    - <1psRMS random jitter
    - <10psPP deterministic jitter
    - <10psPP total jitter (clock)
- Low voltage 2.5V and 3.3V supply operation
- 100K LVPECL outputs
- Industrial temperature range:
    - -40°C to +85°C
- Includes a 2:1 MUX select input
- Available in 16-pin (3mm x 3mm) MLF® package





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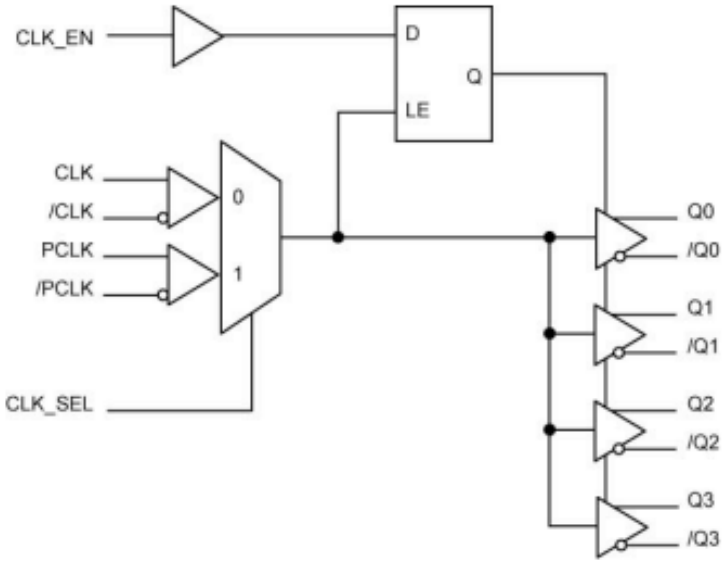
# SY898533L

Precision Differential 3.3V Low Skew LVPECL 1:4 Fanout Buffer

Online Datasheet

## Features:

- Provides four differential 3.3V LVPECL copies
- Selects between differential CLK, /CLK or –
  - LVPECL clock inputs
- CLK, /CLK pair accepts LVDS, LVPECL, -
  - LVHSTL, SSTL, HCSL input levels
- PCLK, /PCLK pair accepts LVPECL, CML, -
  - SSTL input levels
- Guaranteed AC performance over temperature –
  - and supply voltage:
    - 650MHz Maximum output frequency
    - <1.4ns Propagation delay (In-to-Q)
    - <30ps Output skew
    - <150ps Part-to-part skew
- Additive phase jitter, RMS: 0.06ps (typical)
- 3.3V ±5% supply voltage
- Commercial temperature range:
    - 0°C to +70°C
- Available in a 20-pin TSSOP package





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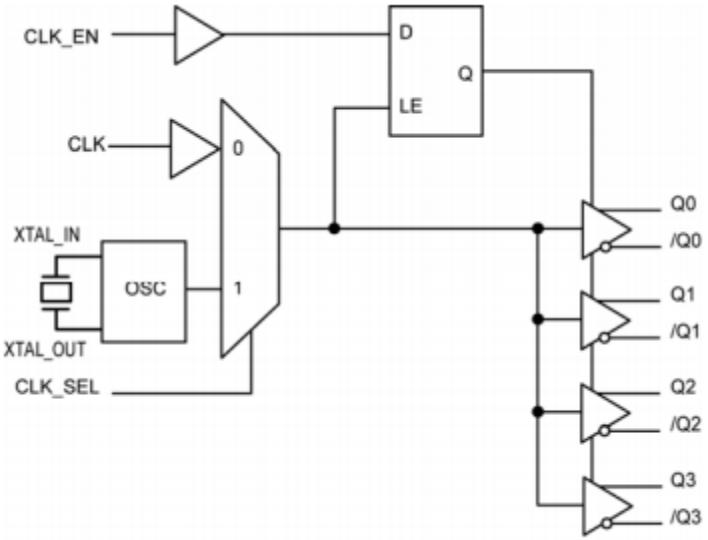
# SY898535XL

Precision Differential 3.3V, Low Skew, 1:4 Fanout Buffer

Online Datasheet

## Features:

- Provides four differential 3.3V LVPECL copies
- Selects between single-ended CLK or crystal – - inputs
- CLK accepts LVCMOS or LVTTL input levels
- Guaranteed AC performance over temperature – - and supply voltage:
  - 235MHz Maximum output frequency
  - <1.65ns Propagation delay (In-to-Q)
  - <30ps Output skew
  - <200ps Part-to-part skew
- Additive phase jitter, RMS: 0.09ps (typical)
- 3.3V ±5% supply voltage
- Industrial temperature range:
  - –40°C to +85°C
- Available in a 20-pin TSSOP package





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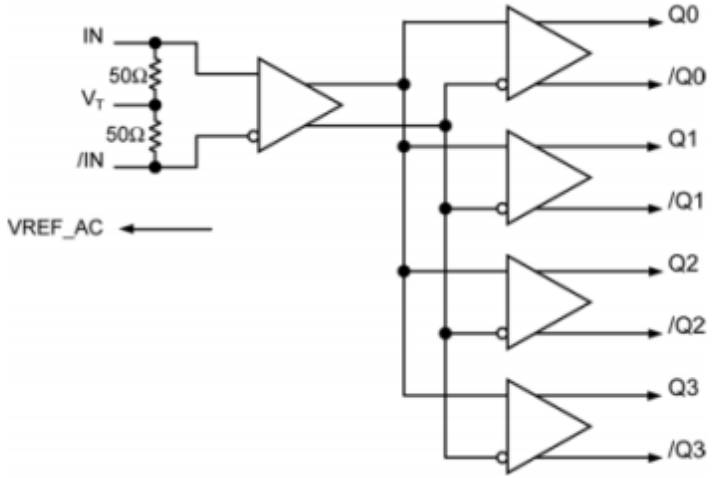
# SY89854U

**Precision Low Power 1:4 LVPECL Fanout Buffer/Translator**

Online Datasheet

## Features:

- Precision 1:4, LVPECL fanout buffer
- Low power: 137mW (2.5V typ)
- Guaranteed AC performance over temperature – - and supply voltage:
  - DC- to >2GHz Clock fMAX
  - <340ps tpd
  - <180ps tr/tf time
  - <20ps max. skew
- Ultra-low jitter design:
  - <1psrms random jitter
  - <10pspp deterministic jitter
  - <10pspp total jitter (clock)
- Unique patent pending input termination and VT pin accepts
- DC-coupled and AC-coupled inputs (CML, PECL, LVDS)
- Typical 800mV (100k) LVPECL output swing
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in ultra-small (3mm x 3mm) 16-pin QFN package





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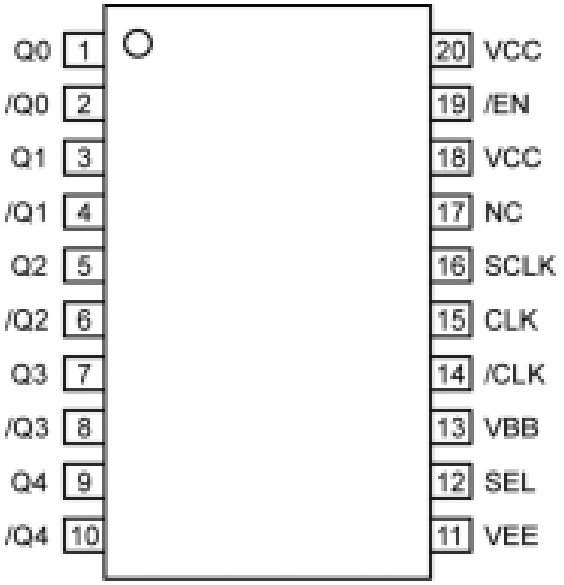
# SY100EL14

5V/3.3V 1:5 Clock Distribution

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 70fsRMS typical additive phase jitter
- Typical 30ps output-to-output skew
- Max. 50ps output-to-output skew
- Synchronous enable/disable
- Multiplexed clock input
- 75KΩ internal input pull-down resistors
- Available in 20-pin SOIC package




20-Pin Narrow SOIC
(Top View)


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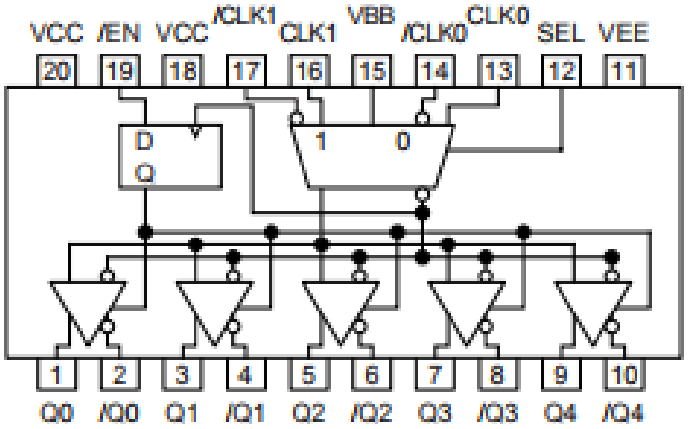
# SY100EP14U

2.5V/3.3V/5V 1:5 2GHz Clock Driver with 2:1 MUX

Online Datasheet

## Features:

- Guaranteed AC parameters over –
  - temp/voltage:
    - >2GHz fMAX
    - <25ps within-device skew
    - <275ps tr/tf time
    - <525ps prop delay
- 2:1 Differential MUX input
- Flexible supply voltage: 2.5V/3.3V/5V
- Wide operating temperature range:
    - -40°C to +85°C
- VBB reference for single-ended or AC –
  - coupled PECL inputs
- 100K ECL compatible outputs
- Inputs accept PECL/LVPECL/ECL/HSTL logic
- 75k internal input pull-down resistors
- Available in a 20-Pin TSSOP package




**20-Pin TSSOP**


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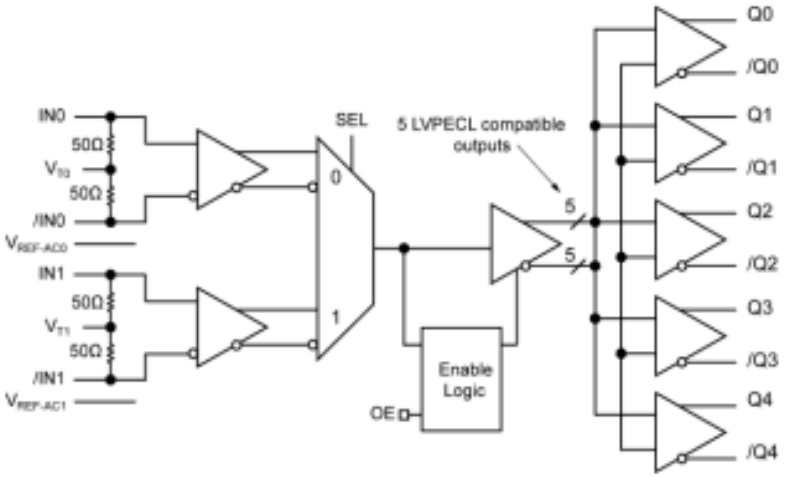
# SY89846U

1.5GHz Precision, LVPECL 1:5 Fanout with 2:1 MUX and Fail Safe Input

Online Datasheet

## Features:

- Select from two inputs and provides 5 copies
- Fail-Safe Input:
  - Prevents outputs from oscillating when –
    - input is invalid
- AC performance:
  - DC-to >1.5GHz throughput
  - <900ps Propagation Delay (IN-to-Q)
  - <250ps Rise/Fall times
- Ultra-low jitter design:
  - 150fsRMS phase jitter (typ.)
  - <0.7psRMS MUX crosstalk induced jitter
- Unique, patented MUX input isolation design –
  - minimizes adjacent channel crosstalk
- Patented internal termination & VT pin accepts –
  - DC- and AC-coupled inputs (CML, PECL, LVDS)
- Wide input voltage range. $V_{CC}$ to GND
- 2.5V ±5% or 3.3 ±10% supply voltage
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) QFN package




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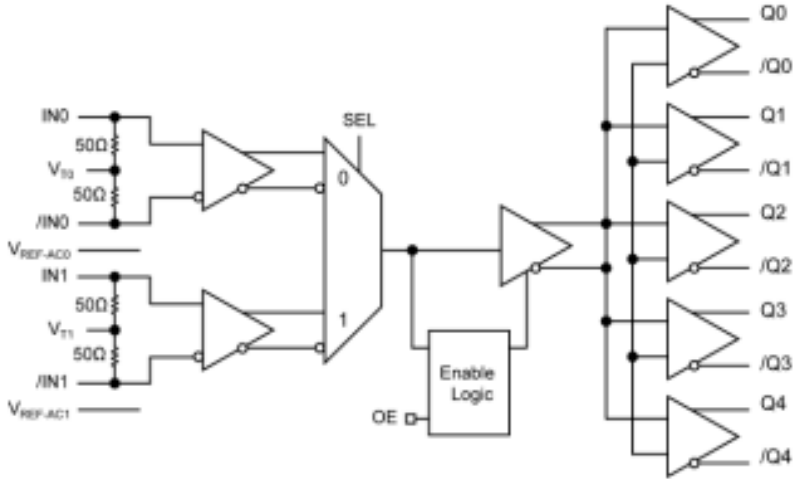
# SY89847U

1.5GHz Precision, LVDS 1:5 Fanout with 2:1 MUX and Fail Safe Input

Online Datasheet

## Features:

- Selects between two sources and provides 5 precision LVDS copies
- Fail-Safe Input:
  - Prevents outputs from oscillating when –
    - input is invalid
- AC performance:
  - DC-to >1.5GHz throughput
  - <1000ps Propagation Delay (IN-to-Q)
  - <210ps Rise/Fall times
- Ultra-low jitter design:
  - 150fsRMS phase jitter (typ.)
  - <0.7psRMS MUX crosstalk induced jitter
- Unique, patented MUX input isolation design –
  - minimizes adjacent channel crosstalk
- Unique, patented internal termination and VT pin accepts DC and AC-coupled inputs (CML, PECL, LVDS)
- Wide input voltage range $V_{CC}$ to GND
- 2.5V ±5% supply voltage
- Industrial temperature range: -40°C to +85°C
- Available in 32-pin (5mm x 5mm) QFN package





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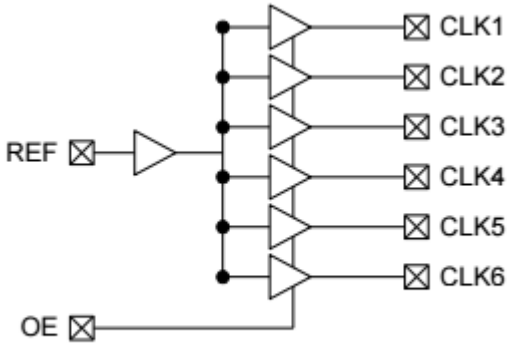
# PL133-67

Low-Power DC to 150MHz 1:6 Fanout Buffer IC

Online Datasheet

## Features:

- 1:6 LVCMOS output fanout buffer for DC to150MHz
- 8mA Output Drive Strength
- Low power consumption for portable applications
- Low input-output delay
- Output-Output skew less than 250ps
- Low Additive Phase Jitter of 60fs RMS
- 2.5V to 3.3V ±10% operation
- Industrial temperature range:
  - -40°C to 85°C
- Available in 16-Pin SOP package





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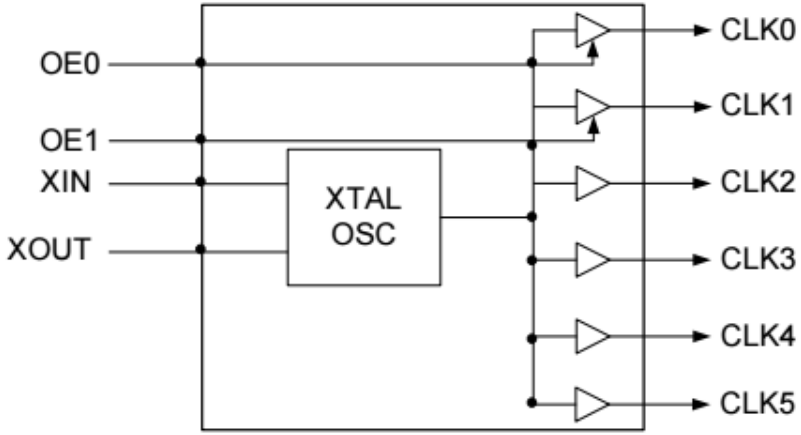
# PL135-67

Low Power, 10MHz to 40MHz, 1:6 Oscillator Fanout Buffer

Online Datasheet

## Features:

- Advanced Oscillator Design for Wide –
  - Frequency Coverage
- 6 LVCMOS Outputs with 2 Output Enable Pins
- 8mA Output Drive Strength
- Input/Output Frequency:
- Fundamental Crystal: 10MHz to 40MHz
- Very Low Jitter and Phase Noise
- Low Current Consumption
- Single 1.62V to 3.63V Power Supply
- Available in QFN-16L and TSSOP-16L packages





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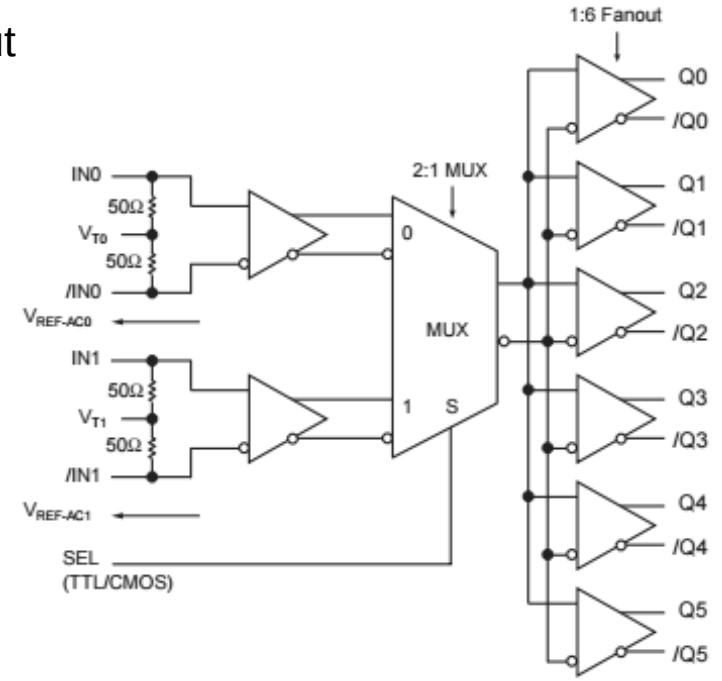
# SY58034U

6GHz, 1:6 CML Fanout Buffer with 2:1 MUX Input

Online Datasheet

## Features:

- Provides six ultra-low skew copies of the selected input
- 2:1 MUX input included for clock switchover –
  - applications
- Guaranteed AC performance over temperature and –
  - voltage:
- Clock frequency range: DC to >6GHz
  - <290ps IN-to-OUT tpd
  - <60ps tr/tf times
  - <20ps skew (output-to-output)
- Unique input isolation design minimizes crosstalk
- Ultra low-jitter design:
  - 60fs RMS phase jitter
  - <0.7psRMS crosstalk-induced jitter
- Low supply voltage operation: 2.5V and 3.3V
- Unique input termination and VT pin accepts DC-coupled -
  - and AC-coupled inputs (CML, PECL, LVDS)
- Internal 50Ω output source termination
- 400mV CML output swing
- Industrial temperature range: -40°C to +85°C
- Available in 32-pin (5mm x 5mm) QFN package





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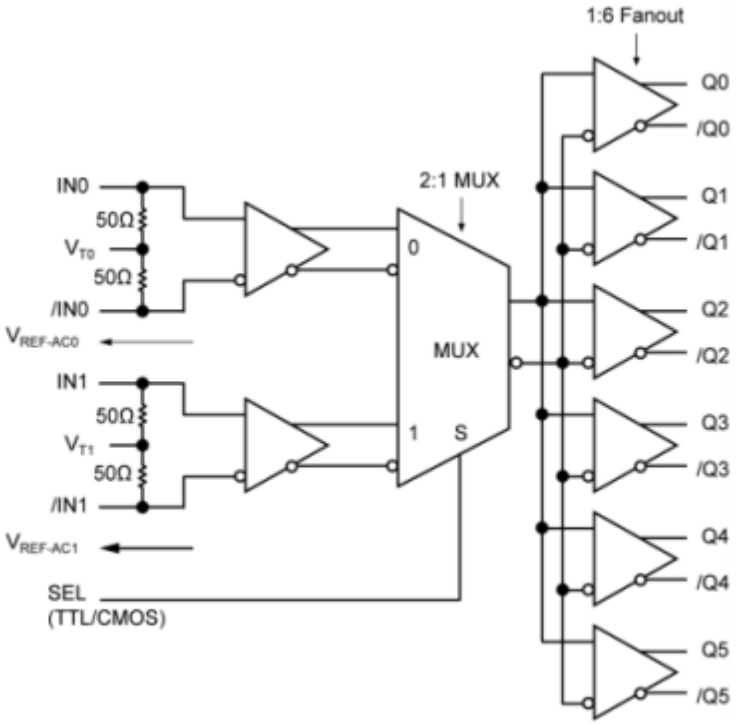
# SY58035U

4.5GHz, 1:6 LVPECL Fanout Buffer with 2:1 MUX Input

Online Datasheet

## Features:

- Provides six ultra-low skew copies of the selected – - input
- 2:1 MUX input included for clock switchover – - applications
- Guaranteed AC performance over temperature and – – voltage:
  - Clock frequency range: DC to >4.5GHz
  - <320ps IN-to-OUT tpd
  - <110ps tr/tf times
  - <20ps skew (output-to-output)
- Ultra-low jitter design:
  - 50fsRMS phase jitter (typ)
- Low supply voltage operation: 2.5V and 3.3V
- Unique input termination and VTpin accepts DC – - coupled and AC-coupled inputs (CML, PECL, LVDS)
- Unique input isolation design minimizes crosstalk
- 100K LVPECL compatible output swing
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) MLF® package





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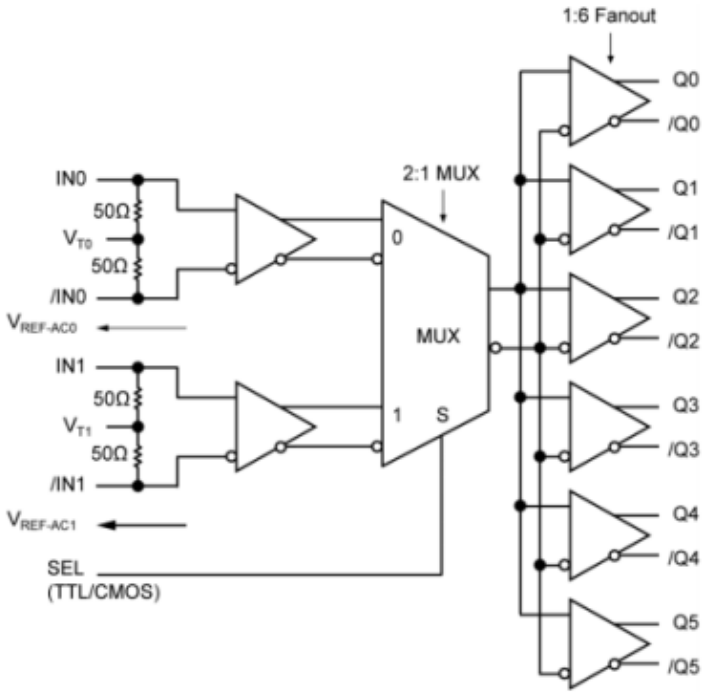
# SY58036U

6GHz, 1:6 400mV LVPECL Fanout Buffer with 2:1 MUX Input

Online Datasheet

## Features:

- Provides six ultra-low skew copies of the selected –
  - input
- 2:1 MUX input included for clock switchover –
  - applications
- Guaranteed AC performance over temperature and –
  - voltage:
    - Clock frequency range: DC to >6GHz
    - <300ps IN-to-OUT tpd
    - <80ps tr/tf times
    - <20ps skew (output-to-output)
- Ultra-low jitter design:
    - 50fsRMS phase jitter (typ)
- Low supply voltage operation: 2.5V and 3.3V
- Unique input termination and VTpin accepts DC –
  - coupled and AC-coupled inputs (CML, PECL, LVDS)
- Unique input isolation design minimizes crosstalk
- 400mV LVPECL (100K compatible) output swing
- Industrial temperature range:
    - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) MLF® package




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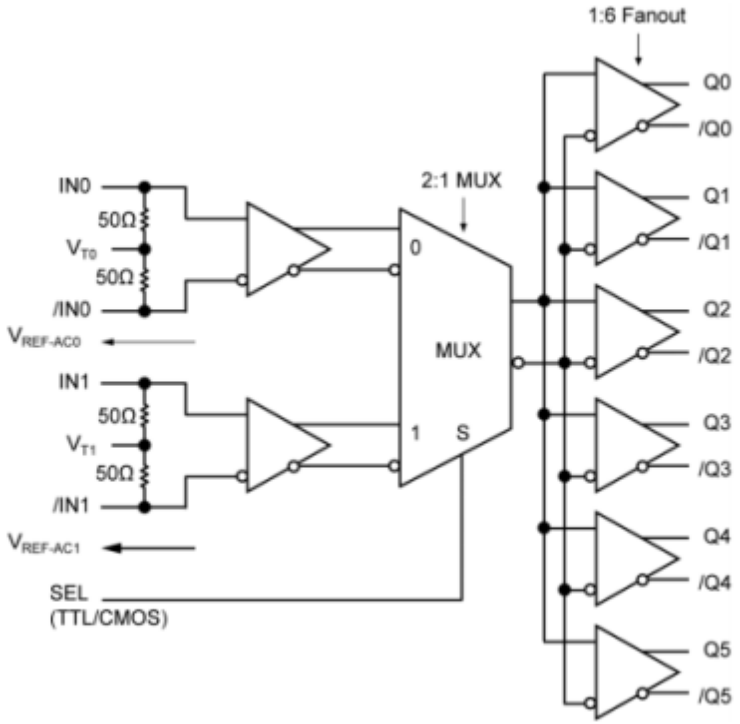
# SY89856U

2GHz, Low-Power, 1:6 LVPECL Fanout Buffer with 2:1 Input MUX

Online Datasheet

## Features:

- 6 ultra-low skew copies of the selected input
- 2:1 MUX input included for clock switchover – - applications
- Low power: 225mW typical (2.5V)
- 2.5V to 3.3V supply voltage
- Unique input isolation design minimizes crosstalk
- Guaranteed AC performance over temperature and – voltage:
  - Clock frequency range: DC to >2.0GHz
  - <400ps IN-to-OUT tpd
  - <200ps tr/tf times
  - <30ps skew (output-to-output)
- Ultra-low jitter design:
  - 40fsRMS phase jitter
  - <0.7psRMS crosstalk-induced jitter
- Unique input termination and VT pin accepts DC – - and AC-coupled inputs (CML, PECL, LVDS)
- 100k LVPECL compatible output swing
- Industrial temperature range: -40°C to +85°C range
- Available in 32-pin (5mm x 5mm) QFN package




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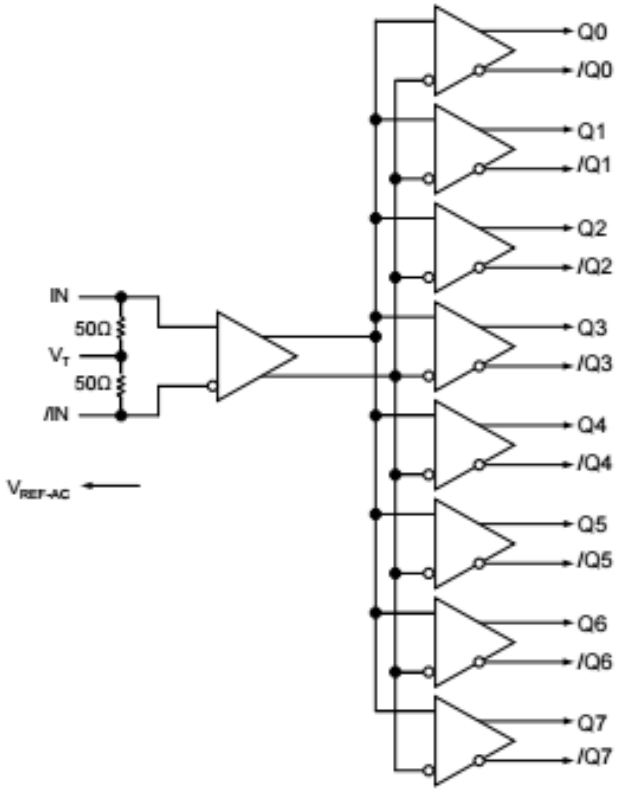
# SY58031U

Ultra-Precision 1:8 CML Fanout Buffer

Online Datasheet

## Features:

- Precision 1:8, 400mV CML fanout buffer
- Guaranteed AC performance over temperature –
  - and voltage:
    - Clock frequency range: DC to >6GHz
    - <60ps tr/tf time
    - <270ps tpd
    - <20ps ouput-to-output skew
- Low-jitter performance:
    - 75fsRMS phase jitter (typ)
- 50Ω source-terminated CML outputs
- 400mV CML output swing into 50Ω load
- Fully differential I/O
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts –
  - DC-coupled and AC-coupled differential inputs: -
  - (LVPECL, LVDS, and CML)
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) MLF® package





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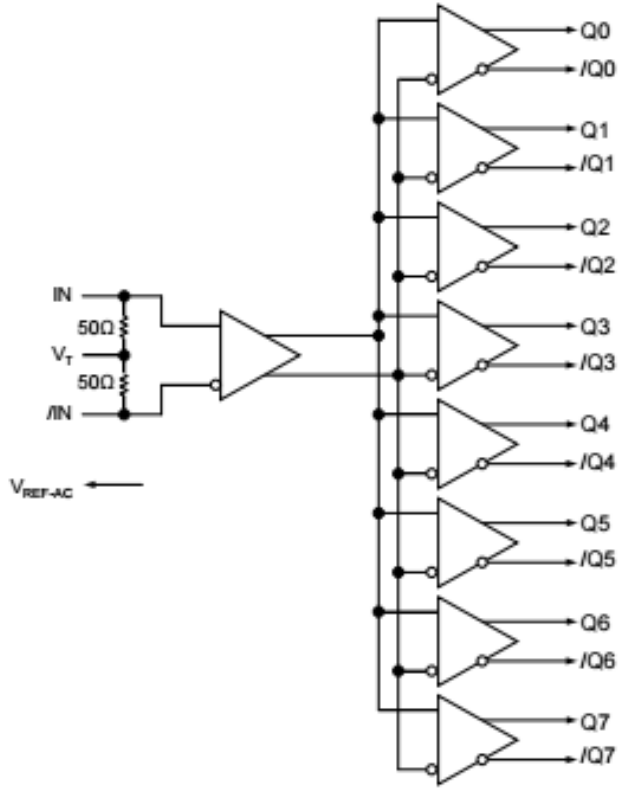
# SY58032U

Ultra-Precision 1:8 Fanout Buffer with LVPECL Outputs

Online Datasheet

## Features:

- Precision 1:8, LVPECL fanout buffer
- Guaranteed AC performance over temperature –
  - and voltage:
    - Clock frequency range: DC to 4GHz
    - <110ps tr/tf time
    - <330ps tpd
    - <20ps skew
- Low-jitter performance:
    - 76fsRMS phase jitter (typ)
- 100k LVPECL compatible outputs
- Fully differential inputs/outputs
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts DC -
  - coupled and AC-coupled differential inputs: -
  - LVPECL, LVDS, and CML
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
    - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) MLF® package





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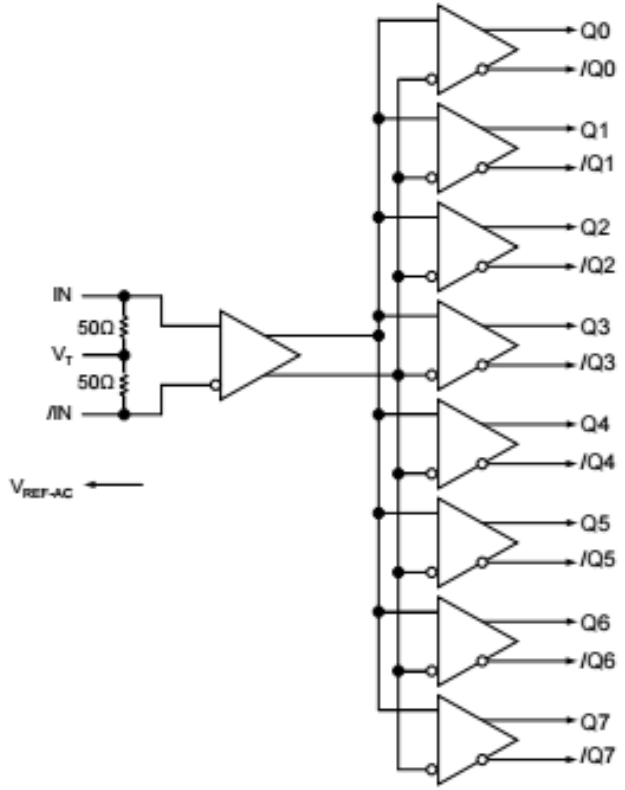
# SY58033U

Ultra-Precision 1:8 Fanout Buffer with 400mV LVPECL Outputs

Online Datasheet

## Features:

- Precision 1:8, 400mV LVPECL fanout buffer
- Guaranteed AC performance over temperature –
  - and voltage:
- Clock frequency range: DC to 5.5GHz:
  - <80ps tr/tf times
  - <280ps tpd
  - <20ps skew
- Low-jitter performance:
  - 76fsRMS phase jitter (typ)
  - "top" >100k LVPECL compatible outputs
- Fully differential inputs/outputs
- Accepts an input signal as low as 100mV
- Unique input termination and VT pin accepts –
  - DC-coupled and AC-coupled differential inputs: -
  - LVPECL, LVDS, and CML
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) MLF® package





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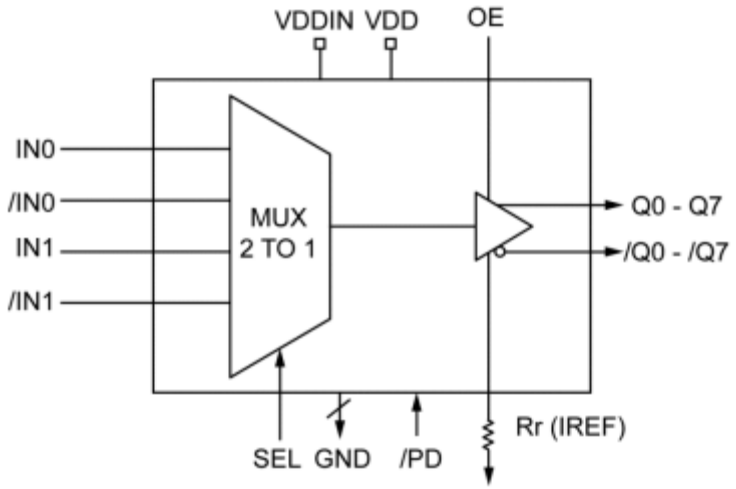
# SY75578L

PCIe Fanout Buffer 267MHz, 8 HCSL Outputs with 2 Input MUX

Online Datasheet

## Features:

- Eight differential pairs of HCSL outputs
- Two pairs of differential inputs accept LVDS – - or HCSL logic levels
- 267MHz max frequency
- Ultra low phase jitter:
  - 130fsRMS phase jitter (typ)
- <100ps output-to-output skew
- 3.3V power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin QFN package




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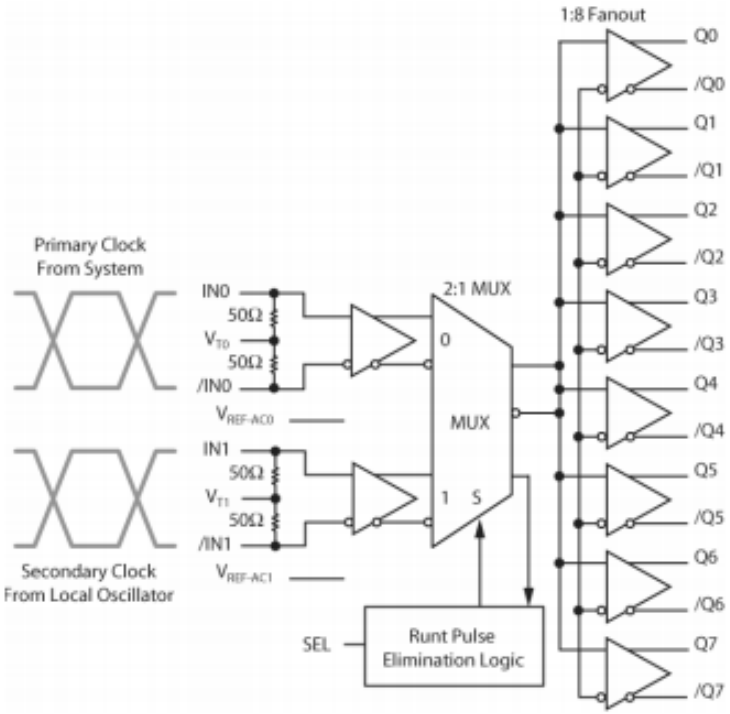
# SY89837U

**Precision 1:8 LVPECL Fanout Buffer with 2:1 Runt Pulse Eliminator MUX**

Online Datasheet

## Features:

- Selects between two clocks, and provides 8 –
  - precision, low skew LVPECL output copies
- Guaranteed AC performance over temperature –
  - and supply voltage:
- Wide operating frequency: 1kHz to >1.5GHz
  - <975ps in-to-out tpd
  - <180ps tr/tf
  - <40ps output-to-output skew
- Unique input isolation design minimizes crosstalk
- Ultra-low jitter design:
  - 150fs RMS phase jitter
  - <0.7psRMS MUX crosstalk-induced jitter
- Unique input termination and VTpin accepts DC –
  - or AC-coupled inputs (CML, PECL, LVDS)
- 800mV LVPECL output swing
- Power supply +2.5V ±5% or +3.3V ±10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin (5mm x 5mm) QFN package





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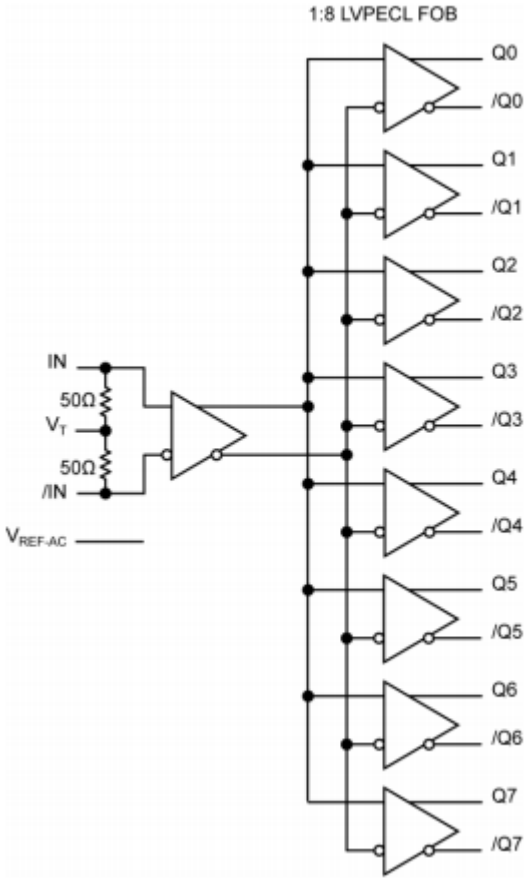
# SY89858U

**Precision Low Power 1:8 LVPECL Fanout Buffer**

Online Datasheet

## Features:

- Precision 1:8, LVPECL fanout buffer
- Low power: 238mW (2.5V)
- Guaranteed AC performance over temperature -
  - and supply voltage:
    - Wide operating frequency: DC to 2.0GHz
    - <380ps In-to-Out tpd
    - <200ps tr/tf
    - <30ps skew
- Ultra-low jitter design:
    - 710fsRMS phase jitter (typ.)
- 100k LVPECL compatible outputs
- Fully differential inputs/outputs
- Accepts an input signal as low as 100mV –
  - (200mVpp)
- Unique input termination and VT pin accepts -
  - DC-coupled and AC-coupled differential inputs -
  - (LVPECL, LVDS, and CML)
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:-40°C to +85°C
- Available in 32-pin (5mm x 5mm) QFN package





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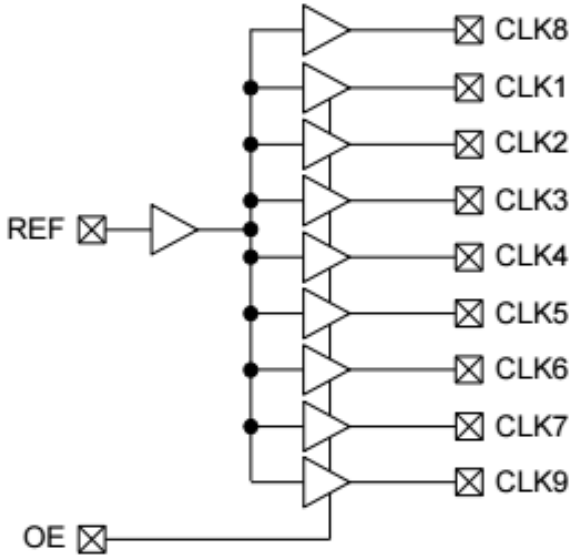
# PL133-97

Low-Power DC to 150MHz 1:9 Fanout Buffer IC

Online Datasheet

## Features:

- 1:9 LVCMOS output fanout buffer for DC to 150MHz
- 8mA Output Drive Strength
- Low power consumption for portable applications
- Low input-output delay
- Output-Output skew: <250ps
- Low Additive Phase Jitter: 60fs RMS
- 2.5V to 3.3V ±10% operation
- Industrial temperature range:
  - -40°C to 85°C
- Available in 16-Pin QFN package





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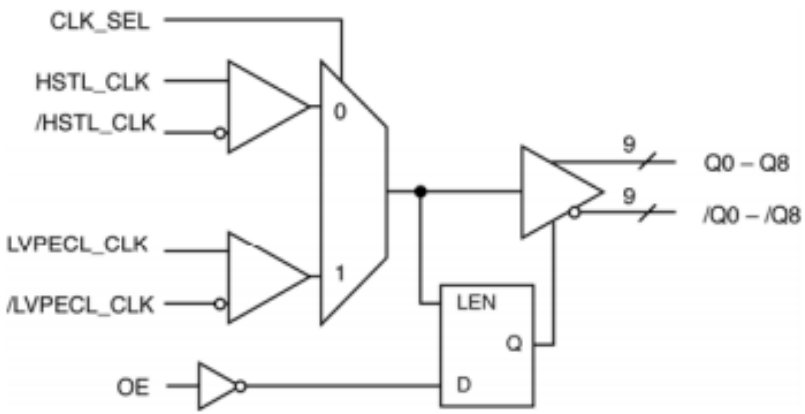
# SY89809AL

3.3V LVPECL/HSTL to HSTL 1:9 High Performance Clock Driver

Online Datasheet

## Features:

- 3.3V core supply, 1.8V output supply for –
  - reduced power
- LVPECL and HSTL inputs
- Nine differential HSTL (low-voltage swing) –
  - output pairs
- HSTL outputs drive 50Ω-to-ground with no –
  - offset voltage
- 750MHz maximum clock frequency
- Low part-to-part skew (100ps typical)
- Low pin-to-pin skew (15ps typical)
- Available in 32-pin TQFP





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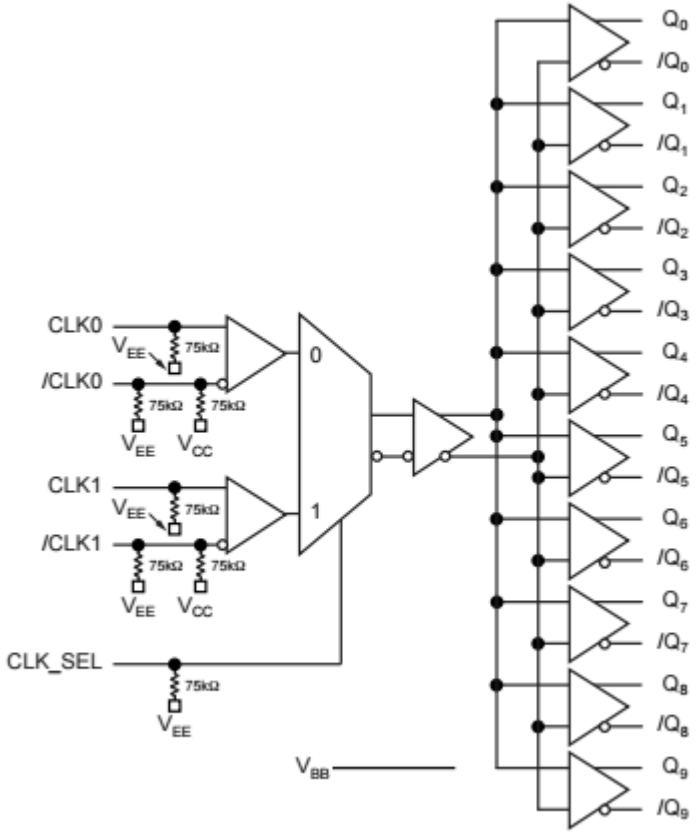
# SY100EP111U

2.5V/3.3V to 1.10 Differential LVPECL/LVECL/HSTL Clock Driver

Online Datasheet

## Features:

- 2.5V and 3.3V power supply options
- Guaranteed AC parameters over temperature:
  - fMAX = 3GHz
  - <25ps output-to-output skew
  - <250ps tr/tf
  - <400ps propagation delay
- Industrial temperature range:
  - –40°C to +85°C
- Differential design
- VBB output for single-ended input applications
- Fully compatible with industry standard 100K – - I/O levels
- Available in 32-pin TQFP package




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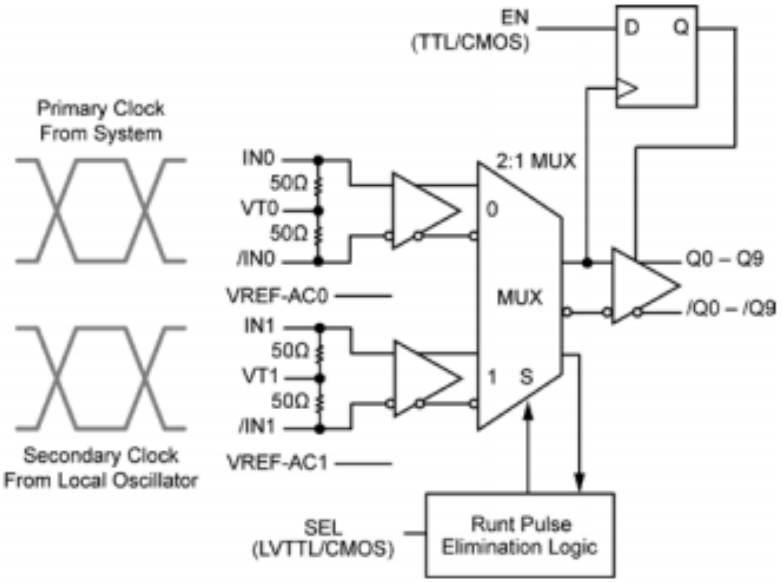
# SY89464U

Precision LVPECL 1:10 Fanout with 2:1 Runt Pulse Eliminator MUX

Online Datasheet

## Features:

- Selects between two sources, and provides 10 – - LVPECL copies
- AC performance:
  - Wide operating frequency: 1kHz to >1.5GHz
  - <1100ps In-to-Out tpd
  - <220ps tr/tf
- Unique MUX isolation minimizes adjacent crosstalk
- Fail-Safe Input prevents oscillations
- Ultra-low jitter design:
  - <1psRMS random jitter
  - <1psRMS cycle-to-cycle jitter
  - <10psPP total jitter (clock)
  - <0.7psRMS MUX crosstalk induced jitter
- Unique patented internal termination and VT pin accepts DC – - and AC-coupled inputs (CML, PECL, - LVDS)
- 800mV LVPECL output
- 2.5V ±5% or 3.3V ±10% supply voltage
- Industrial temperature range:
  - -40°C to +85°C
- 44-pin (7mm x 7mm) QFN package




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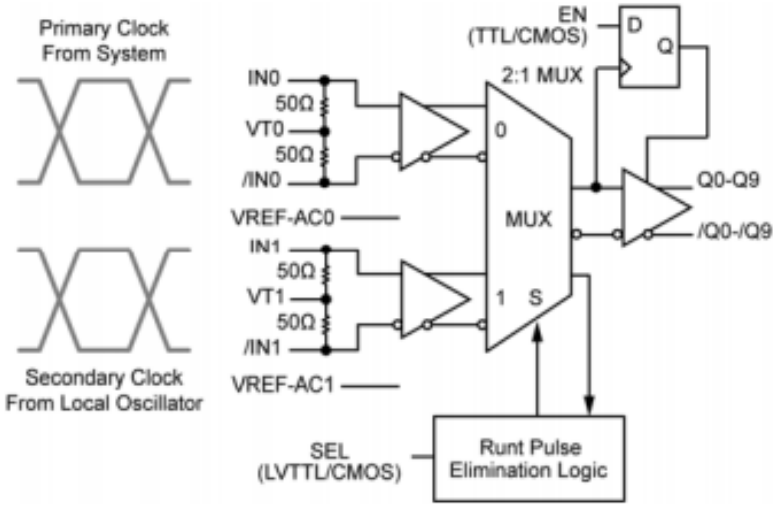
# SY89465U

**Precision LVDS 1:10 Fanout with 2:1 Runt**

Online Datasheet

## Features:

- Selects between two sources, and provides 10 – - LVDS copies
- AC performance:
  - Wide operating frequency: 1kHz to >1.5GHz
  - <1200ps In-to-Out tpd
  - <220ps tr/tf
- Unique input isolation minimizes adjacent - - channel crosstalk
- Fail-Safe Input prevents oscillations
- Ultra-low jitter design:
  - 183fsRMS phase jitter (typical)
  - <0.7psRMS MUX crosstalk-induced jitter
- Unique input termination and VT pin accepts DC and AC-coupled – - inputs (CML, PECL, LVDS)
- 325mV LVDS output swing
- 2.5V ±5% supply voltage
- Industrial temperature range: −40°C to +85°C Output enable
- Available in 44-pin (7mm x 7mm) QFN package




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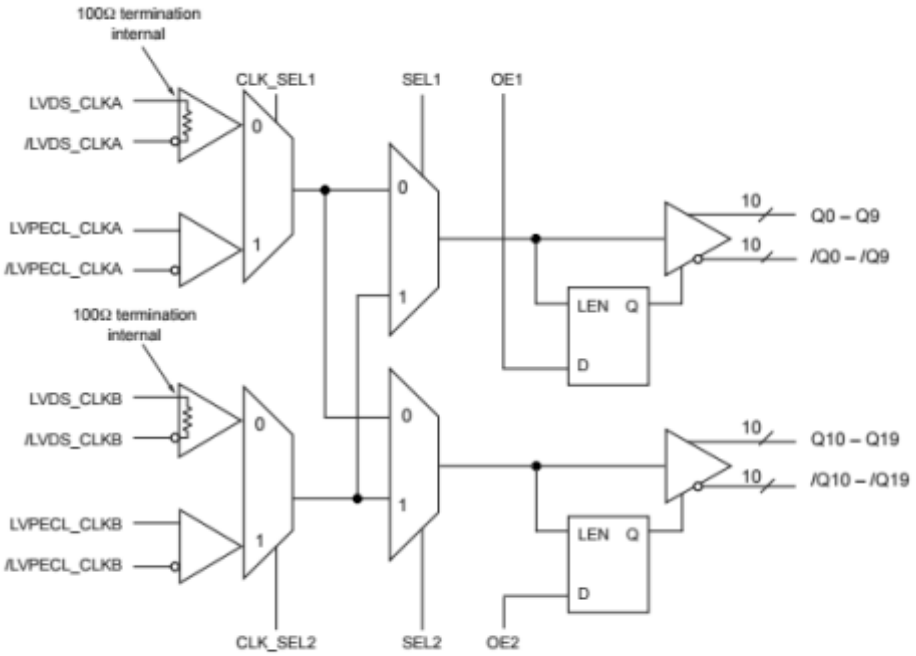
# SY89828L

1GHz Dual 1:10 LVDS Fanout Buffer/Translator with 2:1 Input MUX

Online Datasheet

## Features:

- High-performance dual 1:10, 1GHz LVDS – - fanout buffer/translator
- Two banks of 10 differential LVDS outputs
- AC parameters:
  - >1GHz fMAX
  - <50ps within device skew
  - <400ps tr/tf time
- Each bank includes a 2:1 input mux
- 2:1 mux input accepts LVDS and LVPECL
- Low jitter performance
  - <1psRMS cycle-to-cycle jitter
  - <1psPP total jitter
- 3.3V supply voltage
- Output enable function
- LVDS input includes internal 100Ω termination
- Available in a 64-Pin EPAD-TQFP




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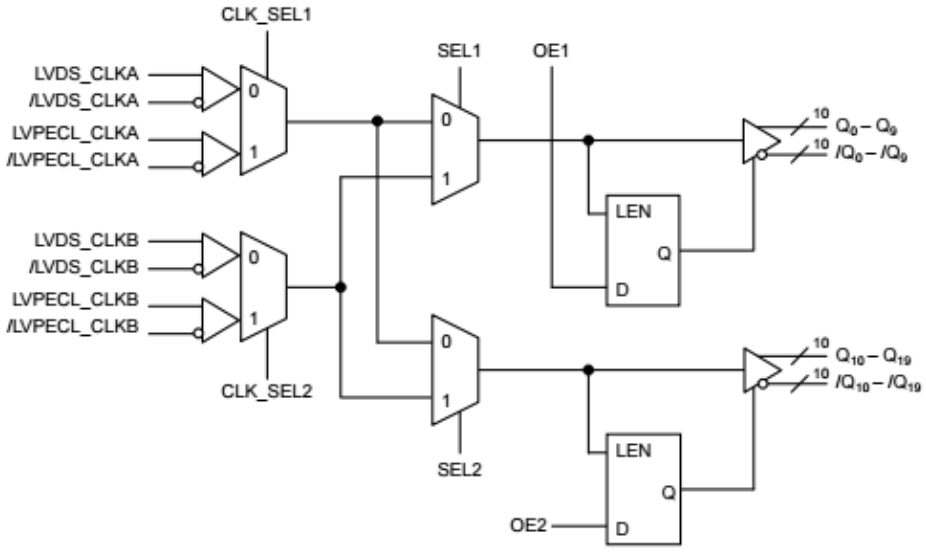
# SY89829U

Dual 1:10 or LVPECL Clock Driver with Redundant Switchover

Online Datasheet

## Features:

- Dual 1:10 fanout buffer/translator
- Accepts LVPECL or LVDS inputs
- Multiplexed inputs ideal for redundant – - clock switchover
- AC parameters:
  - >2GHz fMAX (toggle)
  - <50ps ch-ch skew
- LVDS input includes 100Ω internal – - termination
- Low supply voltage: 2.5V, 3.3V
- Industrial temperature range:
  - -40°C to +85°C
- Output enable (OE) pin
- Available in 64 EPAD-TQFP




Logic Symbol

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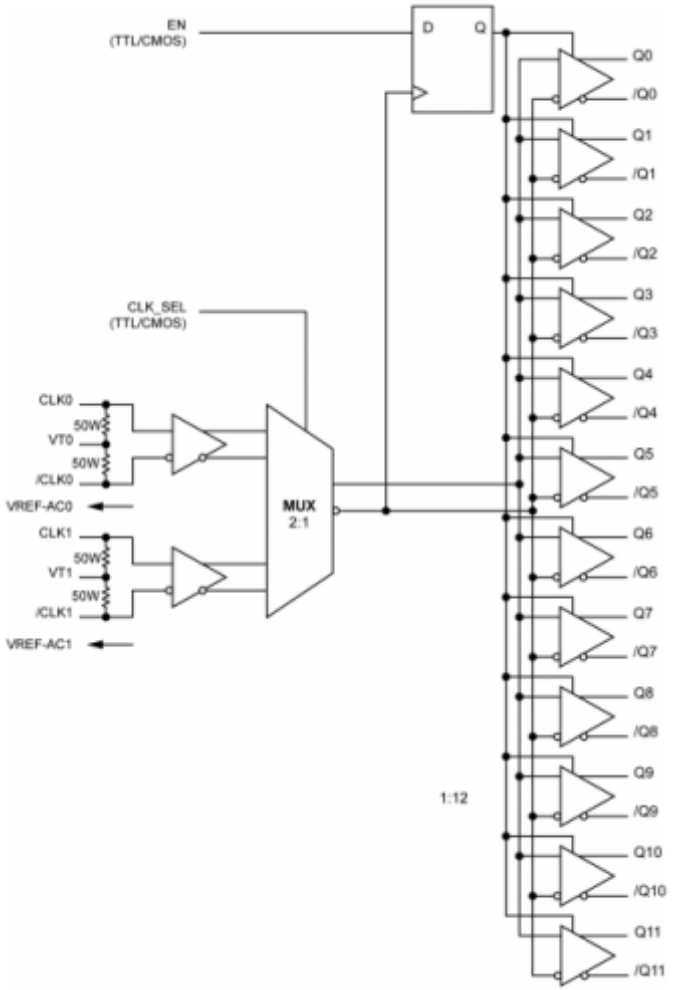
# SY89112U

**Low-Jitter, Low-Skew 1:12 LVPECL Fanout Buffer with 2:1 Input MUX**

Online Datasheet

## Features:

- Selects between 1 of 2 inputs, and provides 12 –
  - precision, low skew LVPECL output copies
- AC performance:
  - DC to >2GHz throughput:
  - <550ps propagation delay CLK-to-Q
  - <220ps rise/fall time
  - <25ps output-to-output skew
- Ultra-low jitter design:
  - 50fsRMS phase jitter (typ.)
  - <0.7psRMS crosstalk induced jitter
- Unique input termination and VT pin accepts DC –
  - coupled and AC-coupled differential inputs
- Unique 2:1 input MUX provides superior isolation to -
  - minimize channel-to-channel crosstalk
- 800mV, 100K LVPECL output swing
- Power supply 2.5V +5% or 3.3V +10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in 44-pin (7mm x 7mm) QFN package




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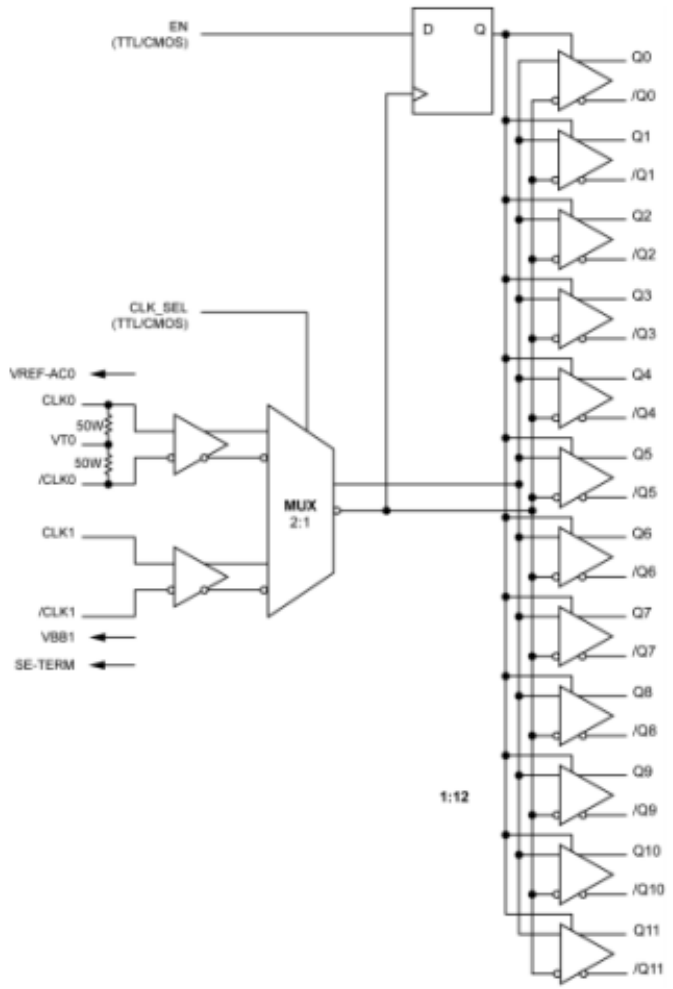
# SY89113U

2Low Jitter, Low Skew 1:12 LVDS Fanout Buffer with 2:1 Input MUX

Online Datasheet

## Features:

- Selects between 2 inputs & provides 12 LVDS copies
- AC performance:
  - DC to >1GHz throughput
  - <975ps propagation delay CLK0-to-Q
  - <250ps rise/fall time
  - <25ps output-to-output skew
- Ultra-low jitter design:
  - 130fsRMS phase jitter (typ.)
  - 0.7psRMS crosstalk-induced jitter
- Unique 2:1 input MUX provides minimizes crosstalk
- CLK0 input features a unique input termination
  - VT pin that accepts AC- and DC-coupled inputs -- CLK1 accepts virtually any logic standard:
  - Single-ended: TTL/CMOS, LVPECL
  - Differential: LVPECL, LVDS, CML, HSTL
- 325mV LVDS-compatible output swing
- Power supply: 2.5V ±5%
- Industrial temperature range:
  - -40°C to +85°C
- 44-pin (7mm x 7mm) QFN package




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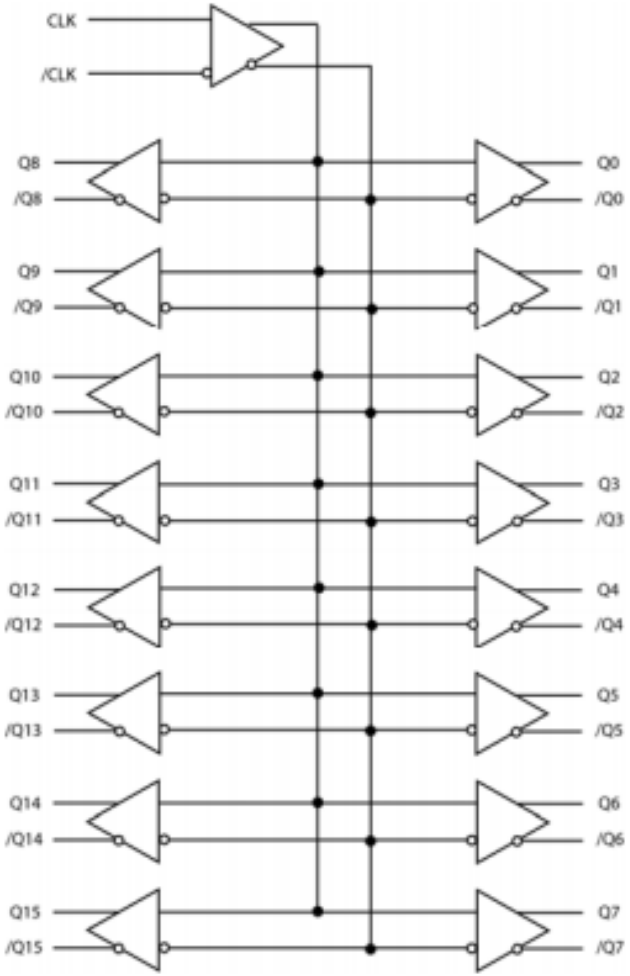
# SY898530U

500MHz 1:16 3.3V-to-2.5V/3.3V LVPECL Fanout Buffer

Online Datasheet

## Features:

- 16 Differential 2.5V LVPECL outputs
- Differential CLK inputs. Accepts LVDS, LVPECL, -- LVHSTL, SSTL, HCSL logic levels
- Translates any single-ended input signal to 2.5V -- LVPECL levels with a resistor bias on /CLK input
- 500MHz maximum output frequency
- <50ps output skew
- <250ps part-to-part skew
- <2ns propagation delay
- 3.3V Core, 2.5V output operating supply
- Commercial temperature range:
    - 0°C to +70°C
- Available in 48-pin TQFP package
- Pin-to-pin compatible with ICS8530





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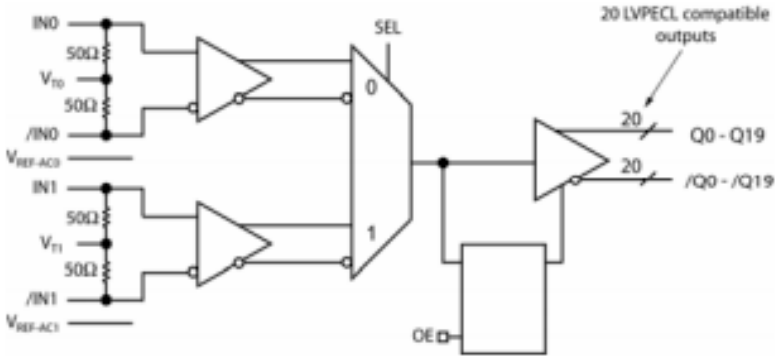
# SY89467U

**Precision LVPECL 1:20 Fanout with 2:1 MUX with Fail-Safe Input**

Online Datasheet

## Features:

- Selects between two inputs & provides 20 – - LVPECL copies
- Fail-Safe Input:
  - Prevents outputs from oscillating with – - invalid input
- AC performance:
  - DC-to >1.5 GHz throughput
  - <1200ps Propagation Delay (In-to-Q)
  - 270ps Rise/Fall times
- Ultra-low jitter design:
  - <1psRMS random jitter
  - <1psRMS cycle-to-cycle jitter
  - <10psPP total jitter (clock)
  - <0.7psRMS MUX crosstalk induced jitter
- Unique MUX input design minimizes crosstalk
- Unique internal termination and VT pin accepts DC and AC – - coupled inputs (CML, PECL, LVDS)
- 2.5V ±5% or 3.3V ±10% supply voltage
- Industrial temperature range -40°C to +85°C
- 64-pin TQFP package




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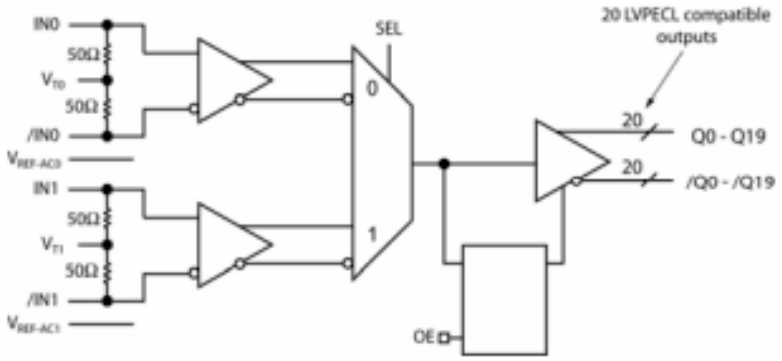
# SY89468U

**Precision LVDS 1:20 Fanout with 2:1 MUX with Fail-Safe Input**

Online Datasheet

## Features:

- Selects between 2 inputs & provides 20 –
  - LVDS copies
- Fail-Safe Input:
  - Prevents outputs oscillation with –
    - invalid inputs
- AC performance:
  - DC to >1.5GHz throughput
  - <1200ps Propagation Delay (In-to-Q)
  - <270ps Rise/Fall times
- Ultra-low jitter design:
  - <1psRMS random jitter
  - <1psRMS cycle-to-cycle jitter
  - <10psPP total jitter (clock)
  - <0.7psRMS MUX crosstalk induced jitter
- Unique MUX input isolation design minimizes adjacent channel crosstalk -
- Unique internal termination and VT pin accepts DC and AC-coupled –
  - inputs (CML, PECL, LVDS)
- 2.5V ±5% supply voltage
- Industrial temperature range: -40°C to +85°C
- Available in 64-pin EPAD-TQFP package




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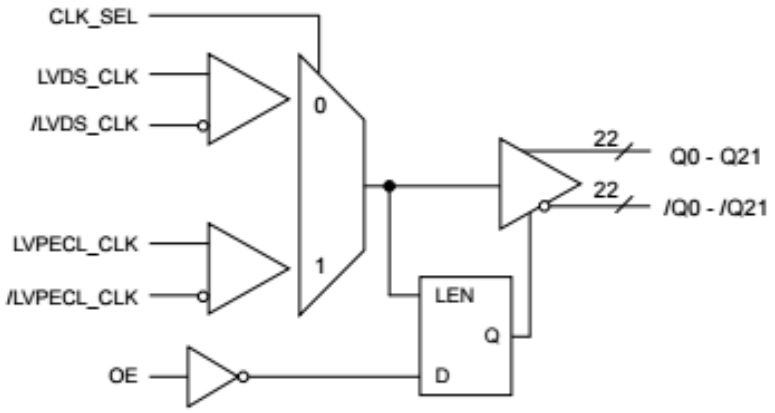
# SY89825U

1:22 Low-Voltage PECL Bus Clock Driver & Translator

Online Datasheet

## Features:

- LVPECL or LVDS input to 22 LVPECL outputs
- 100K ECL compatible outputs
- LVDS input includes 100Ω termination
- Guaranteed AC parameters over voltage:
  - >2GHz fMAX (toggle)
- <35ps max. ch-ch skew
- Low voltage operation: 2.5V, 3.3V
- Industrial temperature range:
  - -40°C to +85°C
- Output enable pin
- Available in a 64-Pin EPAD-TQFP




Logic Symbol


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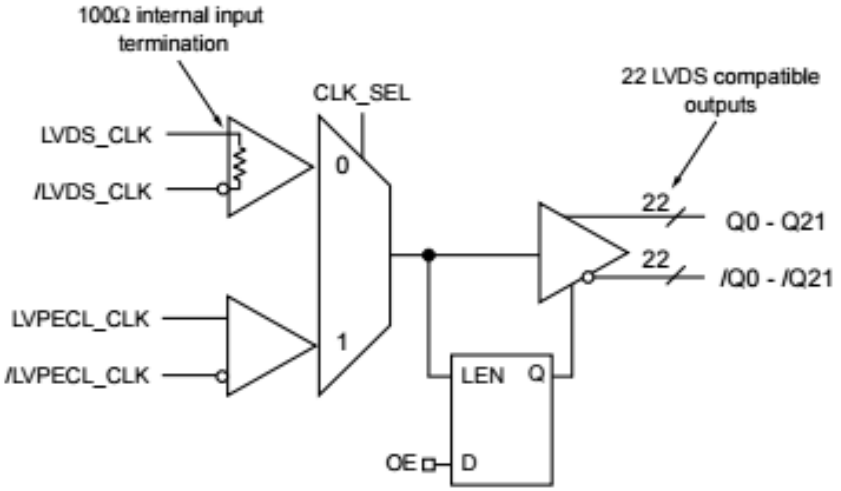
# SY89826L

1GHz Precision 1:22 LVDS Fanout Buffer/Translator with 2:1 MUX

Online Datasheet

## Features:

- High-performance, 1GHz LVDS fanout buffer/ -- translator
- 22 differential LVDS output pairs
- AC parameters:
  - >1GHz fMAX
  - <50ps within device skew
  - <400ps tr/tf time
- Low jitter performance:
  - <1psrms cycle-to-cycle jitter
  - <1ps (pk-pk) total jitter
- 2:1 mux input accepts LVDS and LVPECL
- 3.3V supply voltage
- LVDS input includes internal 100Ω termination
- Output enable function
- Available in a 64-Pin EPAD-TQFP




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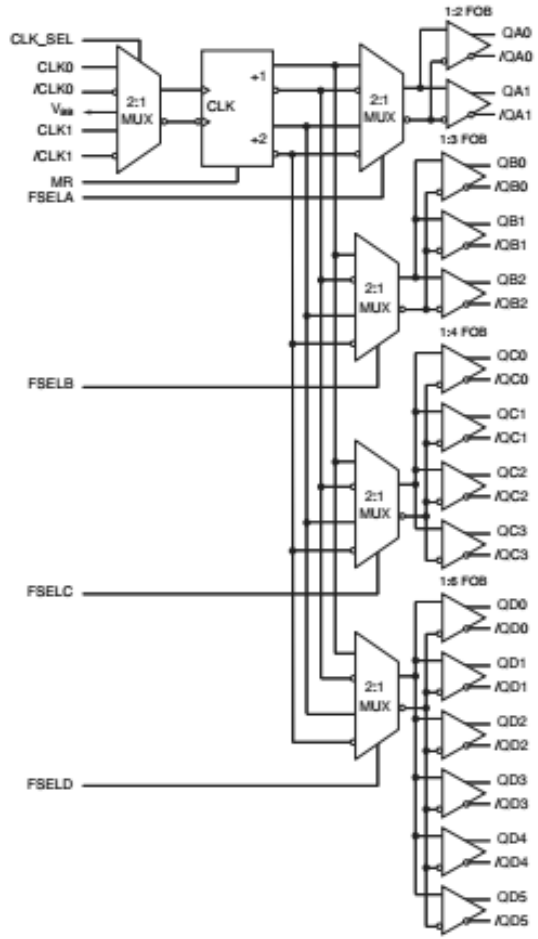
# SY100E310L

31.5GHz Differential LVECL/LVPECL Programmable Clock Generator

Online Datasheet

## Features:

- AC performance:
  - >800MHz fMAX (typical)
  - <50ps within-device skew
- 15 differential LVPECL outputs
- Low voltage operation:
  - LVPECL: +3.3V ±10%
  - LVECL: –3.3V ±10%
- Internal 75kΩ pull-down resistors
- Industrial temperature range:
  - –40°C to +85°C -
- Pin-for-pin, plug-in replacement for
  - MC100LVE310
- Available in 28-pin PLCC package





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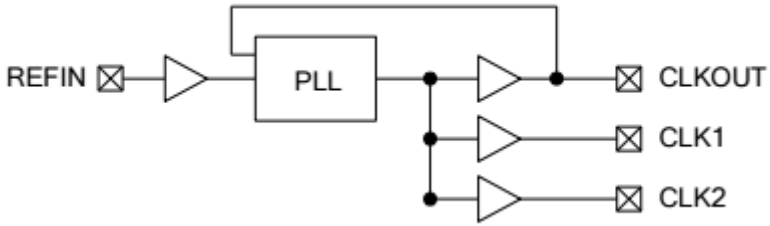
# PL102-10

**High Performance, Low Skew, Low Jitter Zero Delay Buffer**

Online Datasheet

## Features:

- Frequency Range:
  - 15 to 170MHz @ 3.3V
  - 15 to 145MHz @ 2.5V
- Internal Phase Locked Loop Allows Spread –
  - Spectrum Modulation on Reference Clock to –
  - Pass to Outputs
- Zero Input to Output Delay
- Less Than 700ps Device to Device Skew
- Less Than 200ps Skew Between Outputs
- Less Than 100ps Cycle to Cycle Jitter
- 2.5V or 3.3V Power Supply
- Available in 8-Pin SOP or 6-pin SOT-23 packages





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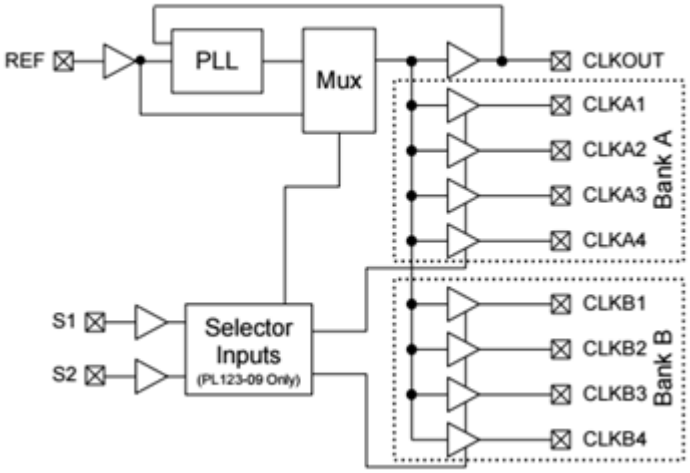
# PL123-05/-09

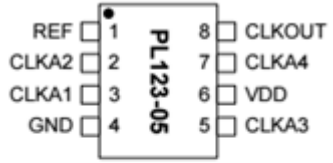
High Performance, Low Skew, Low Jitter Zero Delay Buffer

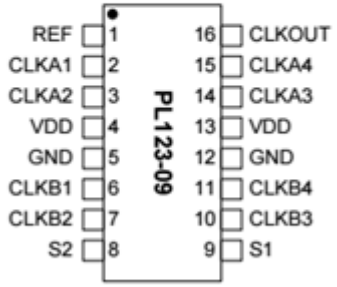
Online Datasheet

## Features:

- Frequency Range” 10MHz to 134MHz
- Output Options:
  - 5 outputs: PL123-05
  - 9 outputs: PL123-09
- Zero input - output delay
- Optional Drive Strength:
- Standard (8mA) PL123-05/-09
- High (12mA) PL123-05H/-09H
- 3.3V ±10% operation
- Temperature ranges:
  - Commercial temperature range:
    - 0°C to +70°C
  - Industrial temperature range:
    - –40°C to +85°C
- PL123-05 available in 8-Pin SOP packages
- PL123-09 available in 16-Pin SOP and TSSOP – - packages





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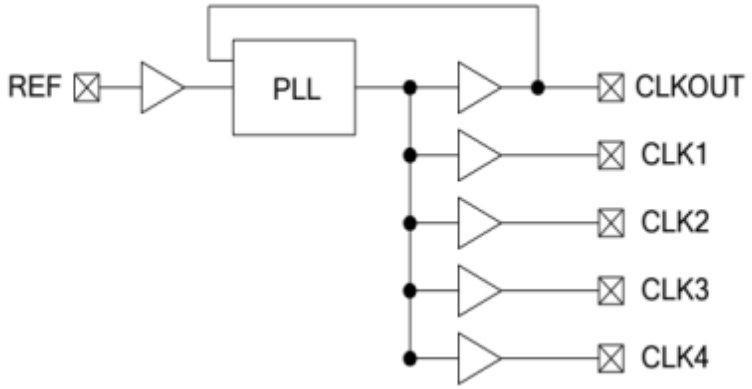
# PL123E-05

High Performance, Low Skew, Low Jitter Zero Delay Buffer

Online Datasheet

## Features:

- Frequency Range 10MHz to 220MHz
- Zero input - output delay
- Low output-to-output skew
- Optional Drive Strength:
  - Standard (8mA) PL123E-05
  - High (12mA) PL123E-05H
- 2.5V or 3.3V ±10% operation
- Available in 8-pin SOP packaging





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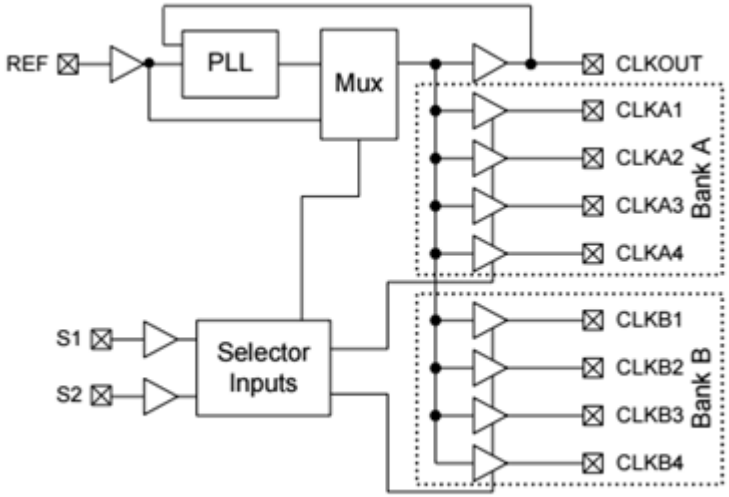
# PL123E-09

High Performance, Low Skew, Low Jitter Zero Delay Buffer

Online Datasheet

## Features:

- Frequency Range 10MHz to 220MHz
- Zero input - output delay
- Low output-to-output skew
- Optional Drive Strength:
  - Standard (8mA) PL123E-09
  - High (12mA) PL123E-09H
- 2.5V or 3.3V ±10% operation
- Available in 16-Pin SOP and TSSOP packages





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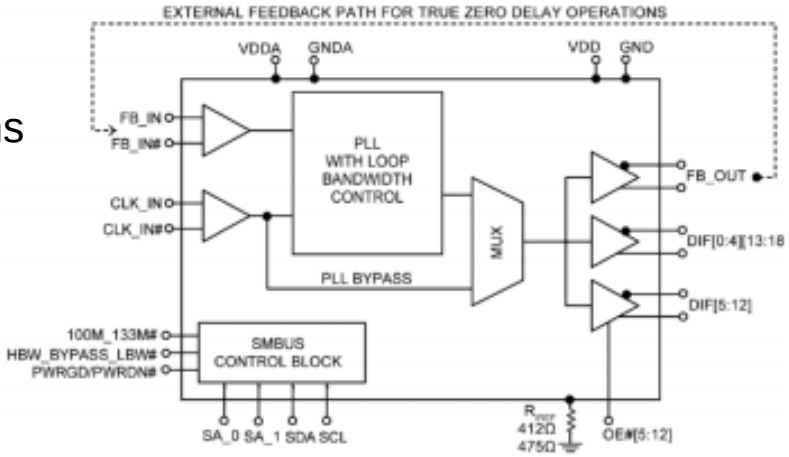
# MDB1900Z

Zero Delay Buffer for PCIe

Online Datasheet

## Features:

- Supports zero delay (0ps) buffer mode for –
  - 100MHz and 133MHz clock frequencies.
- External feedback path for true zero delay operations
- Zero delay (PLL) mode can filter jitter
- Selectable PLL bandwidth for PLL mode
- Supports fanout buffer mode for clock frequencies -
  - between 0MHz and 250MHz
- Differential input reference with HCSL logic –
  - (0V ~ 0.7V)
- Nineteen differential HCSL-compatible clock output pairs
- Eight dedicated OE# pins to control their assigned output:
  - Glitch free assertion/de-assertion.
- Spread spectrum modulation tolerant for EMI reduction
- SMBus interface for controlling output properties
  - Enable/disable and delay tuning
- Disabled outputs in power-down mode for maximum power savings
- Nine selectable SMBus addresses
- 3.3V or 2.5V operation
- Commercial temperature range: 0°C to +70°C
- 72-pin 10mm × 10mm QFN package





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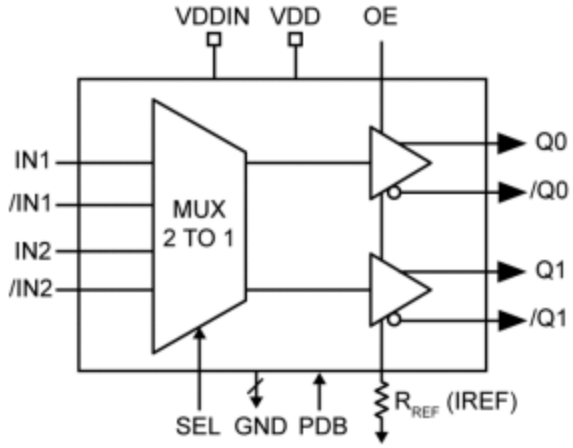
# SY75572L

267MHz 1:2 3.3V HCSL/LVDS Fanout Buffer

Online Datasheet

## Features:

- Two differential pairs of LVDS or HCSL outputs
- Two pairs of differential inputs accept LVDS or – - HCSL logic levels
- 267MHz maximum frequency
- Ultra-low phase jitter:
  - 137fsRMS, 200MHz (12kHz–20MHz)
  - 153fsRMS, 156.25MHz (12kHz–20MHz)
  - 212fsRMS, 100MHz (12kHz–20MHz)
  - <2ps total jitter (peak-to-peak), 200MHz – (BER = 10-12)
- 50ps output-to-output skew
- 3.3V ±5% power supply operation
- Industrial temperature rage:
  - -40°C to +85°C
- 16-pin (3mm × 3mm) QFN package




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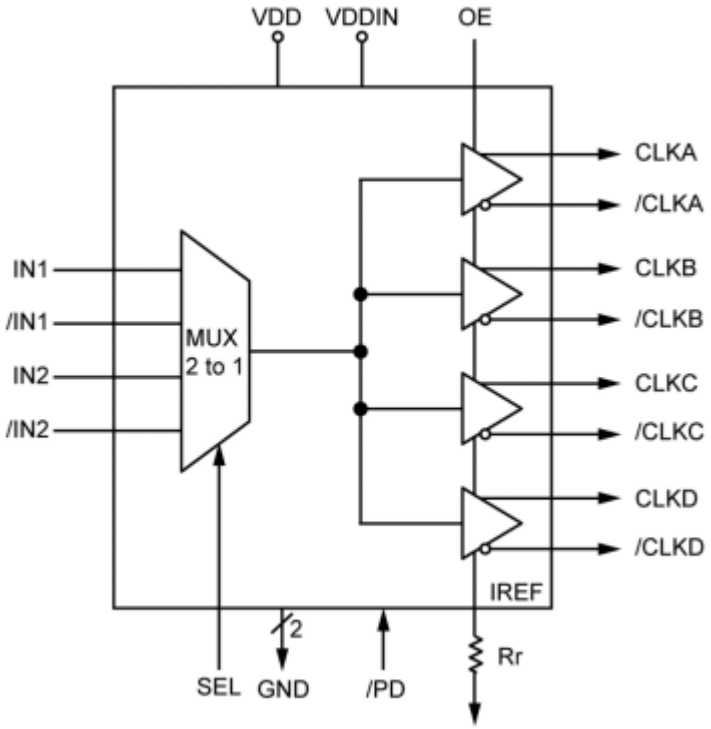
# SY75576L

267MHz 1:4 3.3V HCSL/LVDS Fanout Buffer

Online Datasheet

## Features:

- Four differential pairs of LVDS or HCSL outputs
- Two pairs of differential inputs accept LVDS or -- HCSL logic levels
- 267MHz max HCSL frequency
- 100MHz max LVDS frequency
- Ultra-low phase jitter:
  - 137fsrms, 200MHz (12kHz–20MHz)
  - 153fsrms, 156.25MHz (12kHz–20MHz)
  - 212fsrms, 100MHz (12kHz–20MHz)
- <2ps Total_Jitterpk-pk, 200MHz(BER = $10^{-12}$)
- 50ps output-to-output skew
- 3.3V ±5% power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- 20-pin TSSOP package




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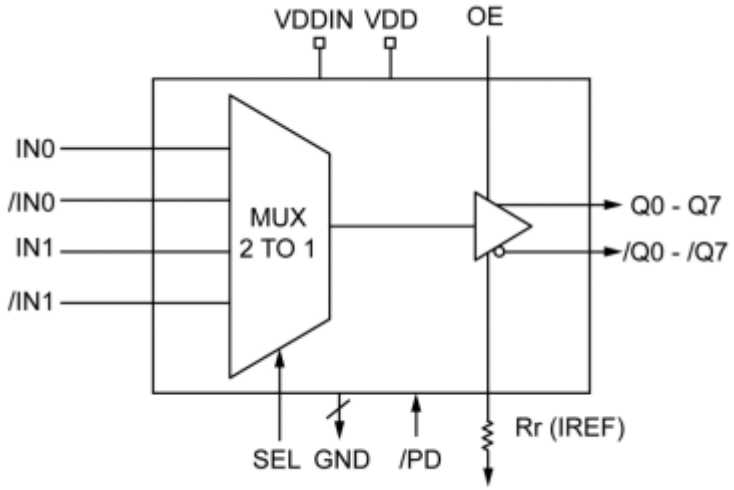
# SY75578L

PCIe Fanout Buffer 267MHz, 8 HCSL Outputs with MUX

Online Datasheet

## Features:

- Eight differential pairs of HCSL outputs
- Two pairs of differential inputs accept LVDS or -- HCSL logic levels
- 267MHz max frequency
- Ultra low phase jitter:
  - 130fsrms, 200MHz (12kHz–20MHz)
- <100ps output-to-output skew
- 3.3V ±5% power supply operation
- Industrial operating temperature:
  - -40°C to +85°C
- Available in 32-pin QFN package





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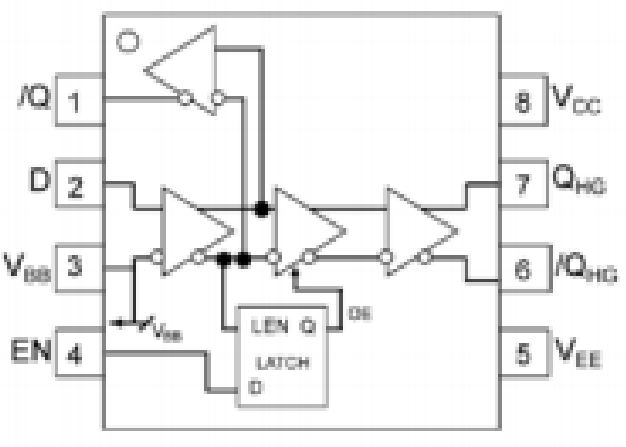
# SY89251V

Enhanced Differential Receiver

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 250ps propagation delay
- Ideal for pulse amplifier and limiting amplifier –
  - applications
- Data synchronous enable/disable (EN) on QHG -
  - and QHG provides for complete glitchless gating -
  - of the outputs
- Ideal for gating timing signals
- Complete solution for high quality, high frequency -
  - crystal oscillator applications
- Available in an ultra-small 8-pin (2mm x 2mm) DFN package





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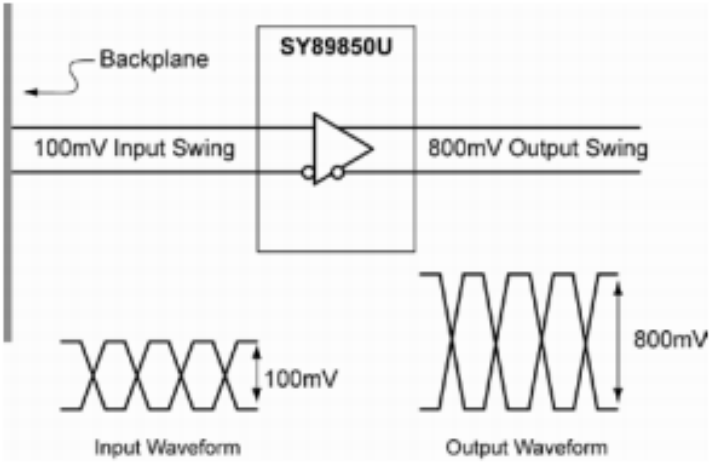
# SY89850U

**Precision Low-Power LVPECL Line Driver/Receiver**

Online Datasheet

## Features:

- Guaranteed AC performance over temperature -- and supply voltage:
- DC-to >3.2Gbps data rate throughput:
  - 4GHz clock fMAX (typ.)
  - <280ps In-to-Out tpd
  - <160ps tr/tf
  - Low power: 50mW (2.5V typ.)
- Ultra-low jitter design:
  - <1psRMS random jitter
  - <10psPP deterministic jitter
  - <10psPP total jitter (clock)
- Unique input termination and VTpin accepts DC -- and AC-coupled inputs (CML, PECL, LVDS)
- Typical 800mV (100k) LVPECL Output Swing
- Power supply 2.5V ±5% or 3.3V ±10%
- Industrial temperature range:
  - -40°C to +85°C
- Available in ultra-small (2mm x 2mm) 8-pin DFN package





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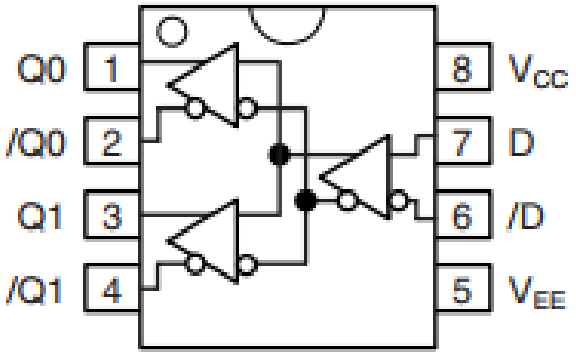
# SY10EP89

5V/3.3V 3GHz Coaxial Cable Driver

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 3.0GHz typical toggle frequency
- 310ps typical propagation delay
- 1.6V (5V) and 1.4V (3.3V) swing
- Internal input resistors: pulldown on D, pulldown -- and pullup on /D
- New differential input common mode range
- Available in 8-pin MSOP and SOIC packages




**8-Pin SOIC (Z8-1)**
**8-Pin MSOP (K8-1)**


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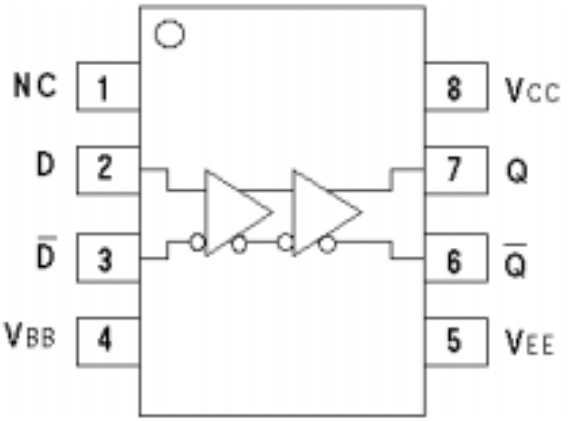
# SY100EL16V

5V/3.3V Differential Receiver

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- 250ps propagation delay
- High bandwidth output transitions
- Internal 75KΩ input pull-down resistors
- Replaces SY10/100EL16
- Improved output waveform characteristics
- Available in 8-pin MSOP and SOIC package




8-Pin MSOP (K8-1)
8-Pin SOIC (Z8-1)


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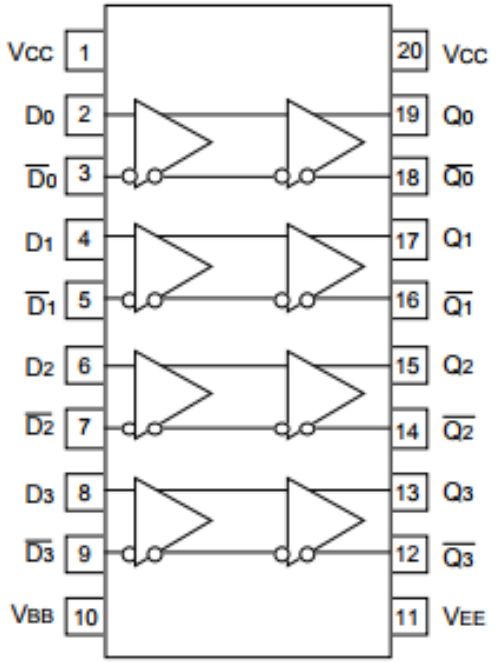
# SY100EL17

5V, 3.3V Quad Differential Receiver

Online Datasheet

## Features:

- 3.3V and 5V power supply options
- High bandwidth output transitions
- Internal 75KΩ input pull down resistors
- Available in 20-pin SOIC package




20-Pin Wide SOIC (Z20-1)


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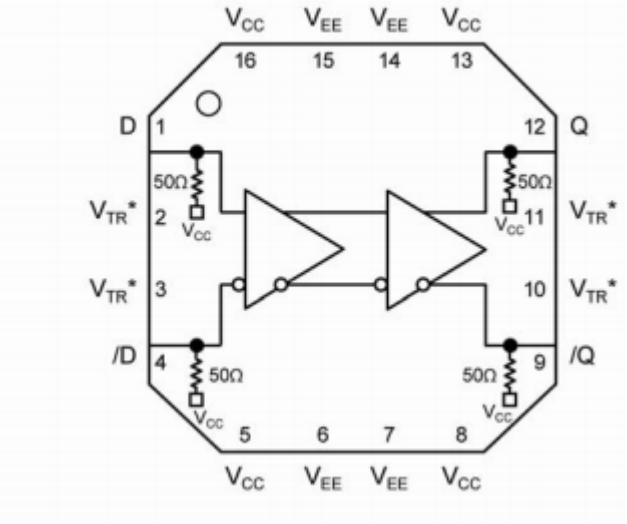
# SY58016L

3.3V, 10Gbps Differential CML Line Driver/Receiver

Online Datasheet

## Features:

- Accepts up to 10.7Gbps data
- <45ps edge rate
- Gain ≥ 4V/V
- CML/PECL differential inputs
- CML outputs
- Internal 50Ω input termination
- Internal 50Ω output load resistors
- Available in 16-pin (3mm x 3mm) MLF® package or die




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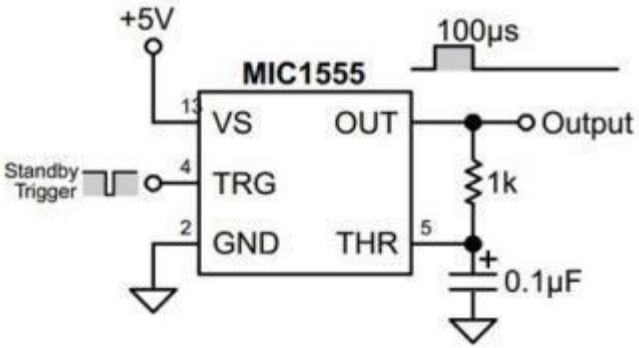
# MIC1555

IttyBitty® RC Timer / Oscillator

Online Datasheet

## Features:

- +2.7V to +18V operation
- Low current
- <1µA typical shutdown mode (MIC1557)
- 200µA typical (TRG and THR low) at 3V supply
- Timing from microseconds to hours
- "Zero" leakage trigger and threshold inputs
- 50% square wave with one Resistor, one Capacitor
- Threshold input precedence over trigger input
- <15Ω output on resistance
- No output cross-conduction current spikes
- <0.005%/°C temperature stability
- <0.055%/V supply stability
- SOT-23-5 package




Monostable (One-Shot)


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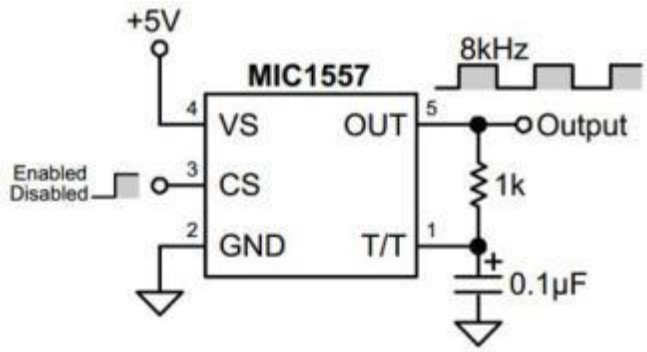
# MIC1557

IttyBitty® RC Timer / Oscillator

Online Datasheet

## Features:

- +2.7V to +18V operation
- Low current
- <1µA typical shutdown mode (MIC1557)
- 200µA typical (TRG and THR low) at 3V supply
- Timing from microseconds to hours
- “Zero" leakage trigger and threshold inputs
- 50% square wave with one Resistor, one Capacitor
- Threshold input precedence over trigger input
- <15Ω output on resistance
- No output cross-conduction current spikes
- <0.005%/°C temperature stability
- <0.055%/V supply stability
- SOT-23-5 package




Astable (Oscillator)

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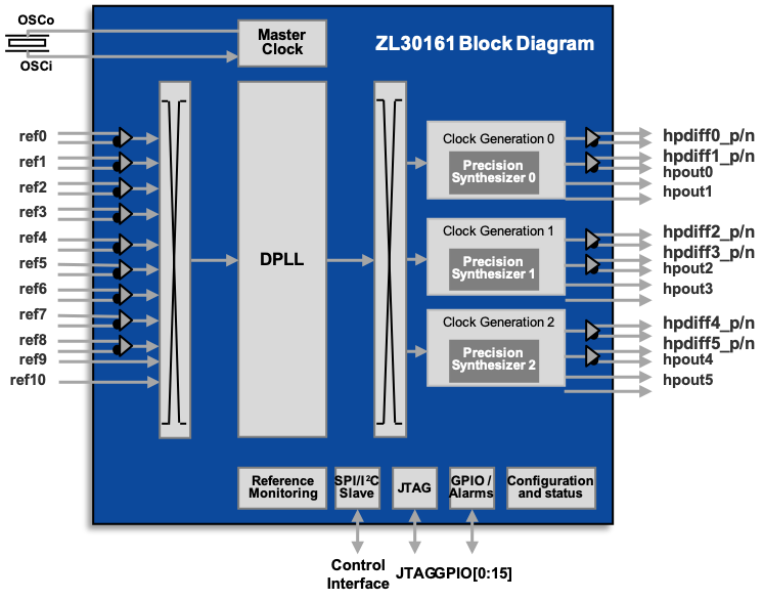
# ZL30161

Single Channel Network Synchronization Clock Translator

Online Datasheet

## Features

- Fully compliant SEC (G.813) and EEC (G.8262) flexible rate conversion Digital Phase Locked Loop (DPLL)
- Programmable digital PLL/Numerically Controlled Oscillator (NCO) synchronizes to any clock rate from 1Hz to 750MHz
- Three programmable synthesizers generate any clock rate from 1Hz to 750MHz with maximum jitter below 0.62 ps rms
- Flexible two-stage architecture translates between arbitrary data rates, line coding rates and FEC rates
- Digital PLL filter jitter from 0.1mHz up to 1kHz





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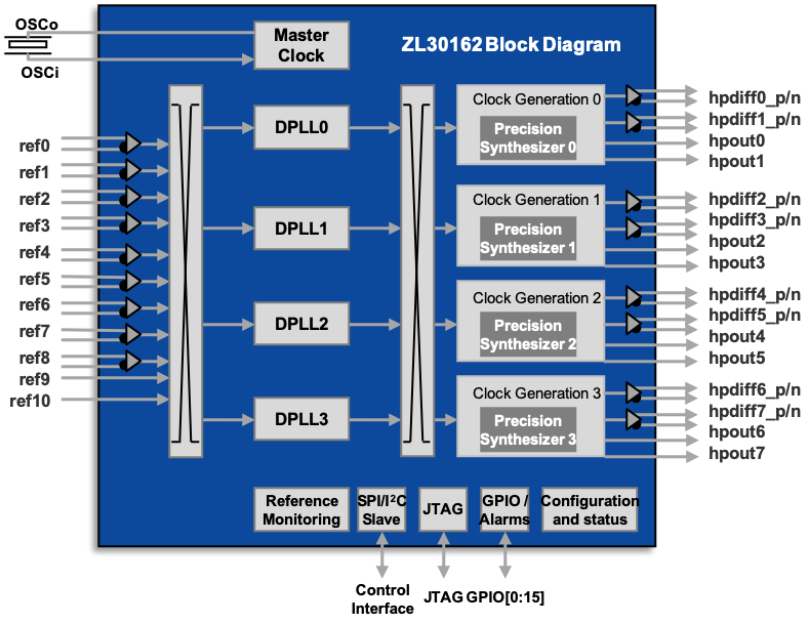
# ZL30162

Quad Channel Network Synchronization Clock Translator

Online Datasheet

## Features

- Fully compliant SEC (G.813) and EEC (G.8262) flexible rate conversion Digital Phase Locked Loop (DPLL)
- Four independent, programmable DPLLs/Numerically Controlled Oscillators (NCOs) synchronize to any clock rate from 1 Hz to 750 MHz
- Four programmable synthesizers generate any clock rate from 1 Hz to 750 MHz with maximum jitter below 0.61 ps rms
- Flexible two-stage architecture translates between arbitrary data rates, line coding rates and FEC rates
- Digital PLLs filter jitter 0.1 mHz up to 1 kHz





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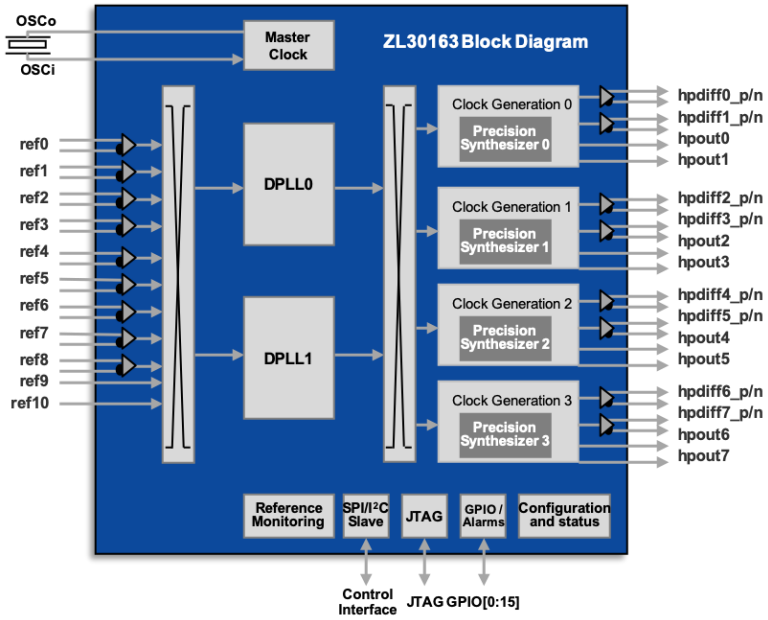
# ZL30163

Dual Channel Network Synchronization Clock Translator

Online Datasheet

## Features

- Fully compliant SEC (G.813) and EEC (G.8262) flexible rate conversion Digital Phase Locked Loop (DPLL)
- Two independent, programmable DPLLs/Numerically Controlled Oscillators (NCOs) synchronizae to any clock rate from 1Hz to 750MHz
- Four programmable synthesizers generate any clock rate from 1Hz to 750MHz with maximum jitter below 0.62 ps rms
- Flexible two-stage architecture translates between arbitrary data rates, line coding rates and FEC rates
- Digital PLLs filter jitter from 0.1mHz up to 1kHz





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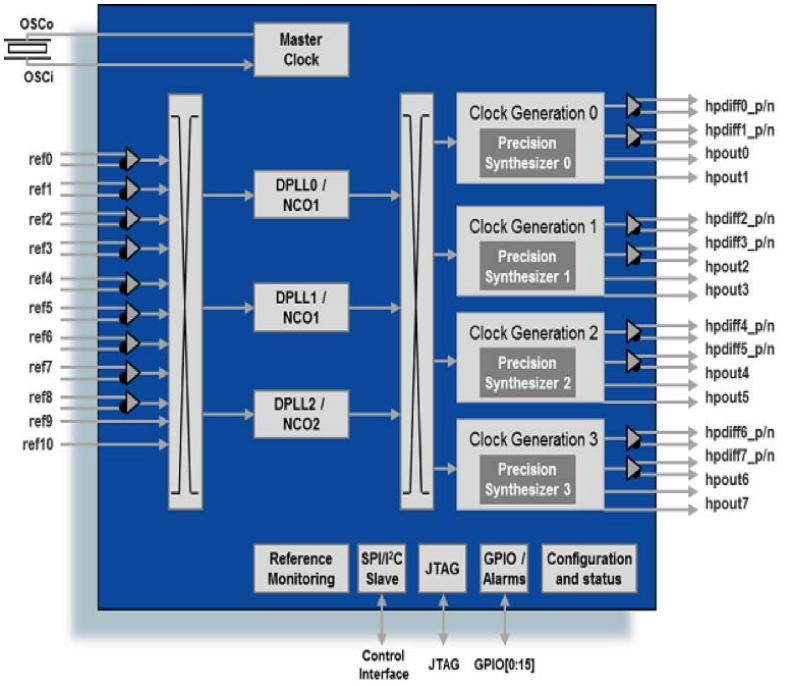
# ZL30164

Triple Channel Network Synchronization Clock Translator

Online Datasheet

## Features

- Fully compliant SEC (G.813) and EEC (G.8262) flexible rate conversion Digital Phase Locked Loop (DPLL)
- Three independent, programmable DPLLs/Numerically Controlled Oscillators (NCOs) synchronize to any clock rate from 1 Hz to 750 MHz
- Four programmable synthesizers generate any clock rate from 1 Hz to 750 MHz with maximum jitter below 0.64 ps rms
- Flexible two-stage architecture translates between arbitrary data rates, line coding rates and FEC rates
- Digital PLLs filter jitter 0.1 mHz up to 1 kHz





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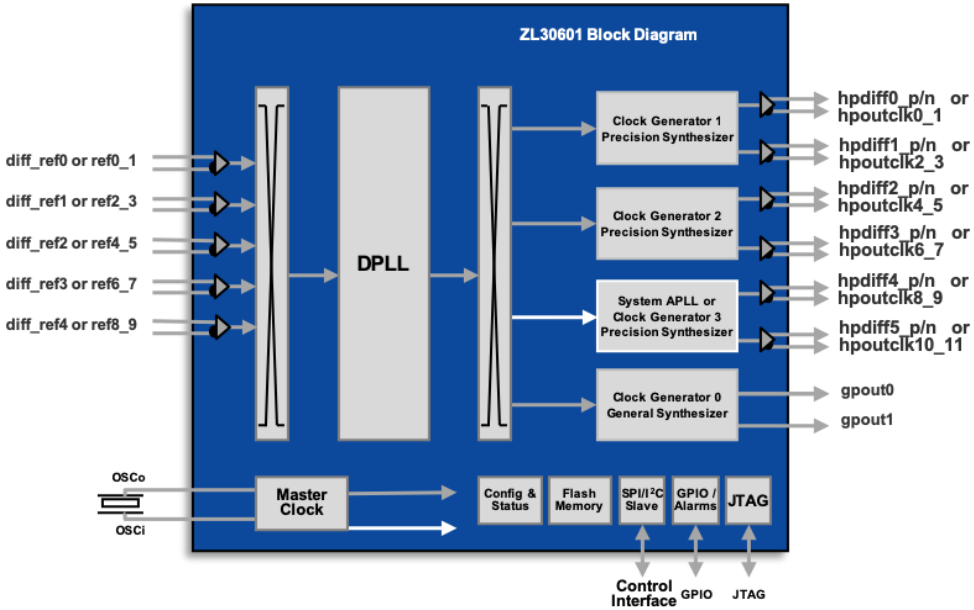
# ZL30601

Single Channel Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Excellent jitter performance of 180 fs RMS in the 12 kHz to 20 MHz band meets jitter requirements for 10G/40G and 100G PHYs
- Three programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 900 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 6 differential (CML) or 12 single ended (CMOS) ultra-low jitter outputs plus two general purpose CMOS outputs
- Accepts up to 10 LVPECL/LVDS/HCSL/LVCMOS inputs




<< BACK

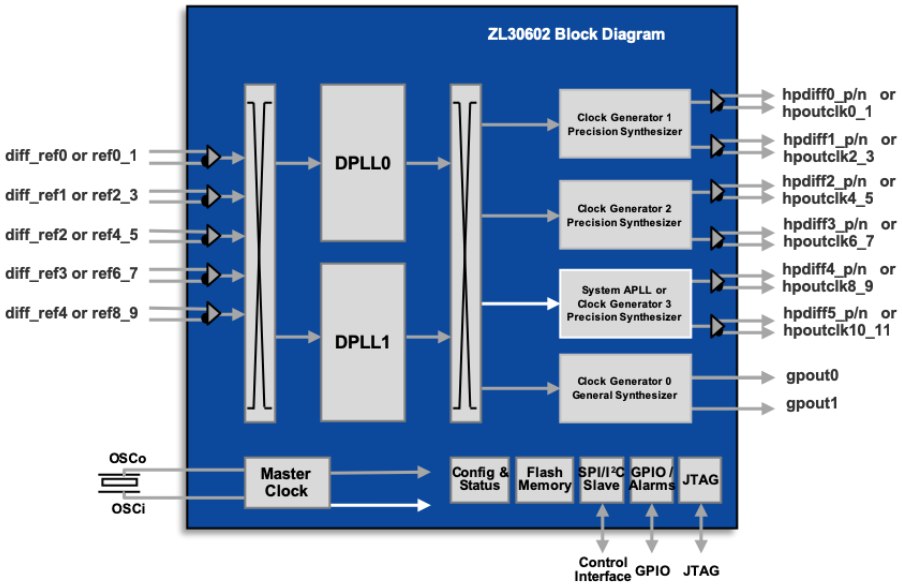
# ZL30602

Dual Channel Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Excellent jitter performance of 180 fs RMS in the 12 kHz to 20 MHz band meets jitter requirements for 10G/40G and 100G PHYs
- Three programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 900 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 6 differential (CML) or 12 single ended (CMOS) ultra-low jitter outputs plus two general purpose CMOS outputs
- Accepts up to 10 LVPECL/LVDS/HCSL/LVCMOS inputs





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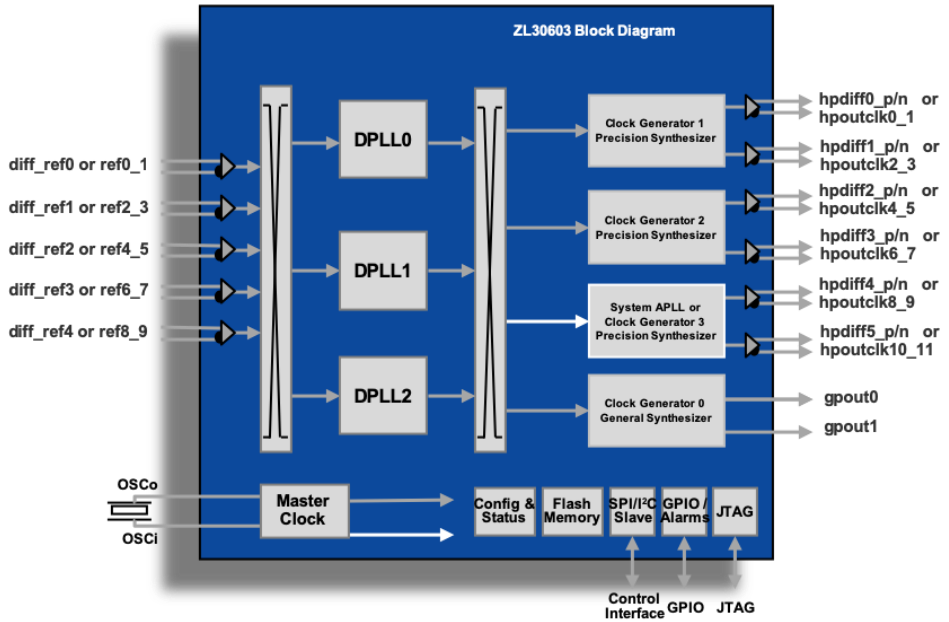
# ZL30603

Triple Channel Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Excellent jitter performance of 180 fs RMS in the 12 kHz to 20 MHz band meets jitter requirements for 10G/40G and 100G PHYs
- Three programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 900 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 6 differential (CML) or 12 single ended (CMOS) ultra-low jitter outputs plus two general purpose CMOS outputs
- Accepts up to 10 LVPECL/LVDS/HCSL/LVCMOS inputs





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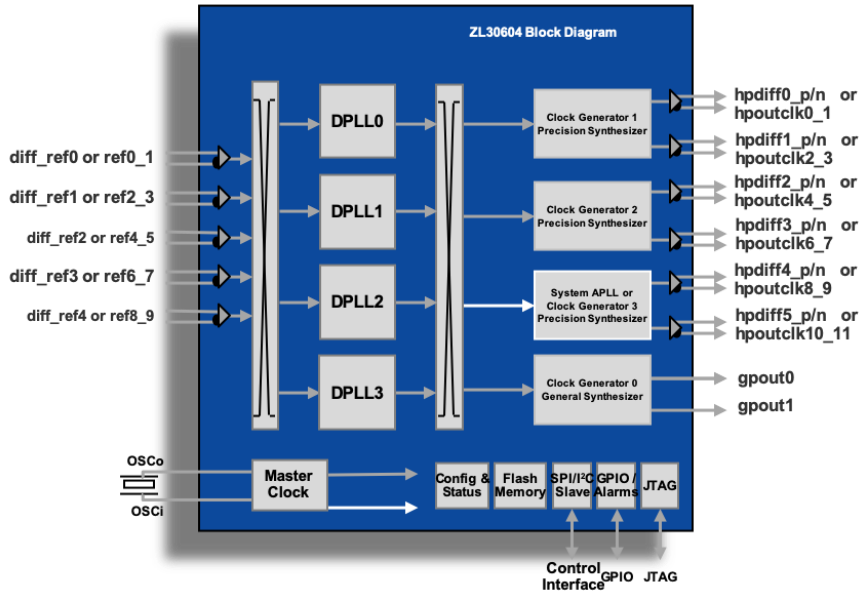
# ZL30604

Quad Channel Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Excellent jitter performance of 180 fs RMS in the 12 kHz to 20 MHz band meets jitter requirements for 10G/40G and 100G PHYs
- Three programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 900 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 6 differential (CML) or 12 single ended (CMOS) ultra-low jitter outputs plus two general purpose CMOS outputs
- Accepts up to 10 LVPECL/LVDS/HCSL/LVCMOS inputs




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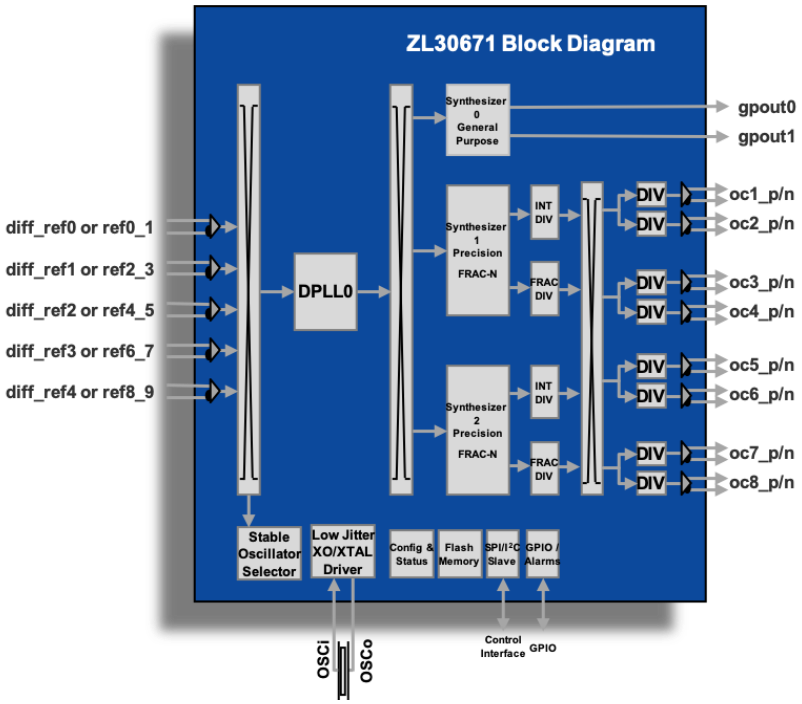
# ZL30671

Single Channel Network Synchronizer

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz





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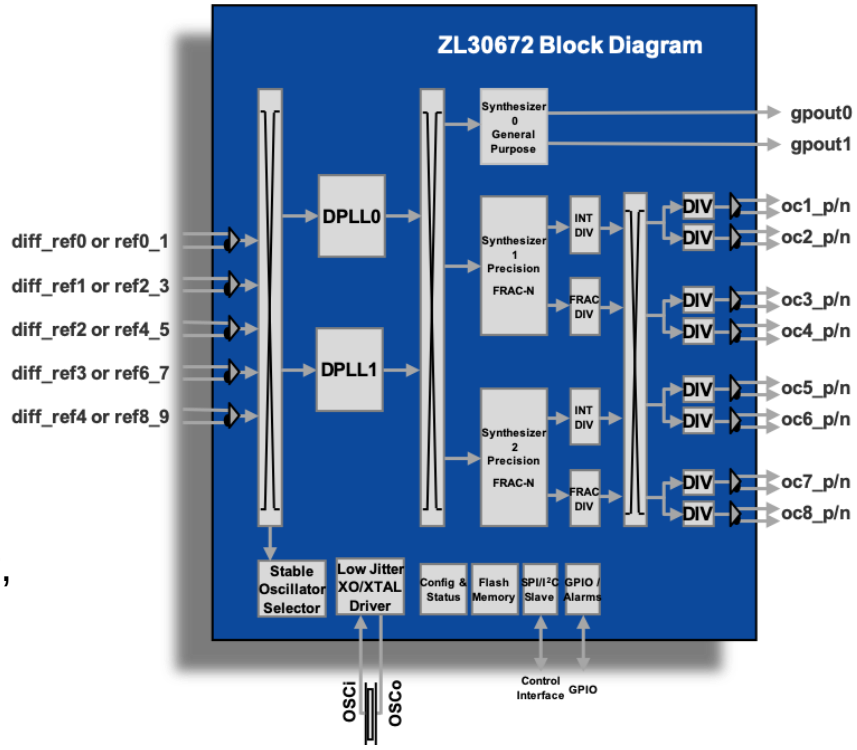
# ZL30672

Dual Channel Network Synchronizer

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz





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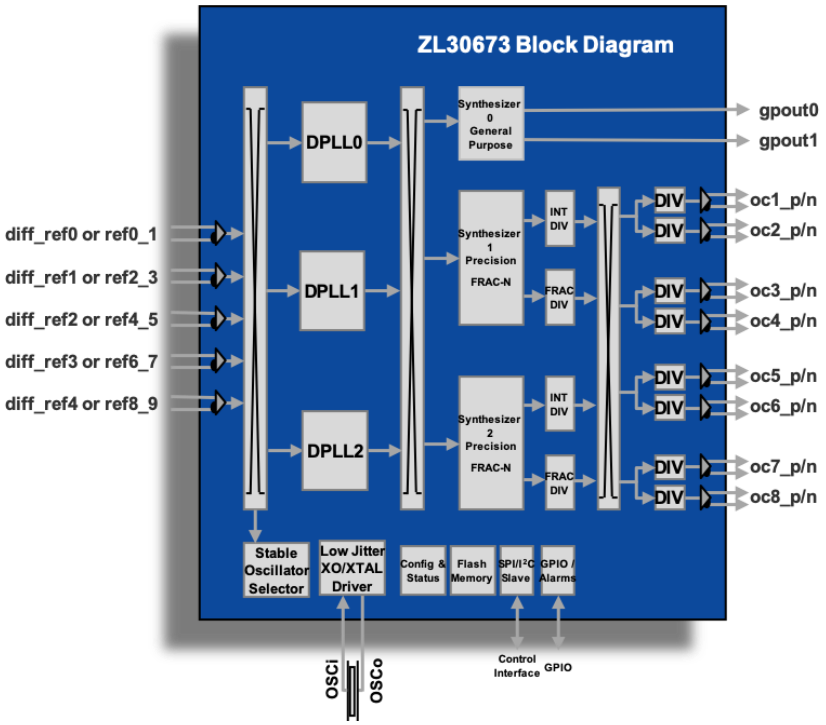
# ZL30673

Triple Channel Network Synchronizer

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz





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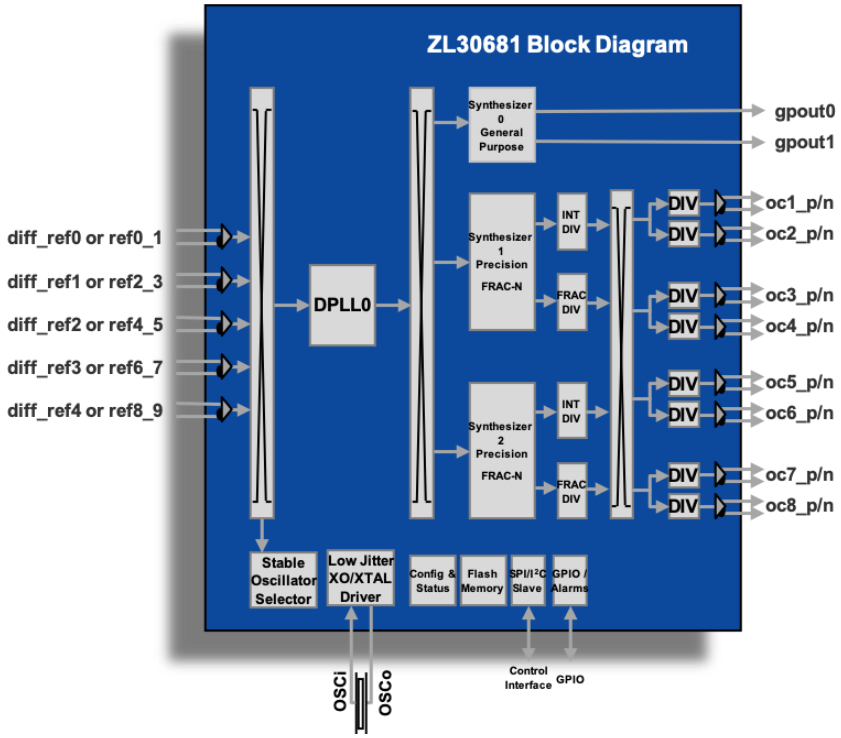
# ZL30681

Single Channel Clock Translator

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 8 differential or 16 single ended ultra-low jitter outputs plus two general purpose CMOS outputs





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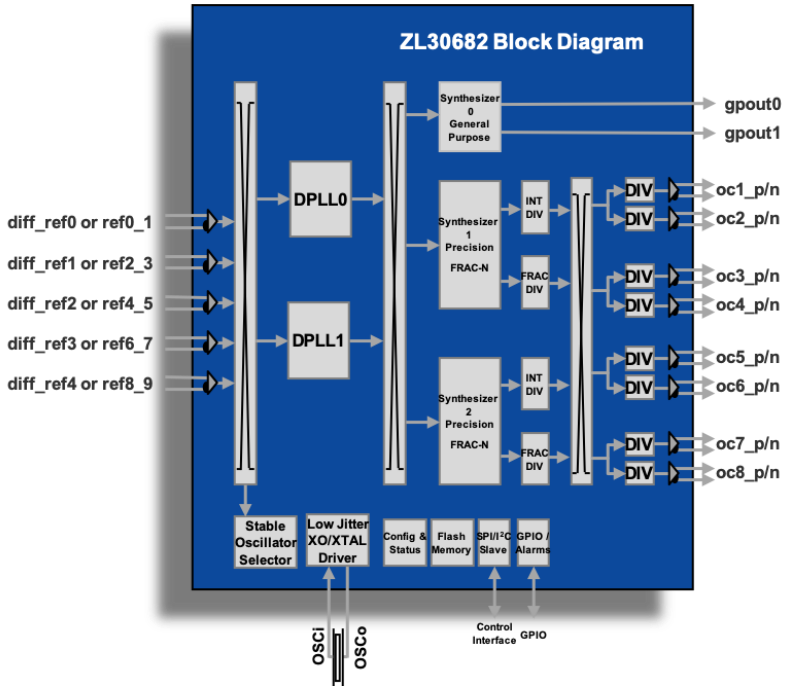
# ZL30682

Dual Channel Clock Translator

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 8 differential or 16 single ended ultra-low jitter outputs plus two general purpose CMOS outputs





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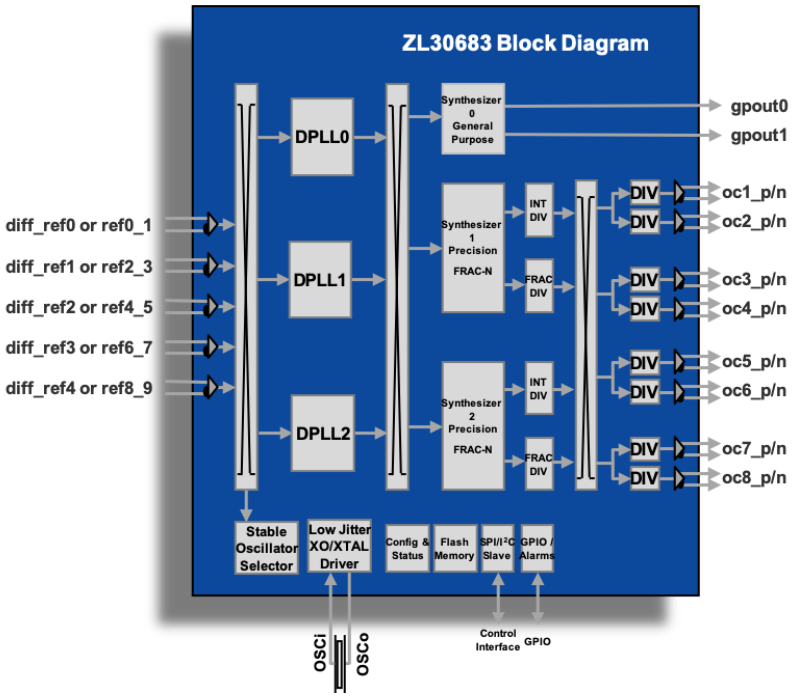
# ZL30683

Triple Channel Clock Translator

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- Two programmable ultra-low jitter synthesizers generate any frequency from 0.5 Hz to 1045 MHz
- One programmable general purpose synthesizer generates any clock from 0.5 Hz to 180 MHz
- 8 differential or 16 single ended ultra-low jitter outputs plus two general purpose CMOS outputs




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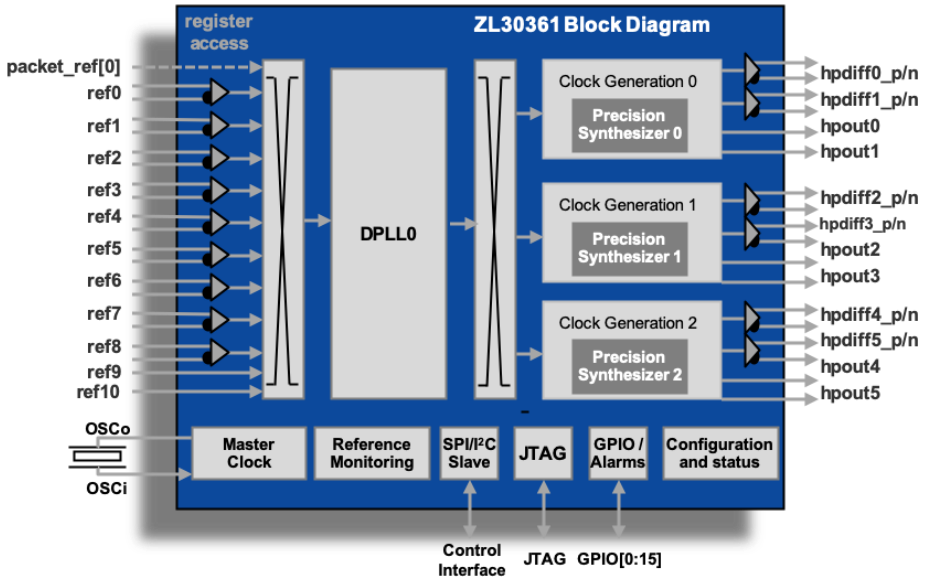
# ZL30361

IEEE 1588 & Synchronous Ethernet Packet Single Channel Clock Network Synchronizer

Online Datasheet

## Features

- Single High quality DPLL channel
- Frequency and Phase Sync over Packet Networks
  - Frequency accuracy performance for WCDMA-FDD, GSM, LTE-FDD and femtocell applications
  - Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT PEC and CES interfaces
  - Phase Synchronization performance for WCDMA-TDD, Mobile WiMAX, TD-SCDMA and CDMA2000 applications
  - Client holdover and reference switching between multiple Servers





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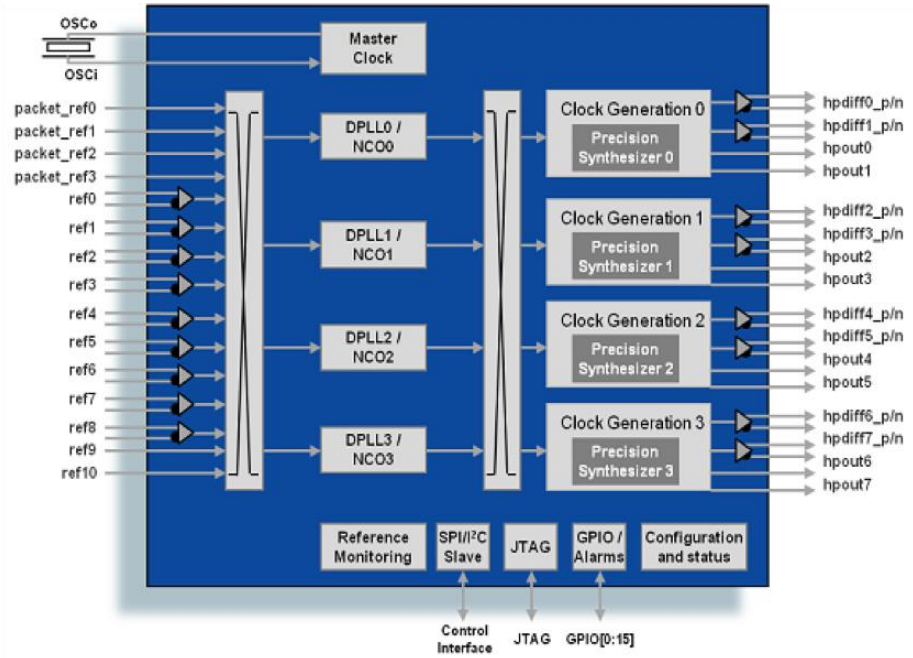
# ZL30362

IEEE 1588 & Synchronous Ethernet Packet Clock Quad Channel Network Synchronizer

Online Datasheet

## Features

- Four independent DPLLs with programmable bandwidth from 0.1 mHz up to 1 kHz
- Frequency and Phase Sync over Packet Networks
  - Frequency accuracy performance for WCDMA-FDD, GSM, LTE-FDD and femtocell applications
  - Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT PEC and CES interfaces
  - Phase synchronization performance for WCDMA-Tdd, Mobile WiMAX, TD-SCDMA and CDMA2000 applications
  - Client holdover and reference switching between multiple servers





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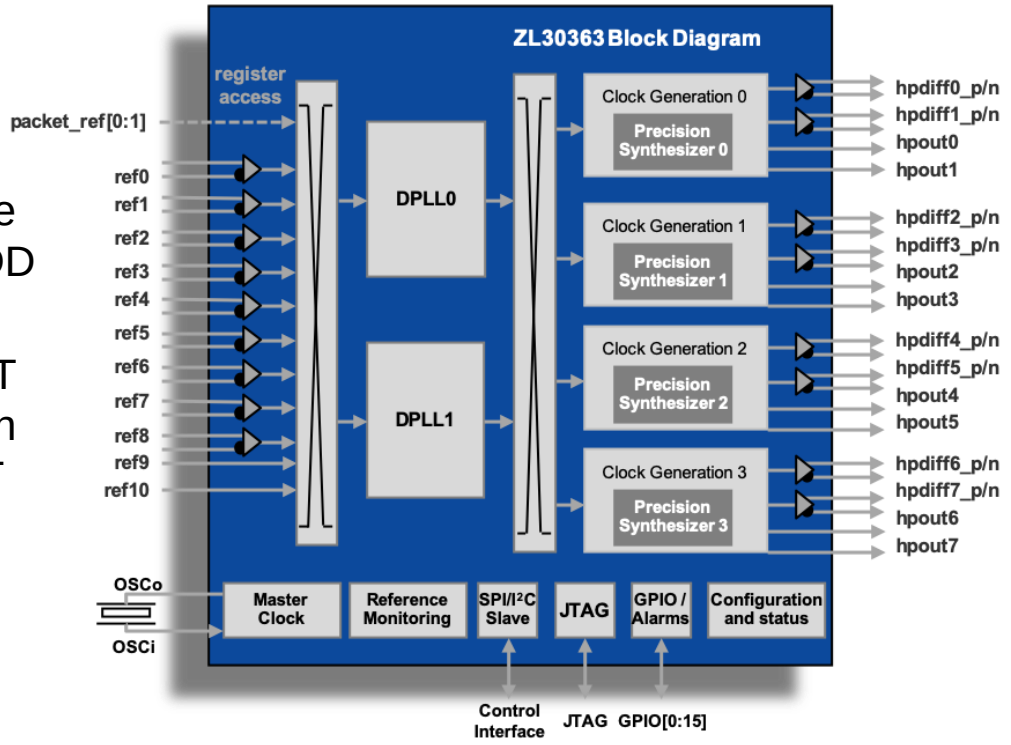
# ZL30363

IEEE 1588 & Synchronous Ethernet Packet Dual Channel Clock Network Synchronizer

Online Datasheet

## Features

- Two independent clock channels
- Frequency and Phase Sync over Packet Networks
  - Frequency accuracy performance for WCDMA-FDD, GSM, LTE-FDD and femtocell applications
  - Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT PEC and CES interfaces
  - Phase Synchronization performance for WCDMA-TDD, Mobile WiMAX, TD-SCDMA and CDMA2000 applications
  - Client holdover and reference switching between multiple Servers





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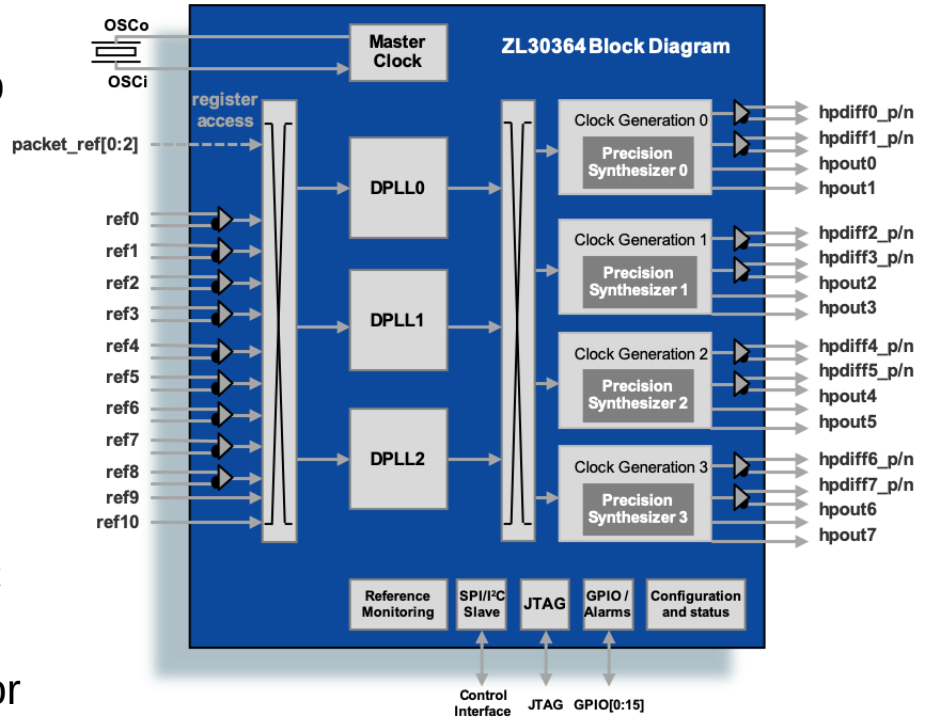
# ZL30364

IEEE 1588 & Synchronous Ethernet Packet Triple Channel Clock Network Synchronizer

Online Datasheet

## Features

- Three independent DPLLs with programmable bandwidth from 0.1 mHz up to 1 kHz
- Frequency and Phase Sync over Packet Networks
  - Frequency accuracy performance for WCDMA-FDD, GSM, LTE-FDD and femtocell applications
  - Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT PEC and CES interfaces
  - Phase synchronization performance for WCDMA-Tdd, Mobile WiMAX, TD-SCDMA and CDMA2000 applications
  - Client holdover and reference switching between multiple servers





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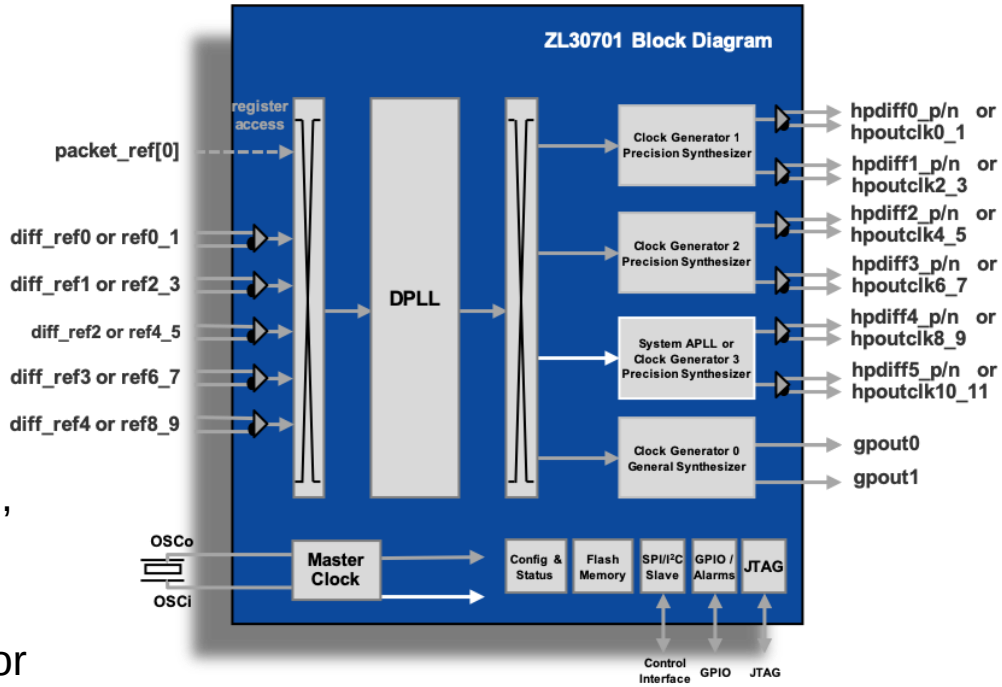
# ZL30701

IEEE 1588 & Synchronous Ethernet Packet Single Channel Clock Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Frequency accuracy performance for GSM, WCDMAFDD, LTE-FDD basestations and small cell applications, with target performance less than ± 15 ppb
- Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT EEC, PNT PEC and CES interface specifications
- Phase Synchronization performance for WCDMA-TDD, TD-SCDMA, CDMA2000, LTE-TDD and LTE-A applications with target performance less than ± 1 µs phase alignment




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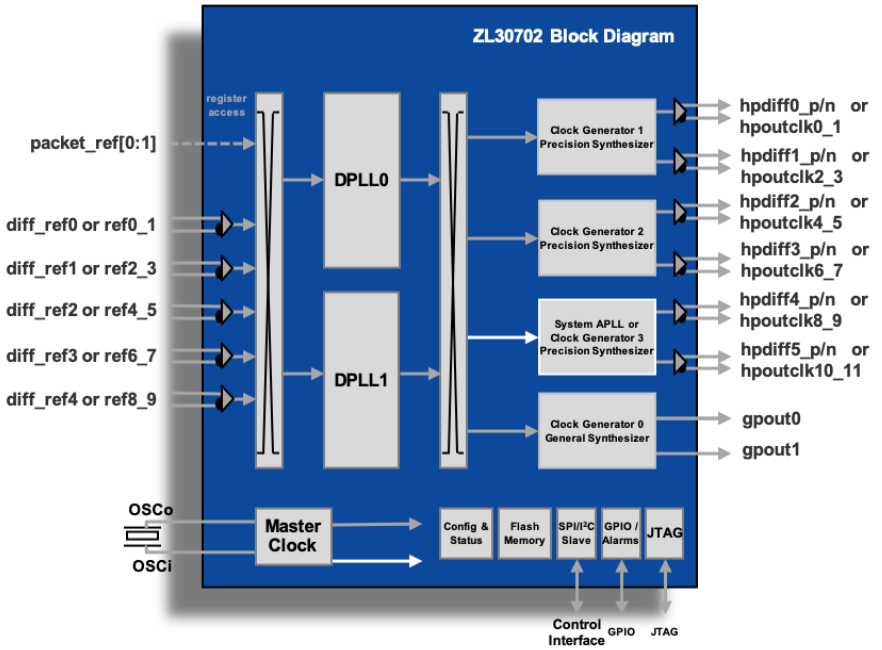
# ZL30702

IEEE 1588 & Synchronous Ethernet Packet Dual Channel Clock Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Frequency accuracy performance for GSM, WCDMAFDD, LTE-FDD basestations and small cell applications, with target performance less than ± 15 ppb
- Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT EEC, PNT PEC and CES interface specifications
- Phase Synchronization performance for WCDMA-TDD, TD-SCDMA, CDMA2000, LTE-TDD and LTE-A applications with target performance less than ± 1 µs phase alignment
- Client holdover and reference switching between multiple Servers





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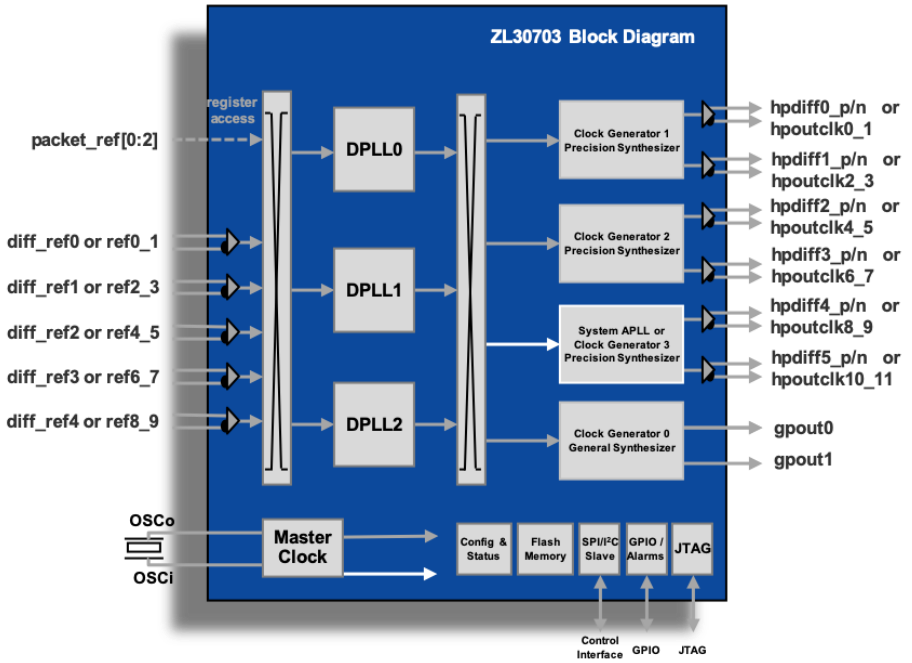
# ZL30703

IEEE 1588 & Synchronous Ethernet Packet Triple Channel Clock Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Frequency accuracy performance for GSM, WCDMAFDD, LTE-FDD base stations and small cell applications, with target performance less than ± 15 ppb
- Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT EEC, PNT PEC and CES interface specifications
- Phase Synchronization performance for WCDMA-TDD, TD-SCDMA, CDMA2000, LTE-TDD and LTE-A applications with target performance less than ± 1 µs phase alignment
- Client holdover and reference switching between multiple Servers





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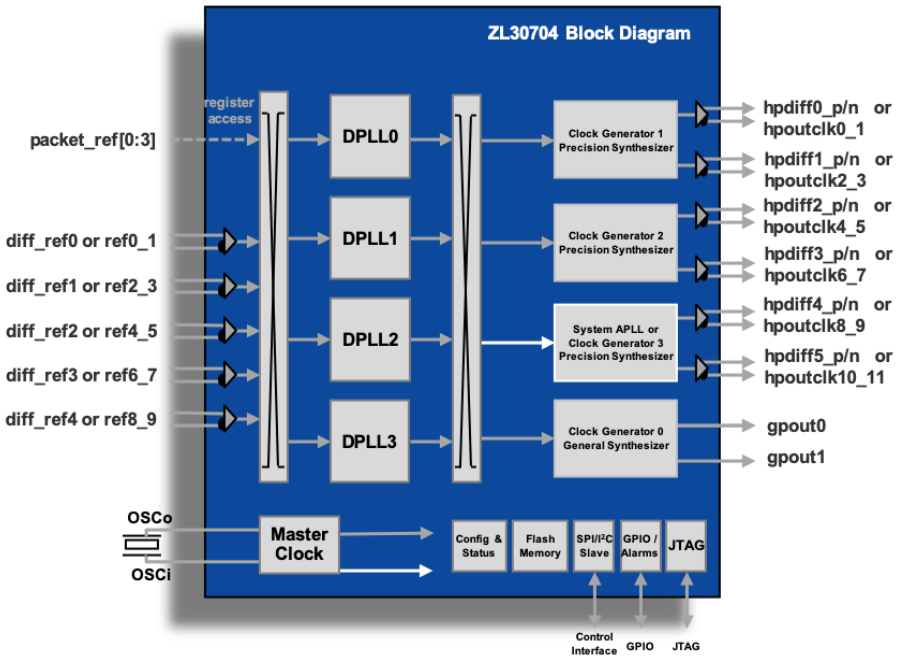
# ZL30704

IEEE 1588 & Synchronous Ethernet Packet Quad Channel Clock Network Synchronizer

Online Datasheet

## Features

- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E
- Frequency accuracy performance for GSM, WCDMAFDD, LTE-FDD base stations and small cell applications, with target performance less than ± 15 ppb
- Frequency performance for ITU-T G.823 and G.824 synchronization interface, as well as G.8261 PNT EEC, PNT PEC and CES interface specifications
- Phase Synchronization performance for WCDMA-TDD, TD-SCDMA, CDMA2000, LTE-TDD and LTE-A applications with target performance less than ± 1 µs phase alignment
- Client holdover and reference switching between multiple Servers




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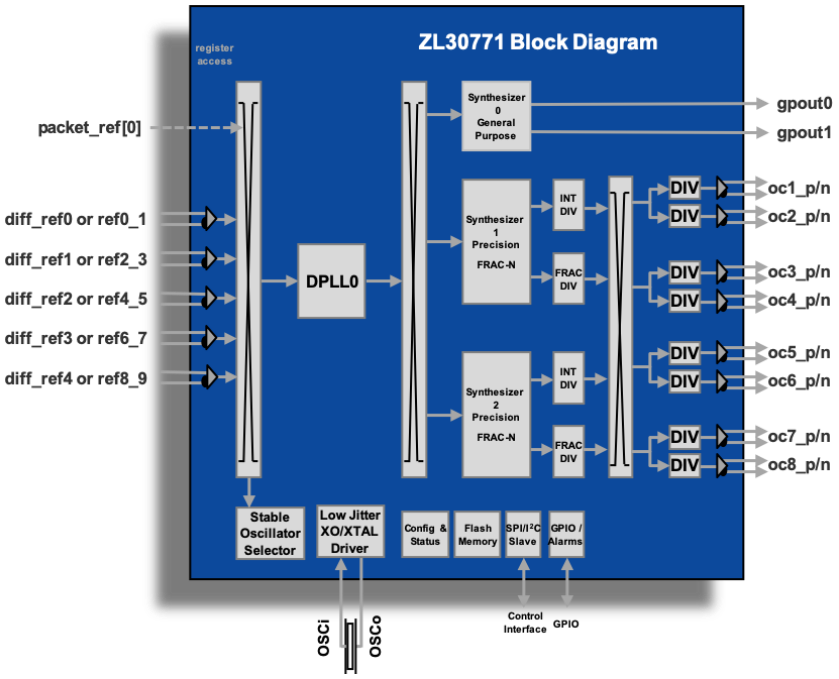
# ZL30771

IEEE 1588 & Synchronous Ethernet Packet Single Channel Clock Network Synchronizers

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- SyncE assist for high-accuracy IEEE 1588 provide lower cost end applications to assist IEEE1588 for time
- Sophisticated packet clock recovery algorithms are field proven and most widely deployed by Carriers
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E





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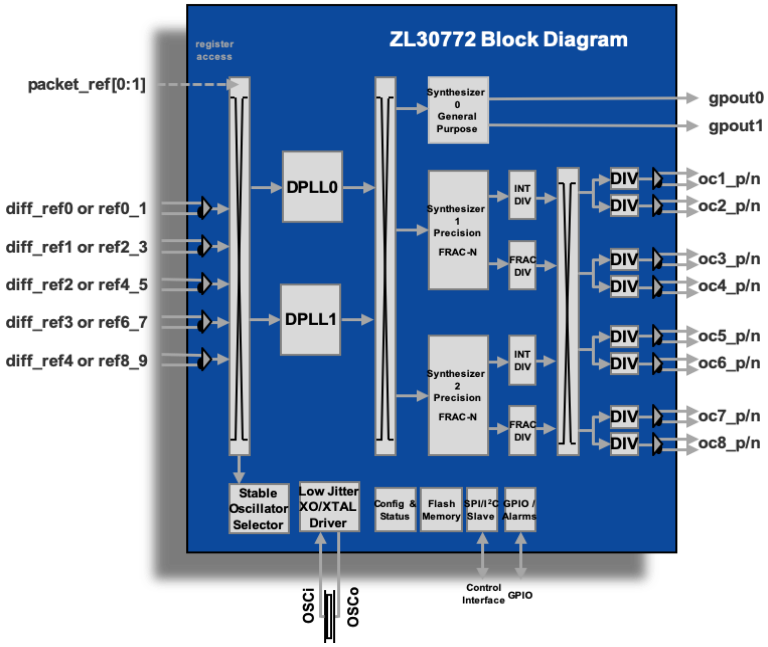
# ZL30772

IEEE 1588 & Synchronous Ethernet Packet Dual Channel Clock Network Synchronizers

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- SyncE assist for high-accuracy IEEE 1588 provide lower cost end applications to assist IEEE1588 for time
- Sophisticated packet clock recovery algorithms are field proven and most widely deployed by Carriers
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E





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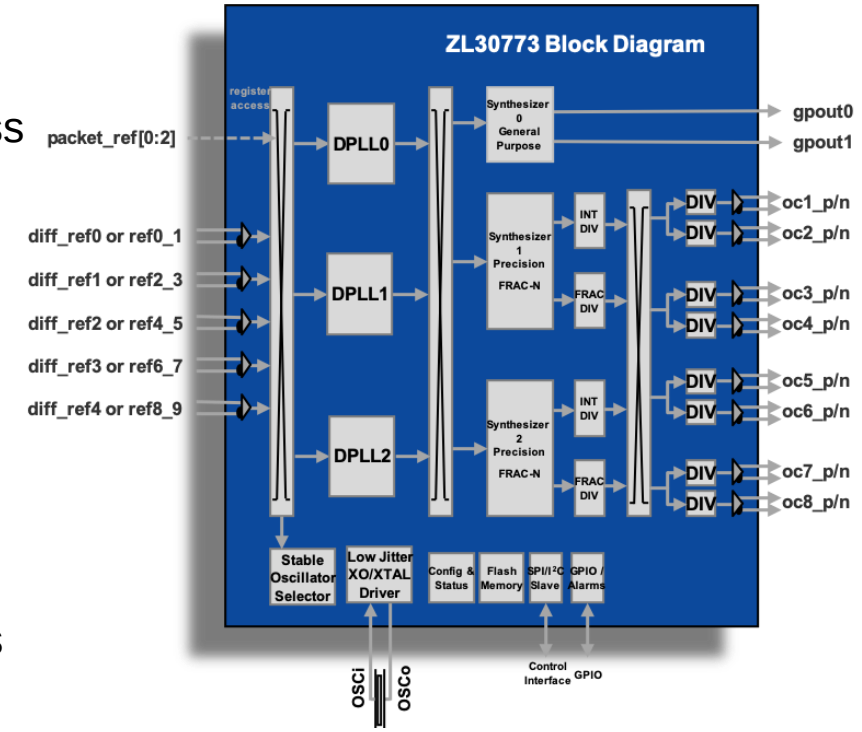
# ZL30773

IEEE 1588 & Synchronous Ethernet Packet Triple Channel Clock Network Synchronizers

Online Datasheet

## Features

- Precise phase/frequency measurement and tuning lower system latency to meet 4G LTE, 5G & Wireless Infrastructure
- Ultra-fast lock to GPS/GNSS and 1PPS for faster power-up time for 4G LTE, 5G & Wireless Infrastructure
- Precise chip-to-chip time interfaces use less backplane traces for 1PPS distribution for chassis systems
- Split oscillator option lowers cost, lowers jitter, and provides redundancy
- SyncE assist for high-accuracy IEEE 1588 provide lower cost end applications to assist IEEE1588 for time
- Sophisticated packet clock recovery algorithms are field proven and most widely deployed by Carriers
- Fully compliant to EEC (G.8262), SEC (G.813), GR-253 SMC and GR-1244 Stratum 3/3E




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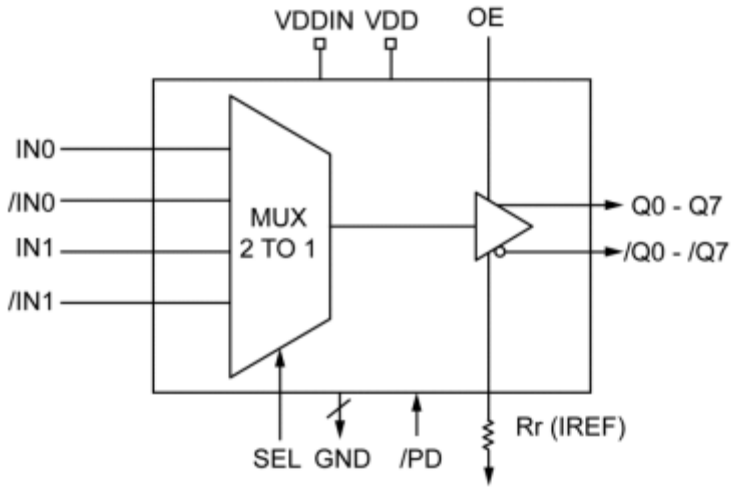
# SY75578L

PCIe Fanout Buffer 267MHz, 8 HCSL Outputs with 2 Input MUX

Online Datasheet

## Features:

- Eight differential pairs of HCSL outputs
- Two pairs of differential inputs accept LVDS – - or HCSL logic levels
- 267MHz max frequency
- Ultra low phase jitter:
  - 130fsRMS phase jitter (typ)
- <100ps output-to-output skew
- 3.3V power supply operation
- Industrial temperature range:
  - -40°C to +85°C
- Available in 32-pin QFN package




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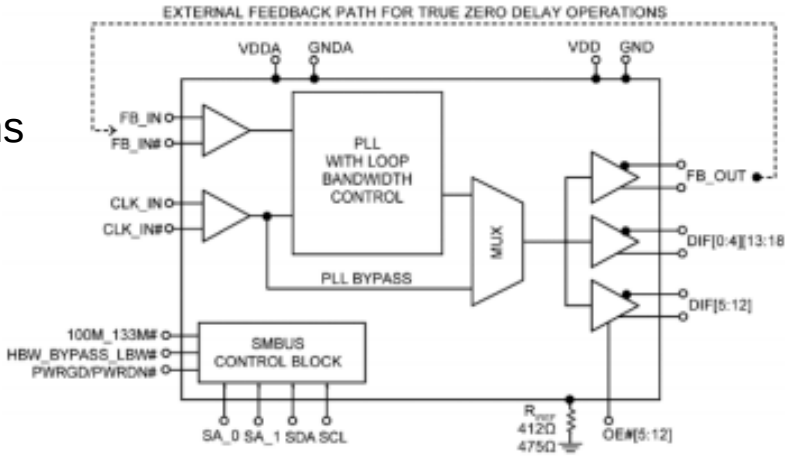
# MDB1900Z

Zero Delay Buffer for PCIe

Online Datasheet

## Features:

- Supports zero delay (0ps) buffer mode for –
  - 100MHz and 133MHz clock frequencies.
- External feedback path for true zero delay operations
- Zero delay (PLL) mode can filter jitter
- Selectable PLL bandwidth for PLL mode
- Supports fanout buffer mode for clock frequencies -
  - between 0MHz and 250MHz
- Differential input reference with HCSL logic –
  - (0V ~ 0.7V)
- Nineteen differential HCSL-compatible clock output pairs
- Eight dedicated OE# pins to control their assigned output:
  - Glitch free assertion/de-assertion.
- Spread spectrum modulation tolerant for EMI reduction
- SMBus interface for controlling output properties
  - Enable/disable and delay tuning
- Disabled outputs in power-down mode for maximum power savings
- Nine selectable SMBus addresses
- 3.3V or 2.5V operation
- Commercial temperature range: 0°C to +70°C
- 72-pin 10mm × 10mm QFN package





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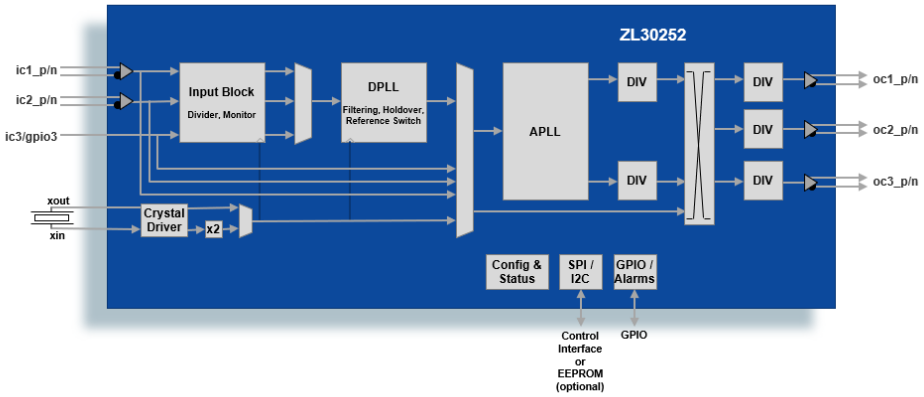
# ZL30252

4-Input, 3-Output Any-to-Any Clock Multiplier and Frequency Synthesizer IC

Online Datasheet

## Features

- Three inputs: two differential/CMOS, one CMOS
- Any input frequency from 1kHz to 1250MHz
- (1kHz to 300MHz for CMOS)
- Inputs continually monitored for activity and frequency accuracy
- Automatic or manual reference switching
- Low-Bandwidth DPLL
- Digitally controlled phase adjustment
- Automatic self-configuration at power-up from external EEPROM; up to four configs pin-selectable
- Numerically controlled oscillator mode
- Spread-spectrum modulation mode
- Zero-delay mode with external feedback
- SPI or I2C processor Interface
- Easy-to-use evaluation software





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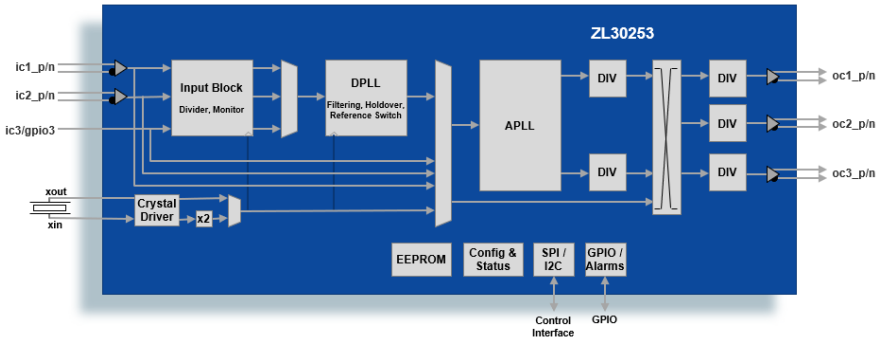
# ZL30253

4-Input, 3-Output Any-to-Any Clock Multiplier and Frequency Synthesizer IC with Internal EEPROM

Online Datasheet

## Features

- Three inputs: two differential/CMOS, one CMOS
- Any input frequency from 1kHz to 1250MHz
- (1kHz to 300MHz for CMOS)
- Inputs continually monitored for activity and frequency accuracy
- Automatic or manual reference switching
- Low-Bandwidth DPLL
- Digitally controlled phase adjustment
- Automatic self-configuration at power-up from internal EEPROM; up to four configs pin-selectable
- Numerically controlled oscillator mode
- Spread-spectrum modulation mode
- Zero-delay mode with external feedback
- SPI or I2C processor Interface
- Easy-to-use evaluation software





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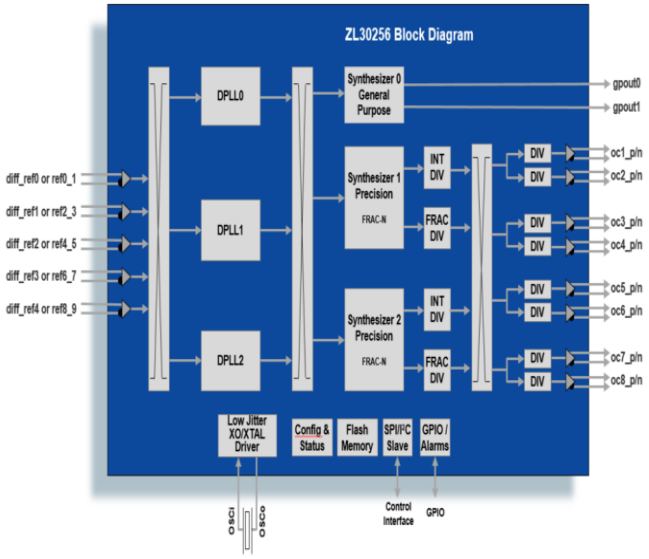
# ZL30256

**3-Channel, 10-Input, 18-Output General-Purpose Jitter Attenuator**

Online Datasheet

## Features

- One, Two or Three DPLL Channels
- Programmable bandwidth, 14Hz to 470Hz
- Free-run or holdover on loss of all inputs
- Hitless reference switching
- High-resolution holdover averaging
- Per-DPLL phase adjustment, 1ps resolution
- Programmable tracking range, phase-slope, limiting, frequency-change limiting and other advanced features
- Output Clock Frequency Generation
- Automatic self-configuration at power-up from internal Flash memory
- Input-to-output alignment <200ps (ext feedback)
- Internal compensation (1ppt) for local oscillator frequency error in DPLLs and input monitors
- Numerically controlled oscillator behavior in each DPLL and each fractional output divider




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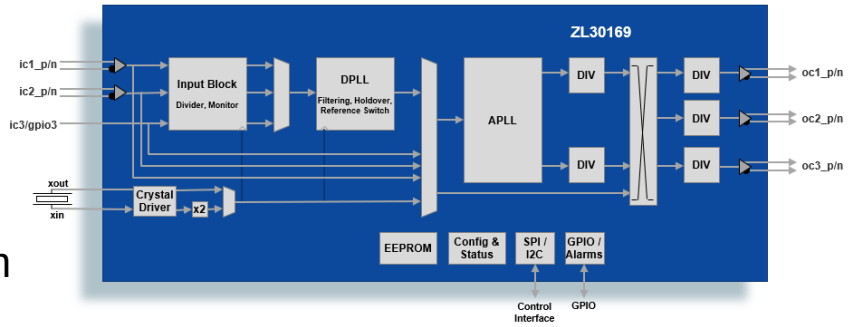
# ZL30169

Tiny 3-Input, 3-Output
Clock Translator for OTN

Online Datasheet

## Features

- Three inputs, two differential/CMOS, one CMOS
- Any input frequency from 1kHz to 1250MHz
- (1kHz to 300MHz for CMOS)
- Inputs continually monitored for activity and
- frequency accuracy
- Automatic or manual reference switching
- Low-bandwidth DPLL
- Low-jitter fractional-N APLL and 3 outputs
- Automatic self-configuration at power-up from
- internal EEPROM; up to four configurations
- pin-selectable
- Numerically controlled oscillator mode
- Zero-delay mode with external feedback
- SPI or I2C processor Interface
- Easy-to-use evaluation software





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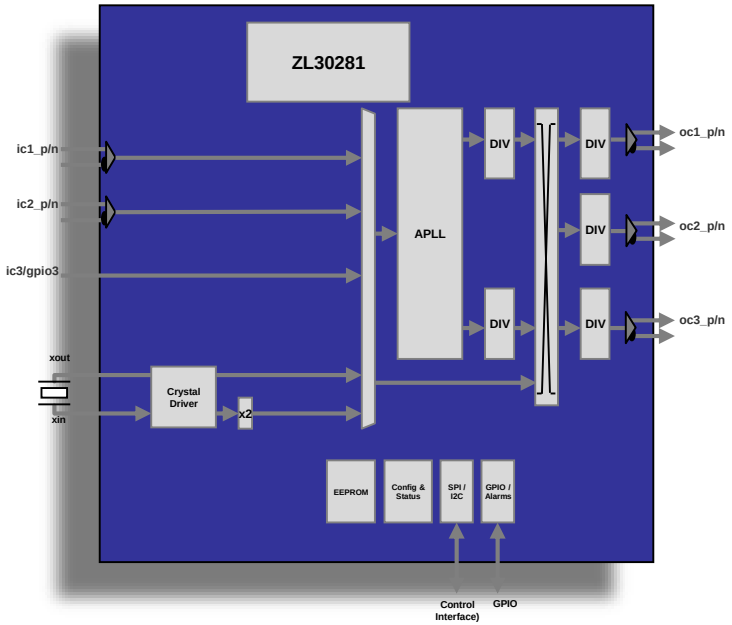
# ZL30281

Clock Generator for PCIe Gen 1-4

Online Datasheet

## Features

- 25MHz crystal or clock as input
- Up to 3 outputs with four default configurations selected by hardware pins at reset:
  - Config0:100MHz on output OC1 (CML format)
  - Config1:100MHz on OC1, OC2 (CML)
  - Config2:100MHz on OC1 (CML), OC2 (HSTL)
  - Config3: 100MHz on OC1, OC2 (CML) and 25MHz LVCMOS on OC3
- Tiny 5x5mm QFN package
- Output jitter typically <0.3ps RMS @12k~20MHz
- Clock ready indicator




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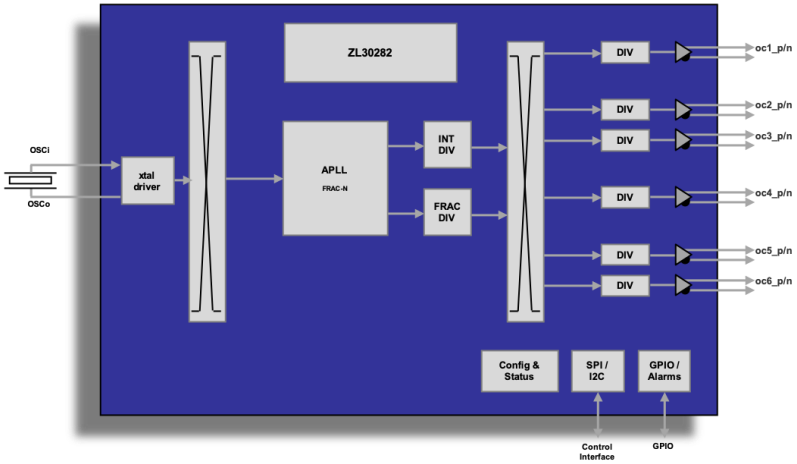
# ZL30282

Clock Generator for PCIe Gen 1-4

Online Datasheet

## Features

- 50 MHz crystal or CMOS as input
- Up to 6 output with 8 default configurations selected by hardware pins at reset (Configs 0-3 no SSC, Configs4-7 SSC for OC3-6):
  - Config0/4: OC1 100MHz HCSL, OC2_P 25MHz LVCMOS, OC3/4/5 unused, OC6 100MHz HCSL
  - Config1/5: OC1 100MHz HCSL, OC2_P 25MHz LVCMOS, OC3/4/5/6 100MHz HCSL
  - Config2/6: OC1 100MHz HCSL, OC2_P 75MHz LVCMOS, OC3/4/5/6 100MHz HCSL
  - Config3/7: OC1/2 100MHz HCSL, OC3/4/5/6 100MHz HCSL
- Space-saving 8x8mm QFN56
- Output jitter typically <0.3ps RMS @12k~20MHz
- Clock ready indicator




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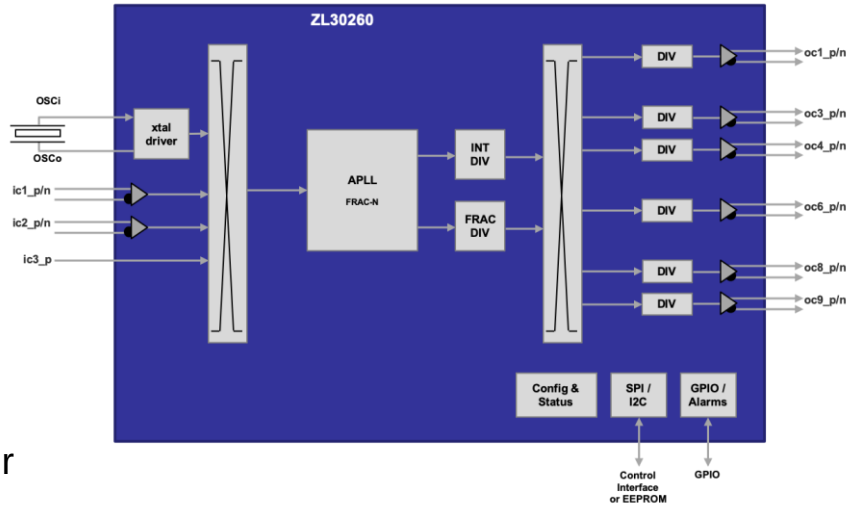
# ZL30260

6 outputs with external EEPROM
High Performance Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Activity monitors, automatic or manual switching
  - Glitchless clock switching by pin or register
- 6 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 1 fractional-N APLL with 0ppm error
  - Each APLL has a fractional divider and an integer divider to make a total of four independent frequency families
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Output jitter from fractional dividers is typically < 1ps RMS, many frequencies <0.5ps RMS
  - Each output has an independent divider





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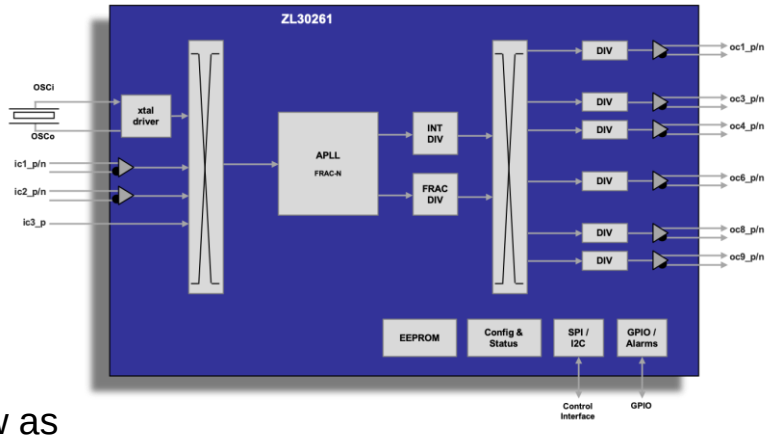
# ZL30261

6 outputs with internal EEPROM
High Performance Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Activity monitors, automatic or manual switching
  - Glitchless clock switching by pin or register
- 6 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 1 fractional-N APLL with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Output jitter from fractional dividers is typically < 1ps RMS, many frequencies <0.5ps RMS
  - Each output has an independent divider
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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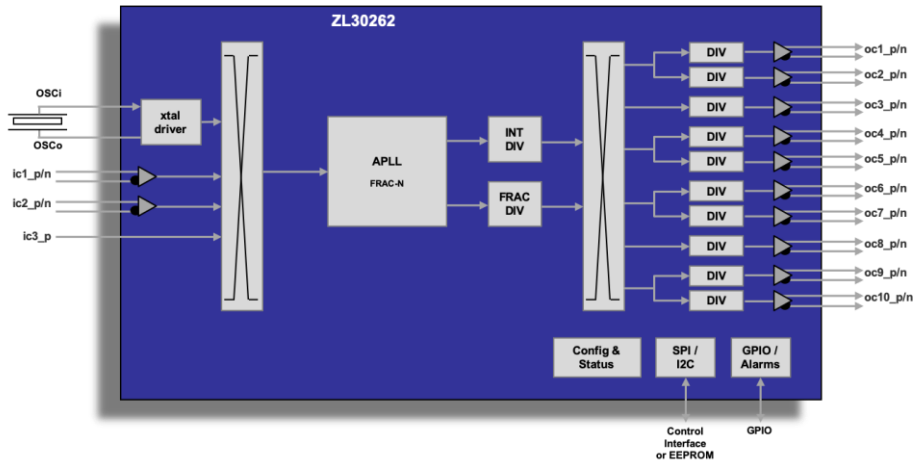
# ZL30262

10 outputs with external EEPROM
High Performance Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 10 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 1 fractional-N APLL with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Output jitter from fractional dividers is typically < 1ps RMS, many frequencies <0.5ps RMS
  - Each output has an independent divider
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL




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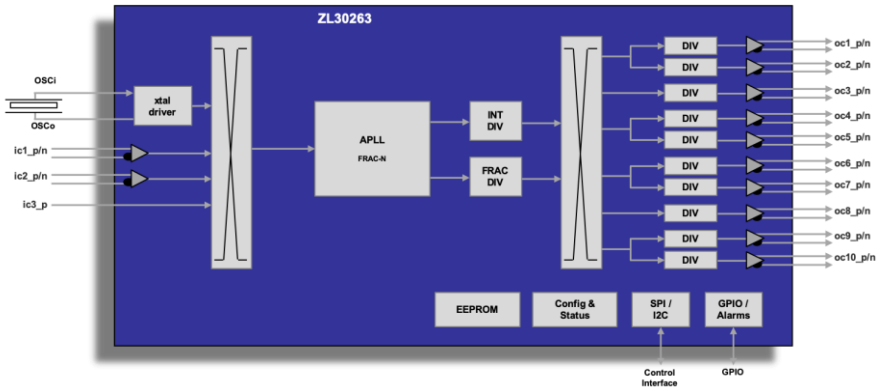
# ZL30263

10 outputs with internal EEPROM Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 10 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 1 fractional-N APLL with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Output jitter from fractional dividers is typically < 1ps RMS, many frequencies <0.5ps RMS
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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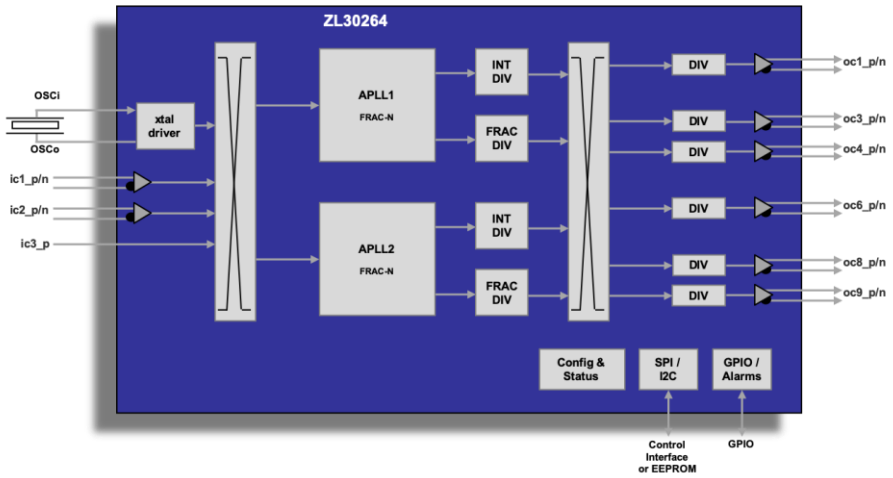
# ZL30264

6 outputs with external EEPROM Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 6 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 2 fractional-N APLLs with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Each output has an independent divider
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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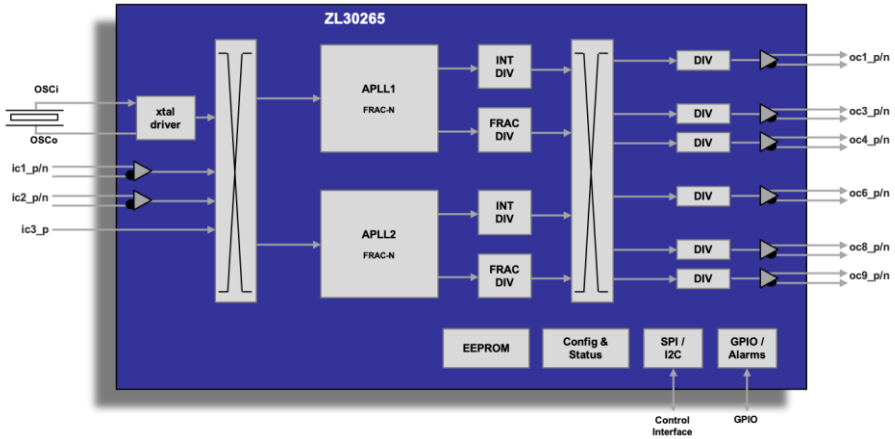
# ZL30265

6 outputs with internal EEPROM Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 6 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 2 fractional-N APLLs with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Each output has an independent divider
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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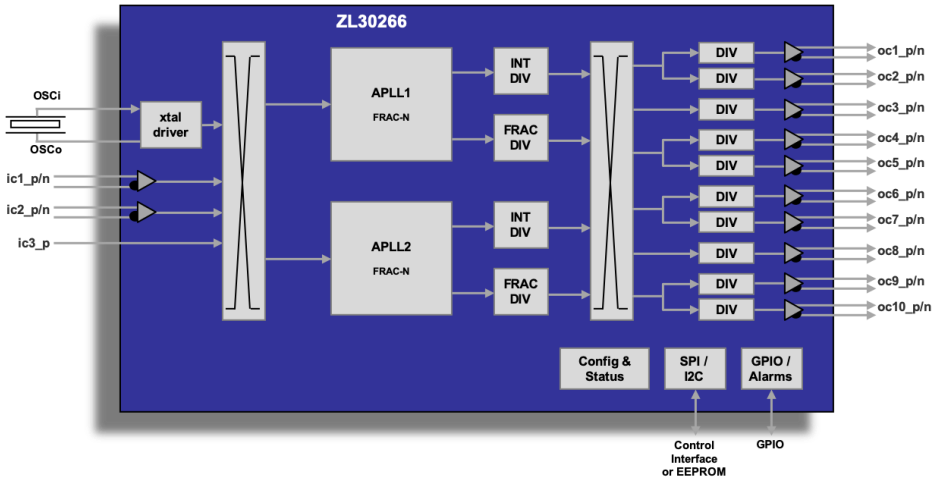
# ZL30266

10 outputs with external EEPROM Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 10 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 2 fractional-N APLLs with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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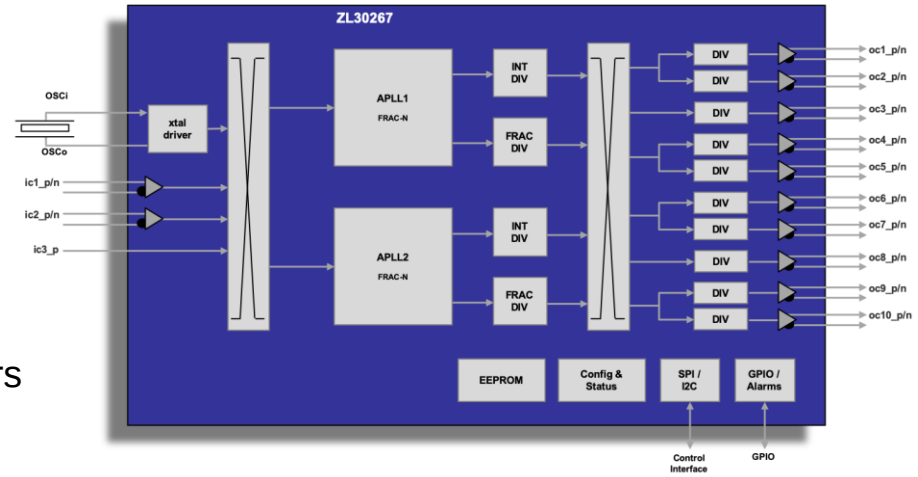
# ZL30267

10 outputs with internal EEPROM
Clock Generator

Online Datasheet

## Features

- Two Flexible Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1.25GHz (300MHz max for CMOS)
  - Glitchless clock switching by pin or register
- 10 Any-Frequency, Any-Format Outputs
  - Any output frequency from 1Hz to 1045MHz
  - 2 fractional-N APLLs with 0ppm error
  - Output jitter from integer multiply and dividers as low as 0.17ps RMS (12kHz-20MHz)
  - Each output has an independent divider
  - Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V





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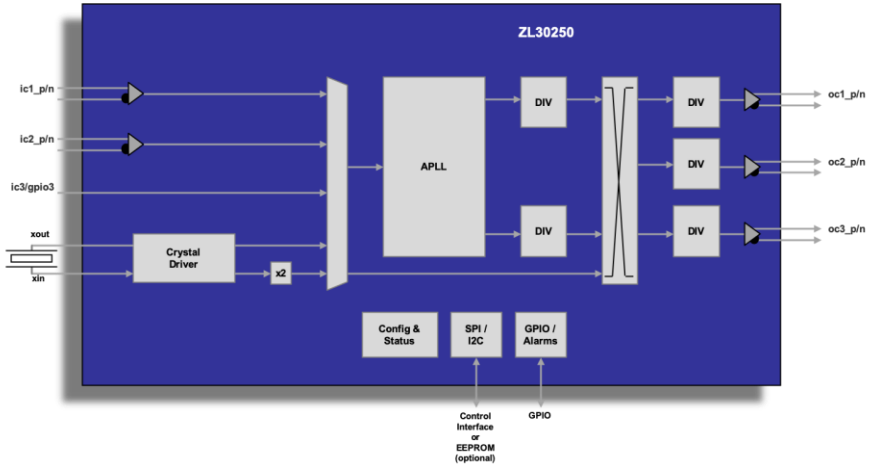
# ZL30250

4-Input, 3-Output Any-to-Any Clock Generator

Online Datasheet

## Features

- Four Input Clocks
  - One crystal/CMOS Input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1250MHz (9.72MHz to 300MHz for CMOS)
  - Clock selection by pin or register control
- Low-Jitter Fractional-N APLL and 3 Outputs
  - Any output frequency from <1Hz to 1035MHz
  - High-resolution fractional frequency conversion with 0ppm error
  - Output jitter as low as 0.16ps RMS (12kHz to 20MHz integration band)
  - Outputs are CML or 2xCMOS, can interface to LVDS, LVPECL, HSTL, SSTL and HCSL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)
  - Per-output supply pin with CMOS output voltages from 1.5V to 3.3V




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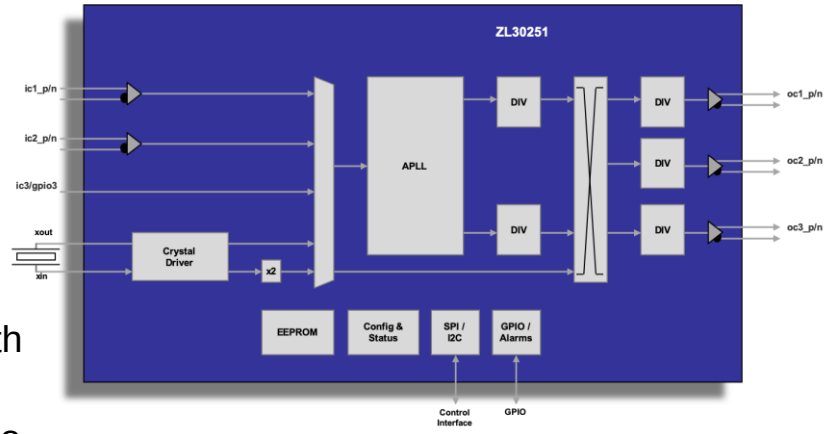
# ZL30251

4-Input, 3-Output Any-to-Any Clock Generator

Online Datasheet

## Features

- Four Input Clocks
  - One crystal/CMOS Input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1250MHz (9.72MHz to 300MHz for CMOS)
  - Clock selection by pin or register control
- Low-Jitter Fractional-N APLL and 3 Outputs
  - Any output frequency from <1Hz to 1035MHz
  - High-resolution fractional frequency conversion with 0ppm error
  - Easy-to-configure, encapsulated design requires no external VCXO or loop filter components
  - Each output has independent dividers
  - Output jitter as low as 0.16ps RMS (12kHz to 20MHz integration band)
  - Outputs are CML or 2xCMOS, can interface to LVDS, LVPECL, HSTL, SSTL and HCSL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)




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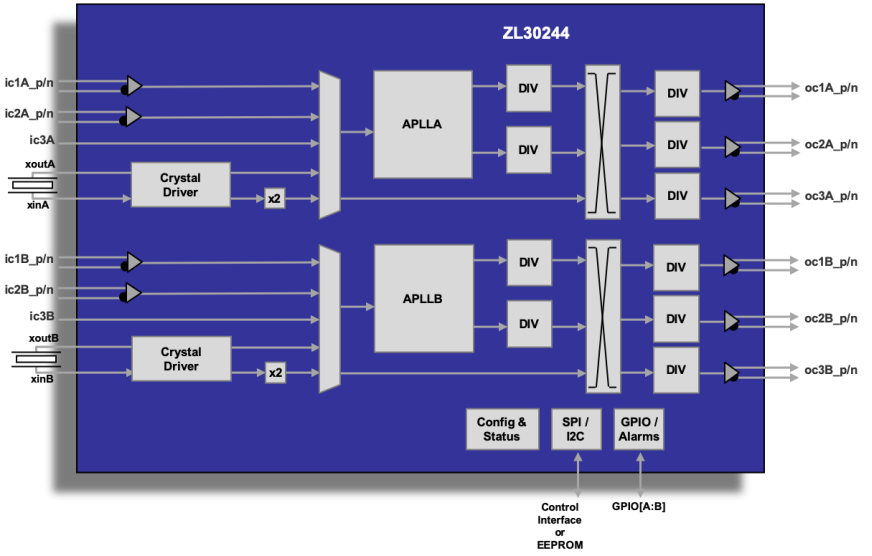
# ZL30244

Dual-Channel Any-to-Any Clock Generator

Online Datasheet

## Features

- Four Input Clocks
  - One crystal/CMOS Input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1250MHz (9.72MHz to 300MHz for CMOS)
  - Clock selection by pin or register control
- Low-Jitter Fractional-N APLL and 3 Outputs
  - Any output frequency from <1Hz to 1035MHz
  - High-resolution fractional frequency conversion with 0ppm error
  - Each output has independent dividers
  - Output jitter as low as 0.16ps RMS (12kHz to 20MHz integration band)
  - Outputs are CML or 2xCMOS, can interface to LVDS, LVPECL, HSTL, SSTL and HCSL
  - In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)





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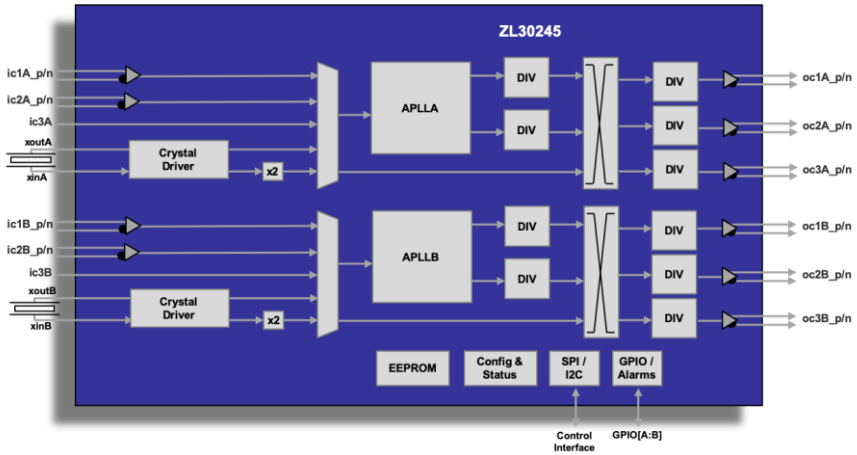
# ZL30245

Dual-Channel Any-to-Any Clock Generator

Online Datasheet

## Key Features

- Any input frequency from 9.72MHz to 1250MHz (9.72MHz to 300MHz for CMOS)
- Low-Jitter Fractional-N APLL and 3 Outputs
- Any output frequency from <1Hz to 1035MHz
- High-resolution fractional frequency conversion with 0ppm error
- Easy-to-configure, encapsulated design requires no external VCXO or loop filter components
- Each output has independent dividers
- Output jitter as low as 0.16ps RMS (12kHz to 20MHz integration band)
- Outputs are CML or 2xCMOS, can interface to LVDS, LVPECL, HSTL, SSTL and HCSL




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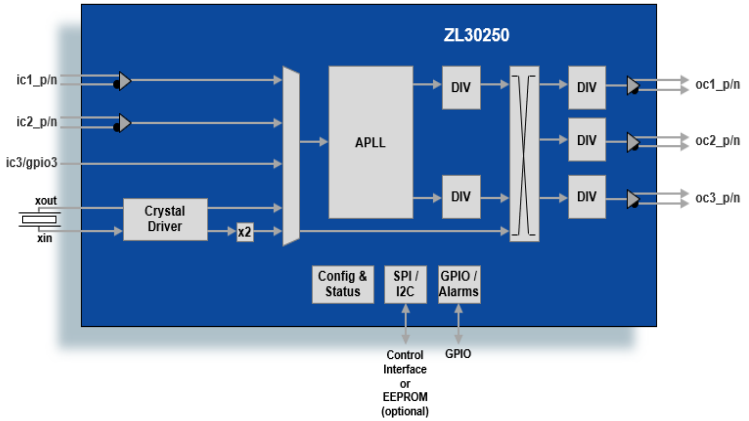
# ZL30250

4-Input, 3-Output Any-to-Any Clock Generator

Online Datasheet

## Features

- Any input frequency from 9.72MHz to 1250MHz
- Clock selection by pin or register control
- Low-Jitter Fractional-N APLL and 3 Outputs
- Any output frequency from <1Hz to 1035MHz
- Easy-to-configure, encapsulated design
- Each output has independent dividers
- Output jitter as low as 0.16ps RMS (12kHz-
- 20MHz integration band)
- Outputs are CML or 2xCMOS, can interface to
- LVDS, LVPECL, HSTL, SSTL and HCSL
- In 2xCMOS mode, the P and N pins can be
- different frequencies (e.g. 125MHz and 25MHz)




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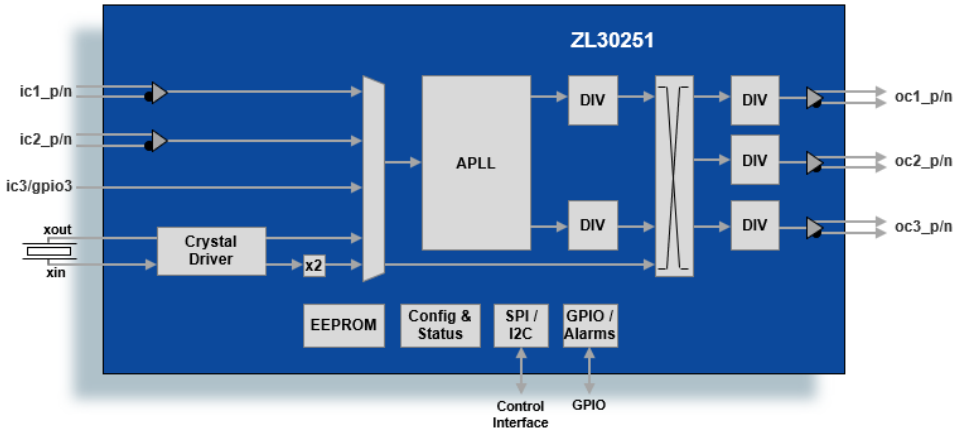
# ZL30251

**4-Input, 3-Output Any-to-Any Clock Generator with Internal EEPROM**

Online Datasheet

## Features

- Four Input Clocks
  - One crystal/CMOS input
  - Two differential/CMOS inputs
  - One single-ended/CMOS input
  - Any input frequency from 9.72MHz to 1250MHz
  - (9.72MHz to 300MHz for CMOS)
  - Clock selection by pin or register control
- *Low-Jitter Fractional-N APLL and 3 Outputs*
  - Any output frequency from <1Hz to 1035MHz
  - High-resolution fractional frequency conversion
  - with 0ppm error
  - Easy-to-configure, encapsulated design
  - requires no external VCXO or loop filter
  - components
  - Each output has independent dividers
  - Output jitter as low as 0.16ps RMS (12kHz-
  - 20MHz integration band)
  - Outputs are CML or 2xCMOS, can interface to
  - LVDS, LVPECL, HSTL, SSTL and HCSL
  - In 2xCMOS mode, the P and N pins can be
  - different frequencies (e.g. 125MHz and 25MHz)
  - Per-output supply pin with CMOS output
  - voltages from 1.5V to 3.3V
  - Precise output alignment circuitry and per output
  - phase adjustment
  - Per-output enable/disable and glitch-less
  - start/stop (stop high or low)





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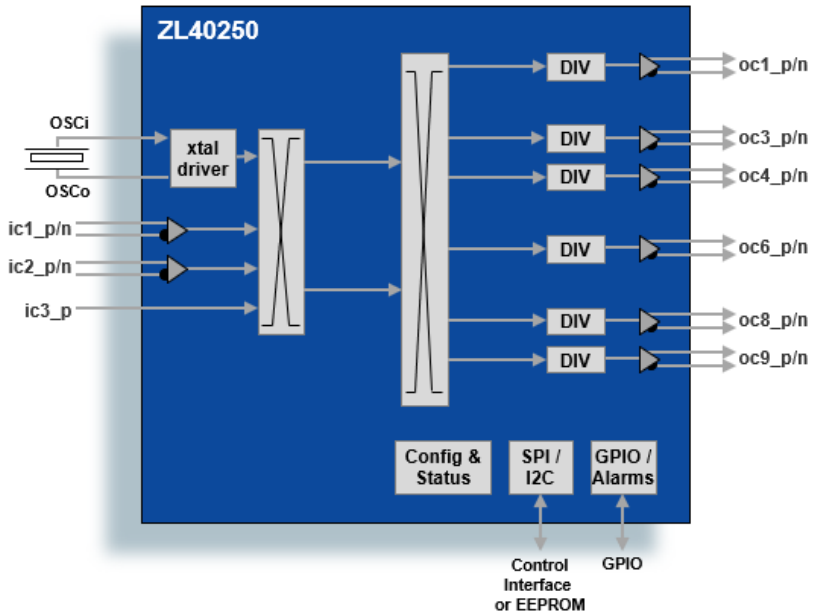
# ZL40250

## 6 Output Programmable Fanout Buffer Multi-Format I/O and Dividers

Online Datasheet

## Features

- Four flexible input clocks
- One crystal/CMOS input
- Two differential/CMOS inputs
- One single-ended/CMOS input
- Any input frequency up to 1GHz (300MHz for CMOS)
- Manual clock switching by pin or register
- 6 Universal Output Clocks with Dividers
- Each output has independent divider
- Low additive jitter <200fs RMS (12kHz-20MHz, for input frequencies ≥100MHz)
- Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
- In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)*
- Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V
- Precise output alignment circuitry from GPIO pin or register bit*
- Per-output skew adjustment*
- Per-output enable/disable and glitch-less start/stop (stop high or low)




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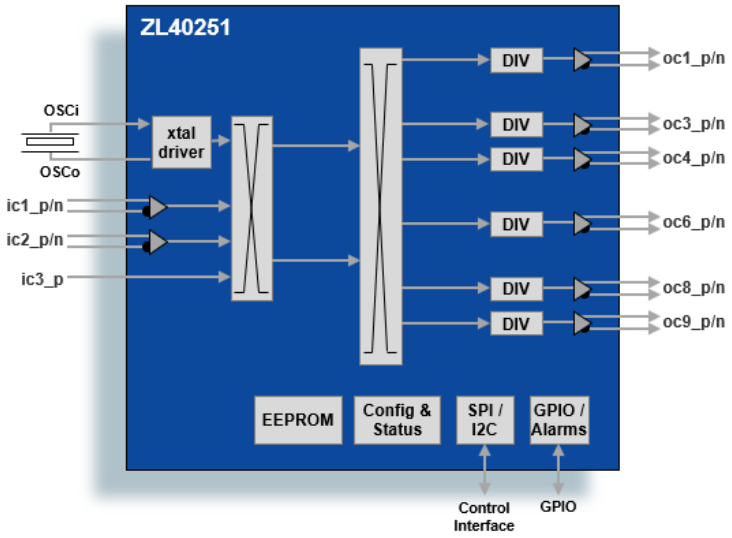
# ZL40251

6 Output Programmable Fanout Buffer
Multi-Format I/O and Dividers with Internal EEPROM

Online Datasheet

## Features

- Four flexible input clocks
- One crystal/CMOS input
- Two differential/CMOS inputs
- One single-ended/CMOS input
- Any input frequency up to 1GHz (300MHz for CMOS)
- Manual clock switching by pin or register
- 6 Universal Output Clocks with Dividers
- Each output has independent divider
- Low additive jitter <200fs RMS (12kHz-20MHz, for input frequencies 100MHz)
- Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
- In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)*
- Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V
- Precise output alignment circuitry from GPIO pin or register bit*
- Per-output skew adjustment*
- Per-output enable/disable and glitch-less start/stop (stop high or low)
- Internal EEPROM





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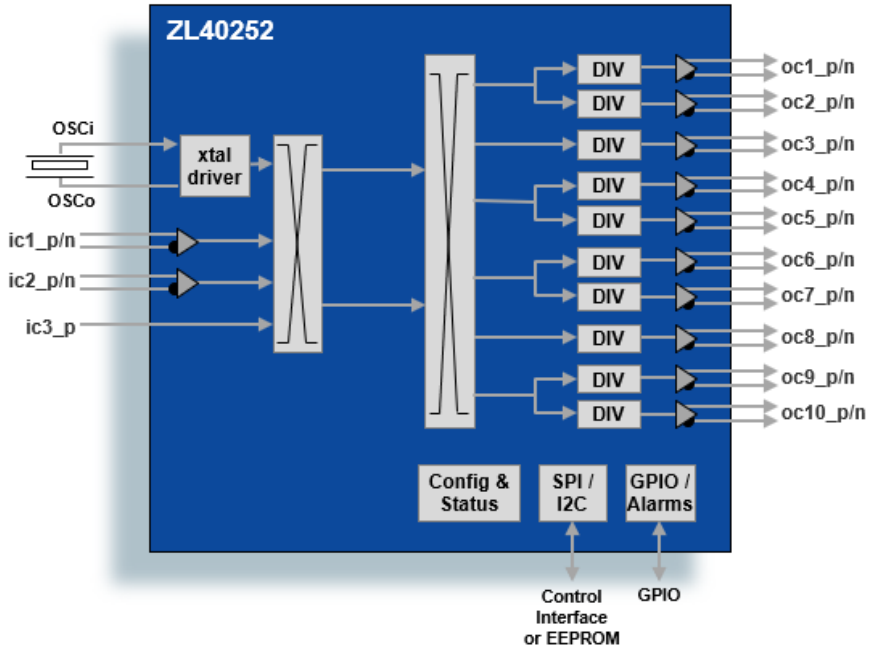
# ZL40252

10 Output Programmable Fanout Buffer
Multi-Format I/O and Dividers

Online Datasheet

## Features

- Four flexible input clocks
- One crystal/CMOS input
- Two differential/CMOS inputs
- One single-ended/CMOS input
- Any input frequency up to 1GHz (300MHz for CMOS)
- Manual clock switching by pin or register
- 6 Universal Output Clocks with Dividers
- Each output has independent divider
- Low additive jitter <200fs RMS (12kHz-20MHz, for input frequencies 100MHz)
- Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
- In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)*
- Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V
- Precise output alignment circuitry from GPIO pin or register bit*
- Per-output skew adjustment*
- Per-output enable/disable and glitch-less start/stop (stop high or low)





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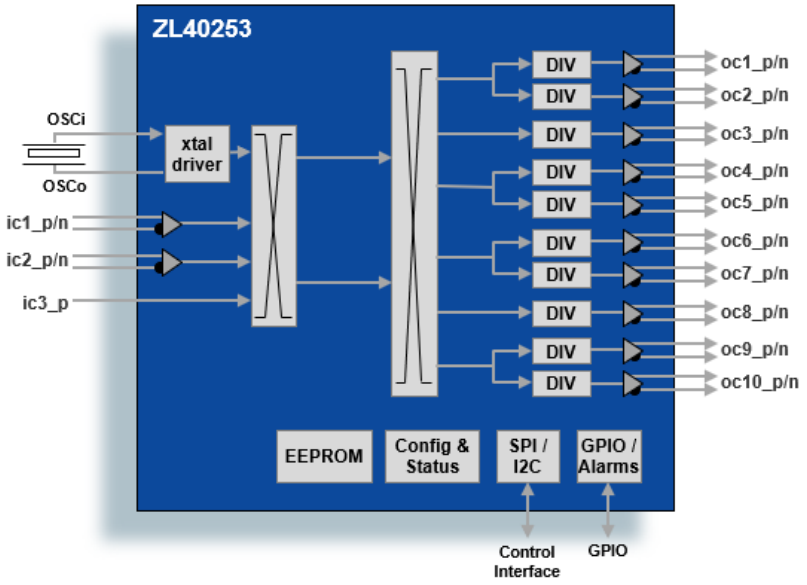
# ZL40253

## 10 Output Programmable Fanout Buffer Multi-Format I/O and Dividers

Online Datasheet

## Features

- Four flexible input clocks
- One crystal/CMOS input
- Two differential/CMOS inputs
- One single-ended/CMOS input
- Any input frequency up to 1GHz (300MHz for CMOS)
- Manual clock switching by pin or register
- 6 Universal Output Clocks with Dividers
- Each output has independent divider
- Low additive jitter <200fs RMS (12kHz-20MHz, for input frequencies 100MHz)
- Each output configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
- In 2xCMOS mode, the P and N pins can be different frequencies (e.g. 125MHz and 25MHz)*
- Multiple output supply voltage banks with CMOS output voltages from 1.5V to 3.3V
- Precise output alignment circuitry from GPIO pin or register bit*
- Per-output skew adjustment*
- Per-output enable/disable and glitch-less start/stop (stop high or low)
- Internal EEPROM





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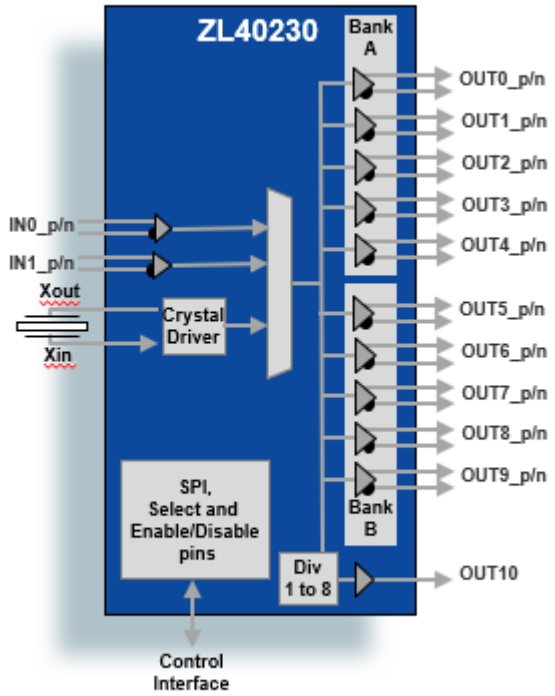
# ZL40230

## Low Skew, Low Additive Jitter 10 output LVPECL/LVDS/HCSL Fanout Buffer one LVCMOS output

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Ten differential LVPECL/LVDS/HCSL outputs
- One LVCMOS output
- Ultra-low additive jitter: 24fs (integration band: 12kHz to 20MHz at 625MHz clock frequency)
- Supports clock frequencies from 0 to 1.6GHz
- Supports 2.5V or 3.3V power supplies on LVPECL/LVDS/HCSL outputs
- Supports 1.5V, 1.8V, 2.5V or 3.3V on LVCMOS output
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 40ps
- Device controlled via SPI or hardware control pins





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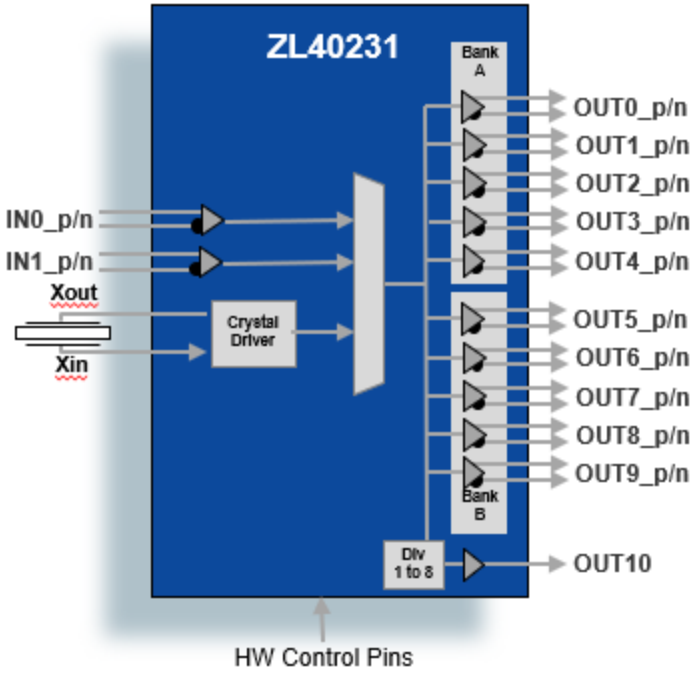
# ZL40231

**Low Skew, Low Additive Jitter 3:10 LVPECL/LVDS/HCSL Fanout Buffer one LVCMOS output**

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Ten differential LVPECL/LVDS/HCSL outputs
- One LVCMOS output
- Ultra-low additive jitter: 24fs (integration band: 12kHz to 20MHz at 625MHz clock frequency)
- Supports clock frequencies from 0 to 1.6GHz
- Supports 2.5V or 3.3V power supplies on LVPECL/LVDS/HCSL outputs
- Supports 1.5V, 1.8V, 2.5V or 3.3V on LVCMOS output
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 40ps
- Device controlled control pins





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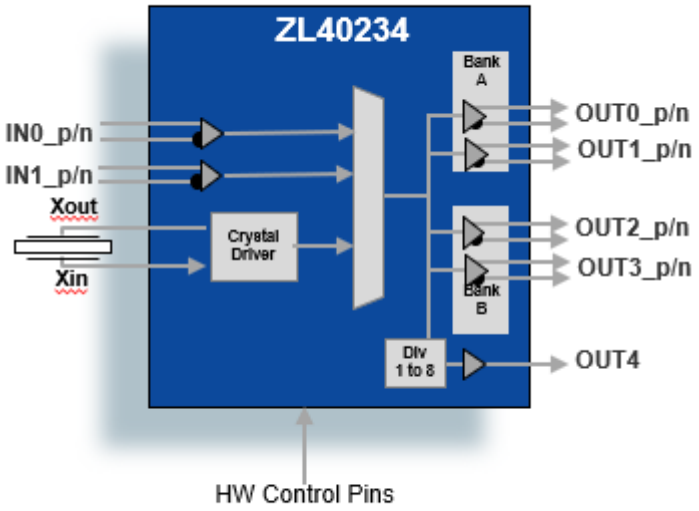
# ZL40234

**Low Skew, Low Additive Jitter 3:4 LVPECL/LVDS/HCSL Fanout Buffer one LVCMOS output**

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Five differential LVPECL/LVDS/HCSL outputs and one LVCMOS output
- Ultra-low additive jitter: 24fs (integration band 12kHz to 20MHz at 625MHz clock frequency)
- Supports clock frequencies from 0 to 1.6GHz
- Supports 2.5V or 3.3V power supplies for LVPECL, LVDS or HCSL outputs
- Supports 1.5V, 1,8V, 2.5V or 3.3V power supplies for LVCMOS output
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 40ps
- Device controlled via hardware pins




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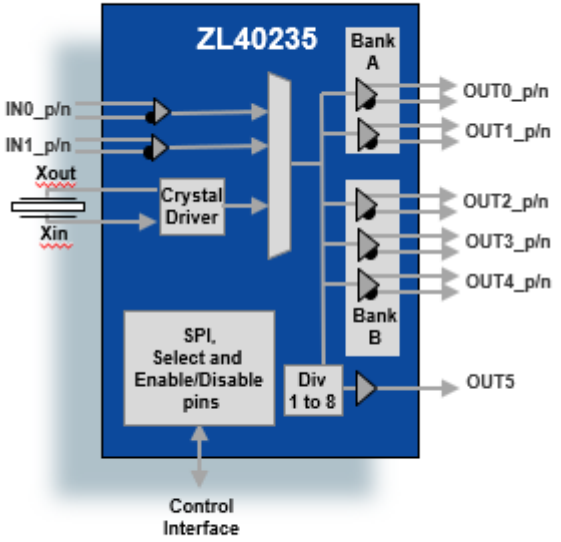
# ZL40235

**Low Skew, Low Additive Jitter 3:5 LVPECL/LVDS/HCSL Fanout Buffer with one LVCMOS output**

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Five differential LVPECL/LVDS/HCSL outputs and one LVCMOS output
- Ultra-low additive jitter: 24fs (integration band 12kHz to 20MHz at 625MHz clock frequency)
- Supports clock frequencies from 0 to 1.6GHz
- Supports 2.5V or 3.3V power supplies for LVPECL, LVDS or HCSL outputs
- Supports 1.5V, 1,8V, 2.5V or 3.3V power supplies for LVCMOS output
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 40ps
- Device controlled via SPI or hardware pins





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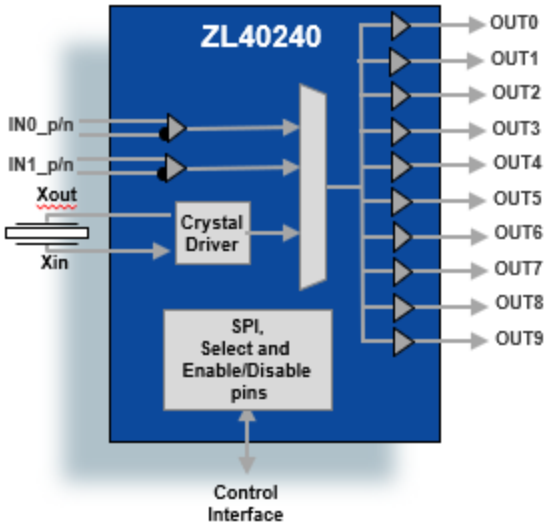
# ZL40240

## Low Additive Jitter Fanout Buffer 3:10 LVCMOS Output

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Ten 1.5V/1.8V/2.5V/3.3V LVCMOS outputs
- Supports frequencies from 0 to 250MHz
- Ultra-low system level additive jitter: 17fs (12kHz to 20MHz)
- Ultra-low noise floor of -170dBc/Hz
- Supports crystals from 8MHz to 160MHz
- Supports 2.5V or 3.3V power supplies
- Output to output skew of 30ps (typical)
- Input to output delay of 2ns (typical)
- SPI or Hardware control





<< BACK

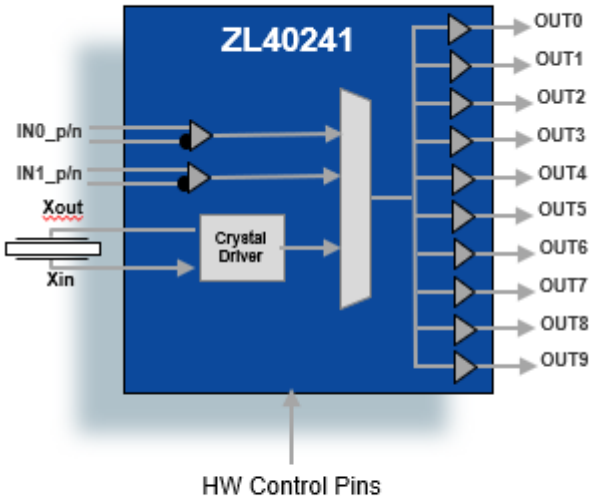
# ZL40241

Low Additive Jitter Fanout Buffer
3:10 LVCMOS Output

Online Datasheet

## Features

- 3 to 1 input Multiplexer: Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML, LVCMOS) or a single ended signal and the third input accepts a crystal or a single ended signal
- Ten 1.5V/1.8V/2.5V/3.3V LVCMOS outputs
- Supports frequencies from 0 to 250MHz
- Ultra-low system level additive jitter: 17fs (12kHz to 20MHz)
- Ultra-low noise floor of -170dBc/Hz
- Supports crystals from 8MHz to 160MHz
- Supports 2.5V or 3.3V power supplies
- Output to output skew of 30ps (typical)
- Input to output delay of 2ns (typical)
- Hardware pin control




<< BACK

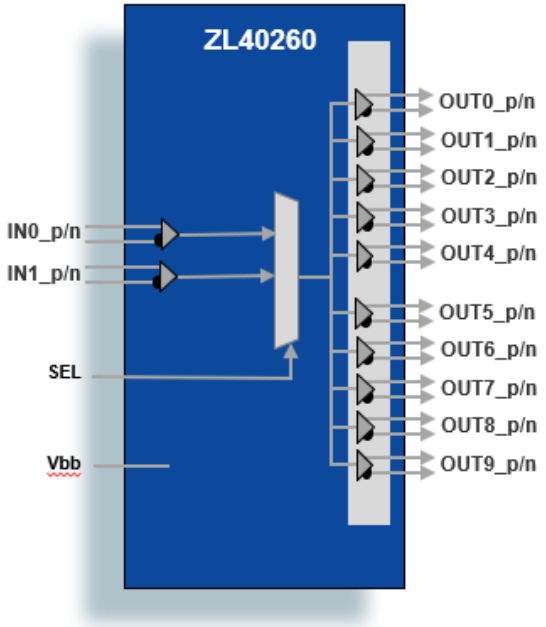
# ZL40260

**Low Skew, Low Additive Jitter Fanout Buffer 2:10 LVPECL**

Online Datasheet

## Features

- Two inputs accept any differential (LVPECL, HCSL, LVDS, SSTL, CML) or single ended LVCMOS signal
- Ten 2.5V/3.3V LVPECL outputs
- Ultra-low additive jitter: 53fs for 125 MHz clock measured in 12KHz to 20MHz band
- Supports clock frequencies from 0 to 1.6GHz
- Supports 2.5V or 3.3V power supplies
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- Maximum input to output delay of 1.2ns
- Small input to output delay variation over voltage, temperature and process of 0.34ns
- Fast rise and fall times of 168ps
- Phase noise floor below -160dB/Hz for 125MHz clock





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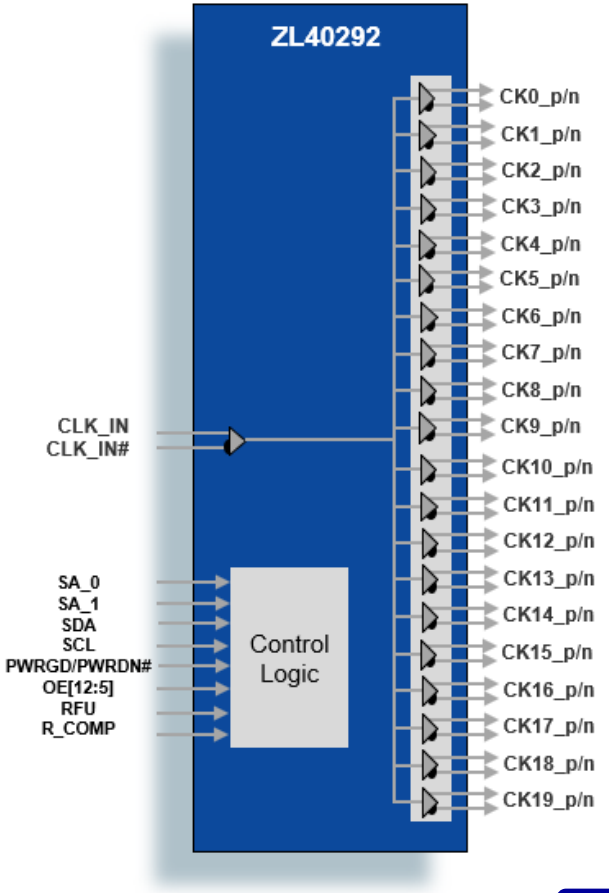
# ZL40292

DB2000Q PCIe 1,2,3,4,5 Buffer with Ultra Low Additive Jitter 1:20 HCSL Output

Online Datasheet

## Features

- Fully Compliant with Intel DB2000Q Specification
- 20 Low-Power Push-Pull HCSL PCIe Outputs
- Ultra-low additive jitter: 20fs maximum
- Supports clock frequencies from 0 to 250MHz
- Supports 3.3V power supplies
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- SMBus Interface
- Eight OE pins
- Embedded series terminations adjusted or 85Ω differential transmission line
- Transparent for Spread-Spectrum Clock





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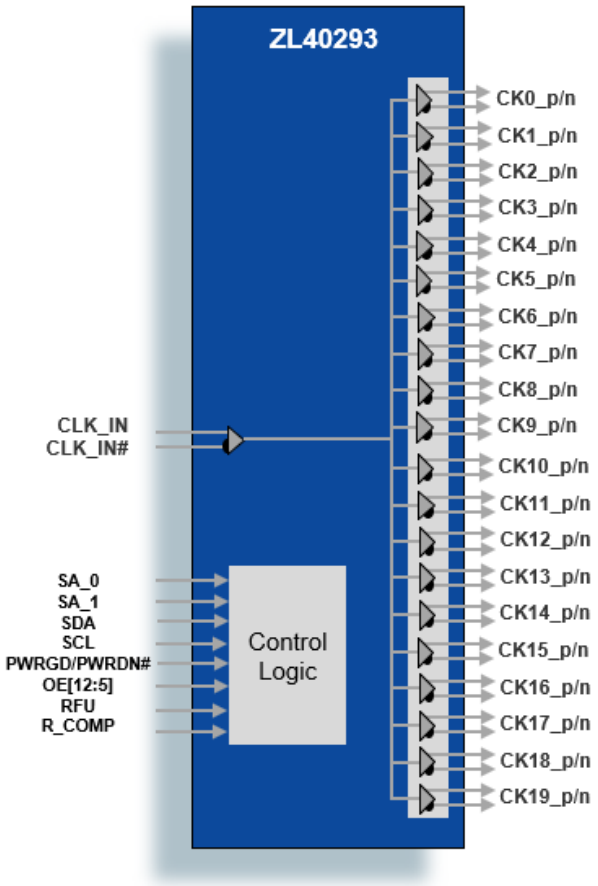
# ZL40293

DB2000Q PCIe 1,2,3,4,5 Buffer with Ultra Low Additive Jitter 1:20 HCSL Output

Online Datasheet

## Features

- Fully Compliant with PCIe 1, 2, 3, 4 and 5
- Specifications
- 20 Low-Power Push-Pull HCSL PCIe Outputs
- Ultra-low additive jitter: 10fs maximum
- Supports clock frequencies from 0 to 250MHz
- Supports 3.3V power supplies
- Embedded Low Drop Out (LDO) Voltage regulator
- provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- SMBus Interface
- Eight OE pins
- Embedded series terminations adjusted for 100Ω
- differential transmission line
- Transparent for Spread-Spectrum Clock





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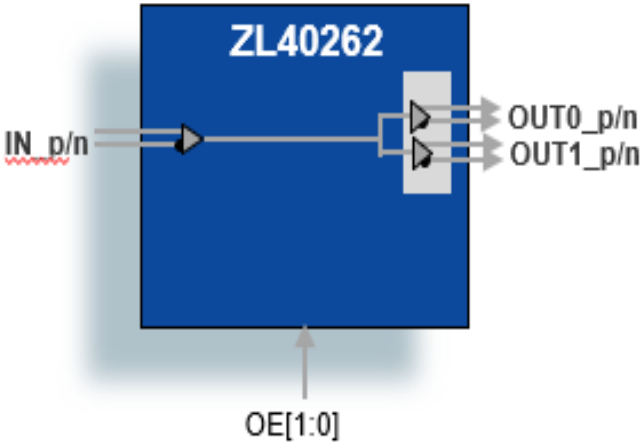
# ZL40262

**ultra-low additive phase noise PCIe Gen 1 to 5 fanout buffer**
**1:2 HCSL Output UPI/QPI**

Online Datasheet

**Features**

- One differential input which accepts any differential format.
- Two differential HCSL outputs
- Ultra-low additive jitter: 32fs (in 12kHz to 20MHz integration band at 400MHz clock frequency)
- Supports clock frequencies from 0 to 400MHz
- Supports 2.5V or 3.3V power supplies for HCSL outputs
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- Individual Output Enable pin for each differential pair
- Transfers Spread-Spectrum without attenuation





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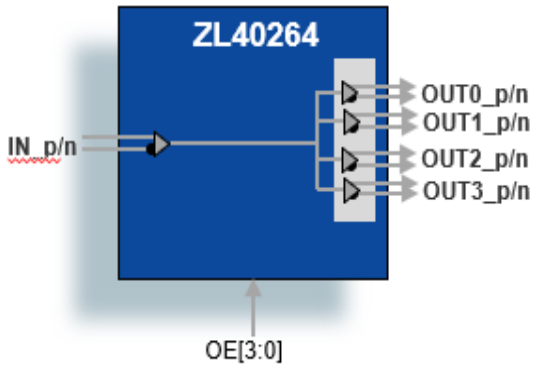
# ZL40264

ultra-low additive phase noise PCIe Gen 1 to 5 fanout buffer
1:4 HCSL Output UPI/QPI

Online Datasheet

## Features

- One differential input which accepts any differential format.
- Four differential HCSL outputs
- Ultra-low additive jitter: 32fs (in 12kHz to 20MHz integration band at 400MHz clock frequency)
- Supports clock frequencies from 0 to 400MHz
- Supports 2.5V or 3.3V power supplies for HCSL outputs
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- Individual Output Enable pin for each differential pair
- Transfers Spread-Spectrum without attenuation





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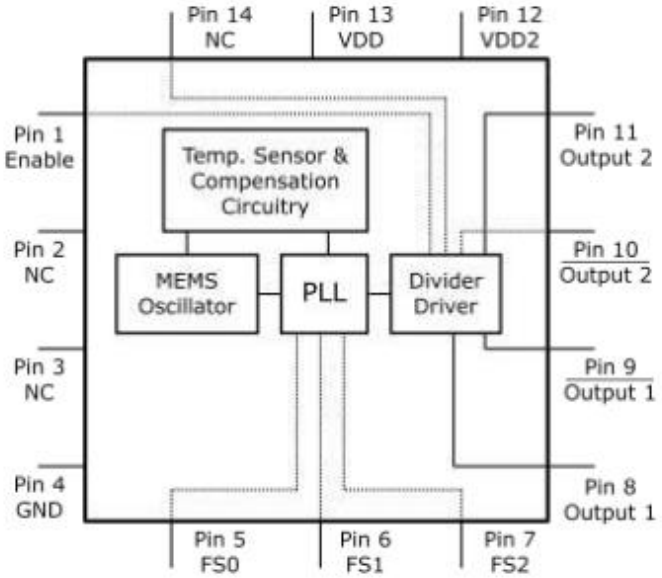
# DSC2XXX

Low-Jitter Configurable Dual-Output Oscillator

Online Datasheet

## Features:

- Wide Freq. Range: 2.3 to 460MHz
- Two configurable independent outputs:
  LVCMOS =1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7 ps (typ. 12k-20M)
- High Stability: ±20, ±25, ±50 ppm
- Wide Temperature Range: -20°C to 105°C
- High Supply Noise Rejection: -50dBc
- Pin-Selectable Configurations:
- 3-bit Output Frequency Combinations
- Miniature Footprint of 3.2mm x 2.5mm, 14-pin
- Excellent Shock & Vibration Immunity
- Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than quartz oscillators
- Supply Range of 2.25V to 3.6V
- DSC20xx supports pin control
- DSC21xx supports I²C interface
- DSC22xx supports SPI interface





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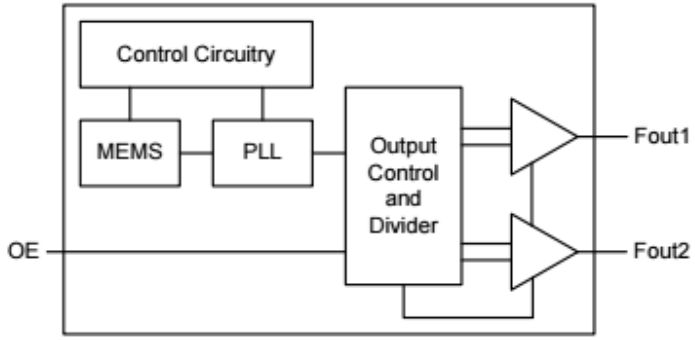
# DSC2311

Crystal-less™ Configurable Two-Output Clock Generator

Online Datasheet

## Features:

- Two Simultaneous CMOS Outputs:
  - Output 1 Range: 2.3 to 170MHz
  - Output 2 Range: 2.3 to 170MHz
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25 ppm; ±50 ppm
- Space Saving 6-pin 2.5 x 2.0mm Package
- Wide Temperature Range:
  - Automotive: -55°C to 125°C
  - Ext. Industrial: -40°C to 105°C
  - Industrial: -40°C to 85°C
  - Ext. Commercial: -20°C to 70°C
- High Supply Noise Rejection: -50dBc
- High Shock & Vibration Immunity:
  - Qualified to MIL-STD-883
- High Reliability:
  - 20x better MTF than crystal-based clock -
    – generator designs
- Supply Range of 2.25V to 3.6V
- OE input to enable/disable output





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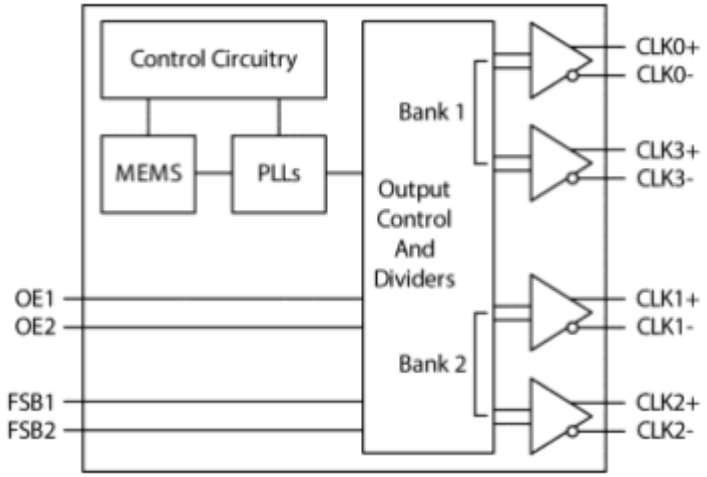
# DSC400

Configurable Four Output, Low Jitter Crystal-less™ Clock Generator

Online Datasheet

## Features:

- Wide frequency range: 2.3MHz to 460MHz
- Four format-configurable outputs: LVCMOS=1, LVPECL=2, LVDS=3, HCSL=4
- Low RMS Phase Jitter: 1.7ps (typ. 12k-20M)
- High Stability: ±25ppm, ±50ppm
- Wide Temperature Range:
  - Industrial: -40°C to +85°C
  - Ext. commercial: -20°C to +70°C
- High Supply Noise Rejection: -50dBc
- 20-pin QFN footprint (5.0mm x 3.2mm)
- Excellent shock and vibration immunity:
  - Qualified to MIL-STD-883
- Available pin-selectable frequency table:
  - 1 pin per bank for two frequency sets
- High Reliability: 20x better MTF than quartz -- based devices
- Wide supply range of 2.25V to 3.6V
-





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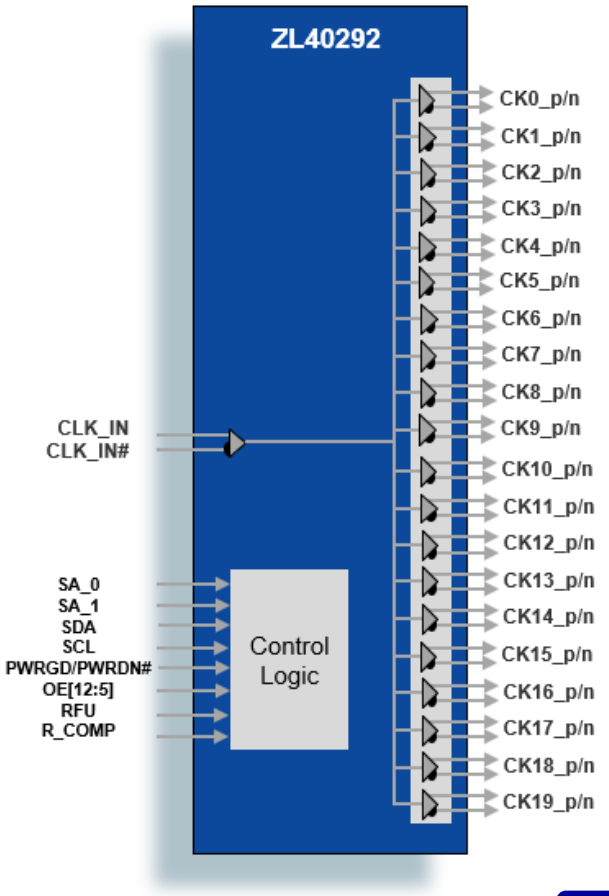
# ZL40292

DB2000Q PCIe 1,2,3,4,5 Buffer with Ultra Low Additive Jitter 1:20 HCSL Output

Online Datasheet

## Features

- Fully Compliant with Intel DB2000Q Specification
- 20 Low-Power Push-Pull HCSL PCIe Outputs
- Ultra-low additive jitter: 20fs maximum
- Supports clock frequencies from 0 to 250MHz
- Supports 3.3V power supplies
- Embedded Low Drop Out (LDO) Voltage regulator provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- SMBus Interface
- Eight OE pins
- Embedded series terminations adjusted or 85Ω differential transmission line
- Transparent for Spread-Spectrum Clock





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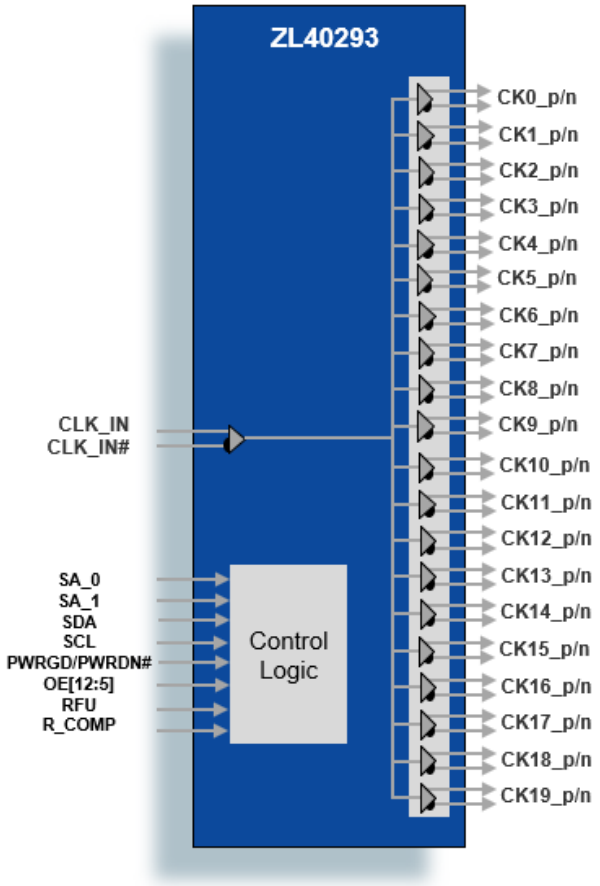
# ZL40293

DB2000Q PCIe 1,2,3,4,5 Buffer with Ultra Low Additive Jitter 1:20 HCSL Output

Online Datasheet

## Features

- Fully Compliant with PCIe 1, 2, 3, 4 and 5
- Specifications
- 20 Low-Power Push-Pull HCSL PCIe Outputs
- Ultra-low additive jitter: 10fs maximum
- Supports clock frequencies from 0 to 250MHz
- Supports 3.3V power supplies
- Embedded Low Drop Out (LDO) Voltage regulator
- provides superior Power Supply Noise Rejection
- Maximum output to output skew of 50ps
- SMBus Interface
- Eight OE pins
- Embedded series terminations adjusted for 100Ω
- differential transmission line
- Transparent for Spread-Spectrum Clock





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# ZL40200

Precision 1:2 LVPECL Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

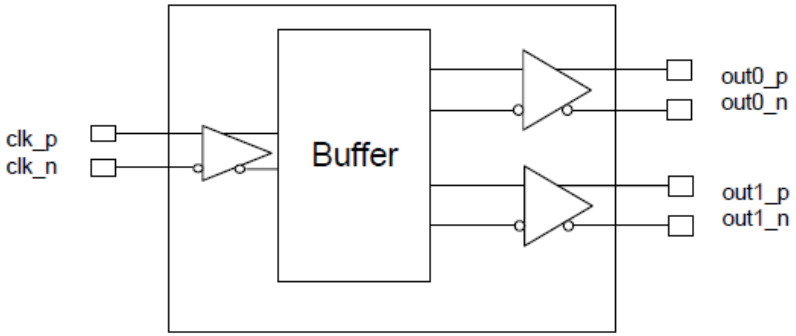
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Two precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 49 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 39 fs RMS





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# ZL40201

Precision 1:2 LVPECL Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

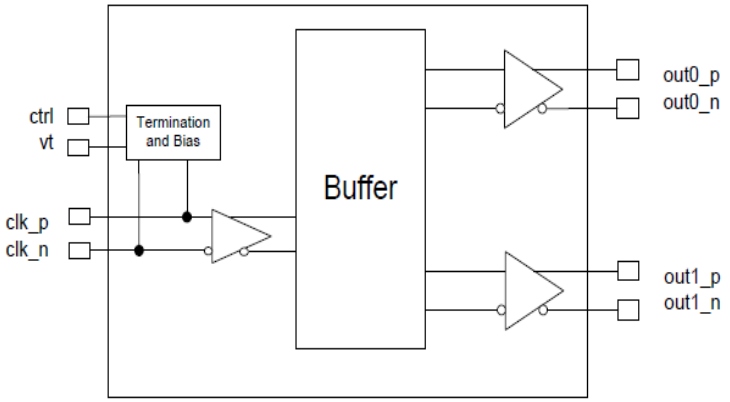
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Two precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 49 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 40 fs RMS





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# ZL40212

Precision 1:2 LVDS Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

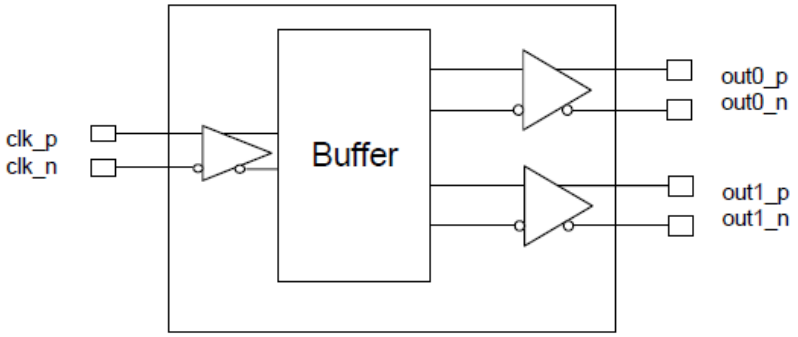
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Two precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 49 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 92 fs RMS





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# ZL40213

Precision 1:2 LVDS Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

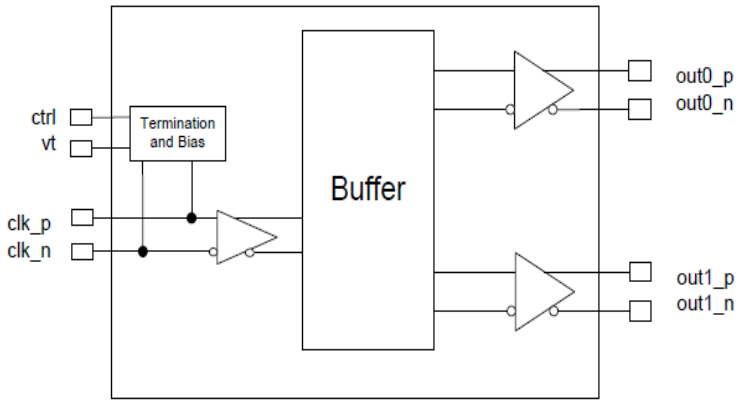
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Two precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 44 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 78 fs RMS





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# ZL40202

Precision 1:4 LVPECL Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

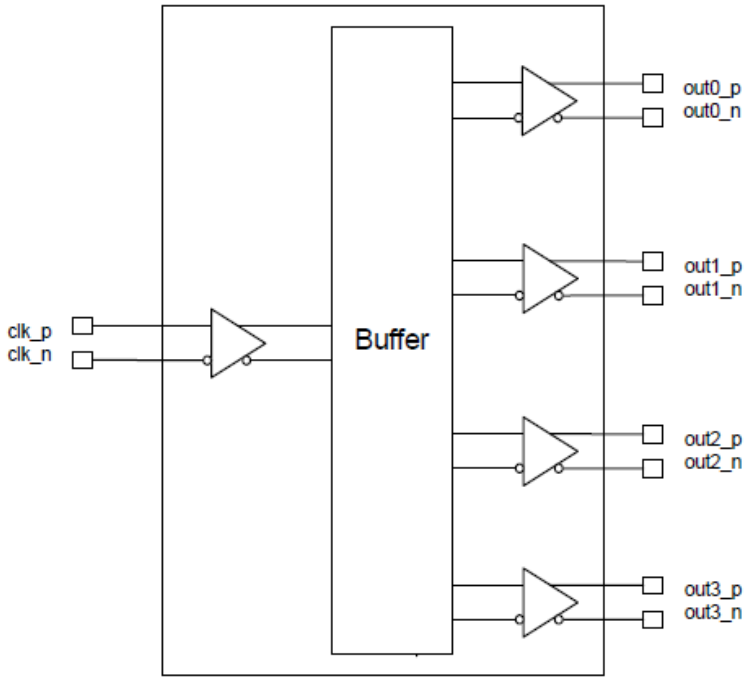
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Four precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 62 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 39 fs RMS





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# ZL40203

Precision 1:4 LVPECL Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

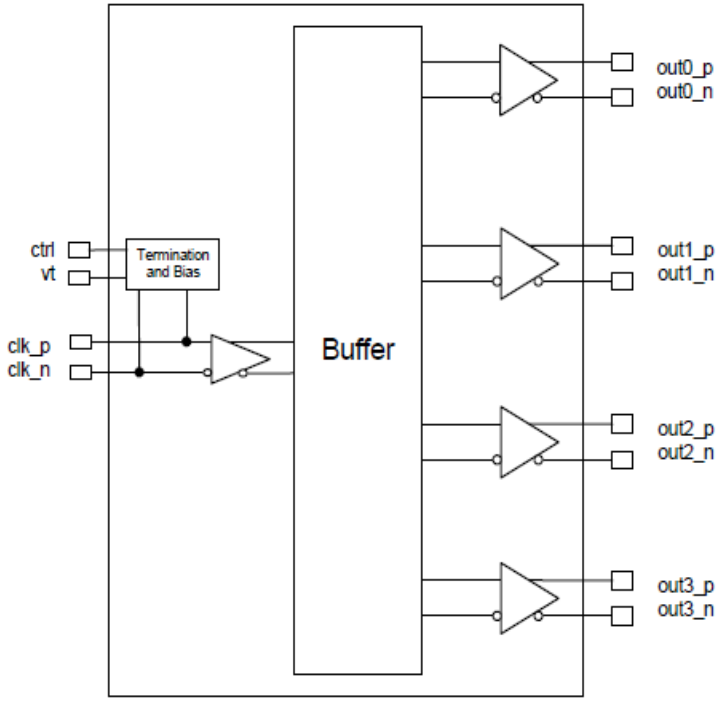
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Four precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 62 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 40 fs RMS





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# ZL40214

Precision 1:4 LVDS Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

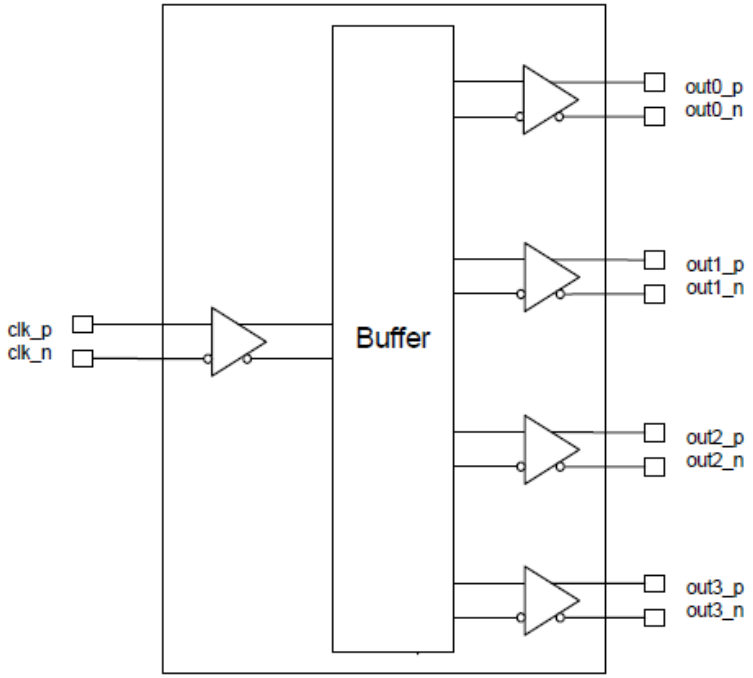
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Four precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 61 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 92 fs RMS





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# ZL40215

Precision 1:4 LVDS Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

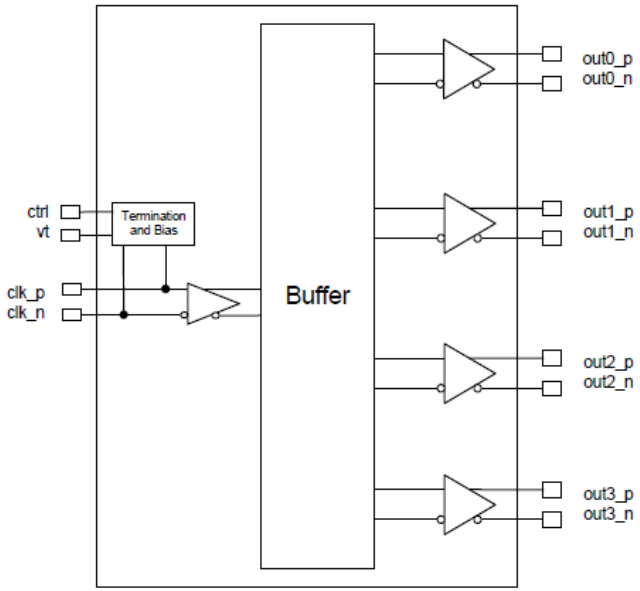
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Four precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 62 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 78 fs RMS





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# ZL40204

Precision 1:6 LVPECL Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

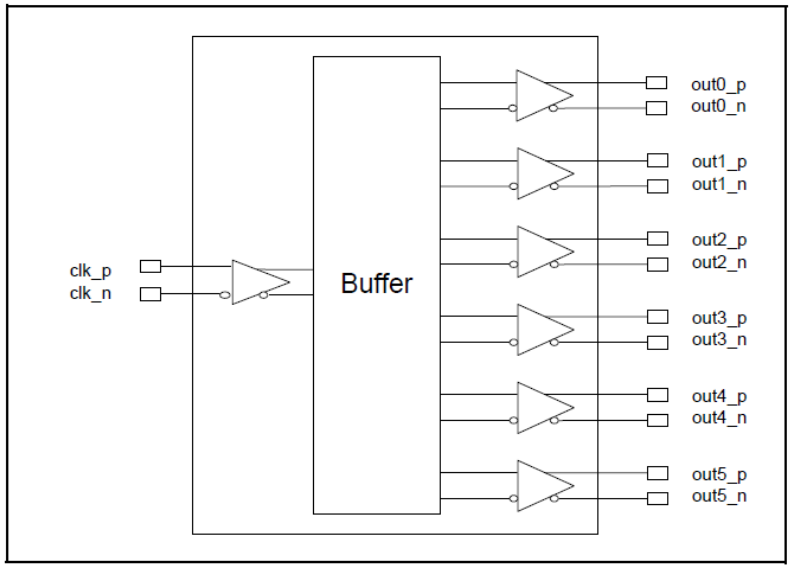
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Six precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 39 fs RMS





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# ZL40205

Precision 1:6 LVPECL Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

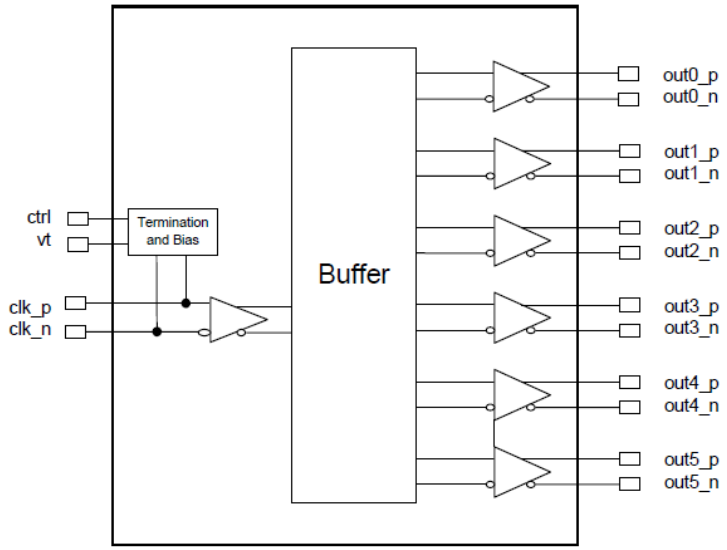
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Six precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 36 fs RMS





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# ZL40216

Precision 1:6 LVDS Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

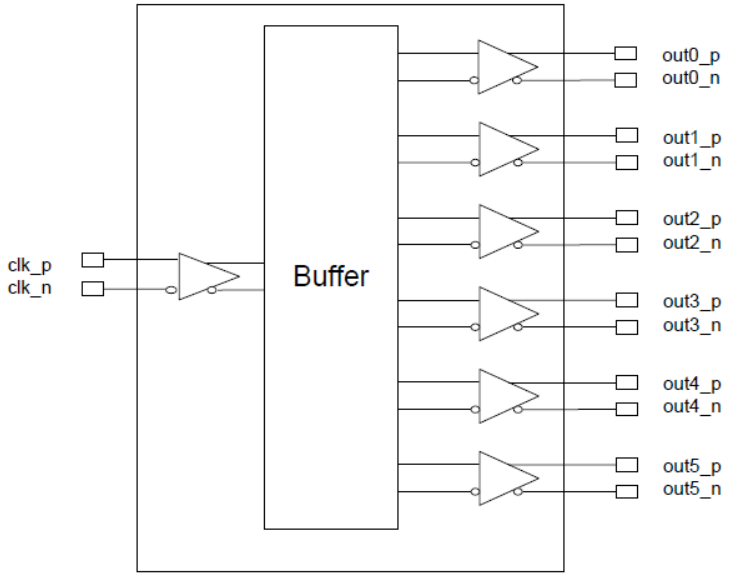
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Six precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 93 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 104 fs RMS





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# ZL40217

Precision 1:6 LVDS Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

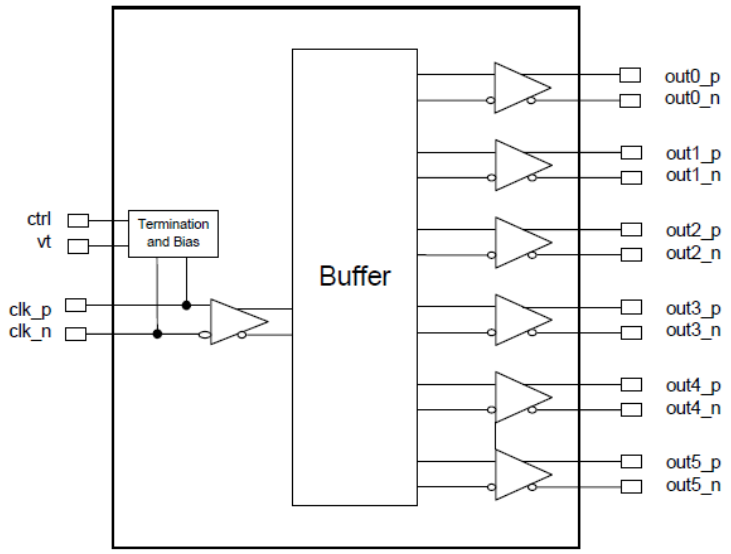
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Six precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 62 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 135 fs RMS





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# ZL40206

Precision 1:8 LVPECL Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

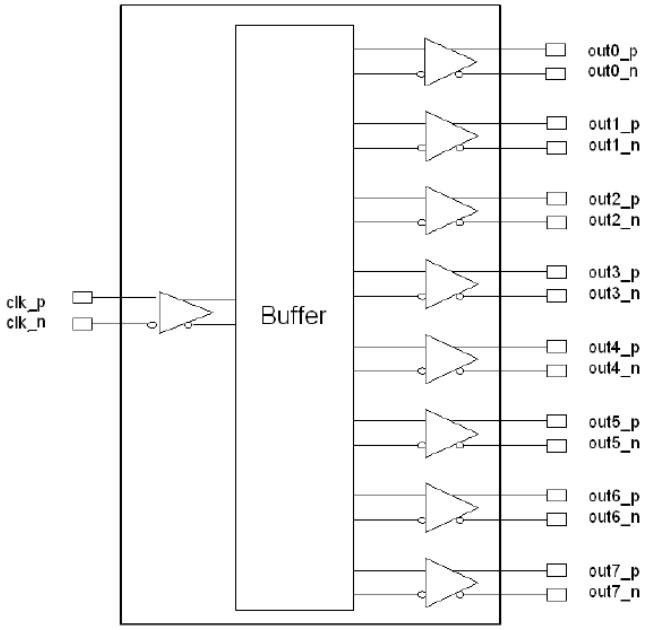
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 122 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 38 fs RMS





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# ZL40207

Precision 1:8 LVPECL Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

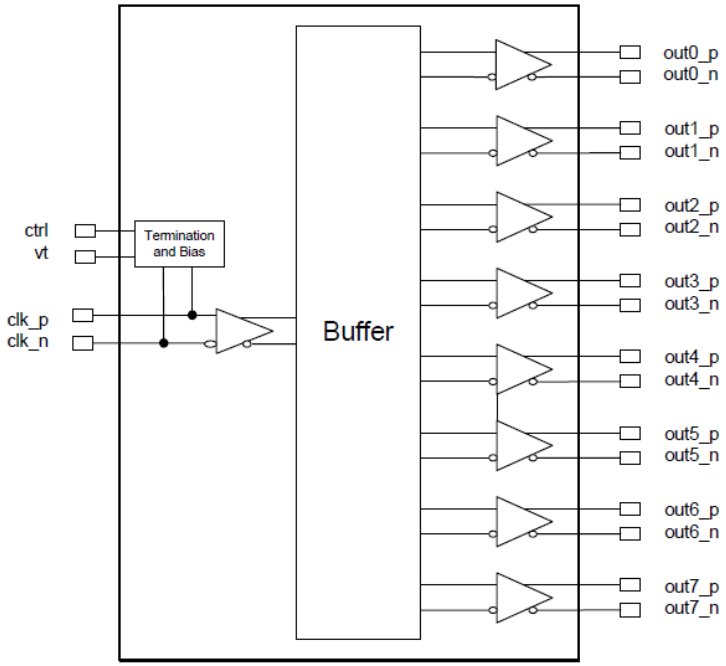
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 36 fs RMS





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# ZL40218

Precision 1:8 LVDS Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

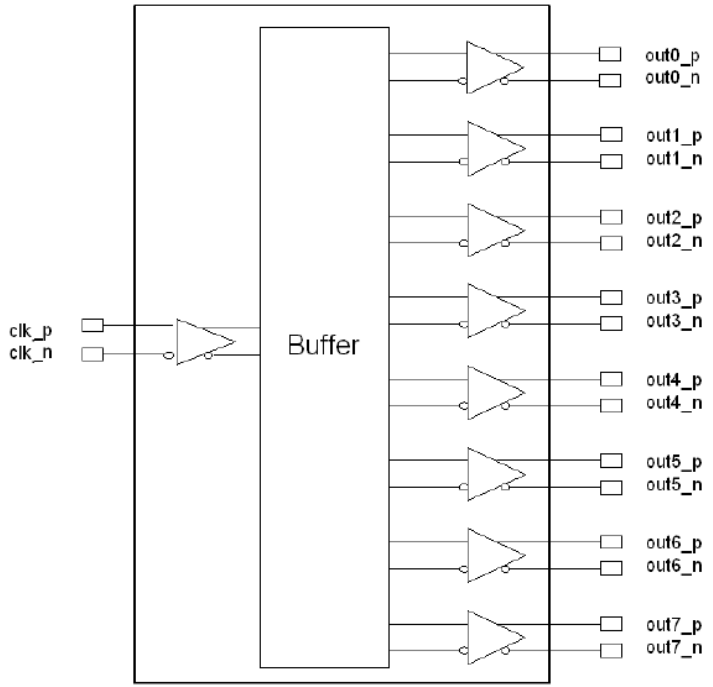
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 106 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 104 fs RMS





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# ZL40219

## Precision 1:8 LVDS Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

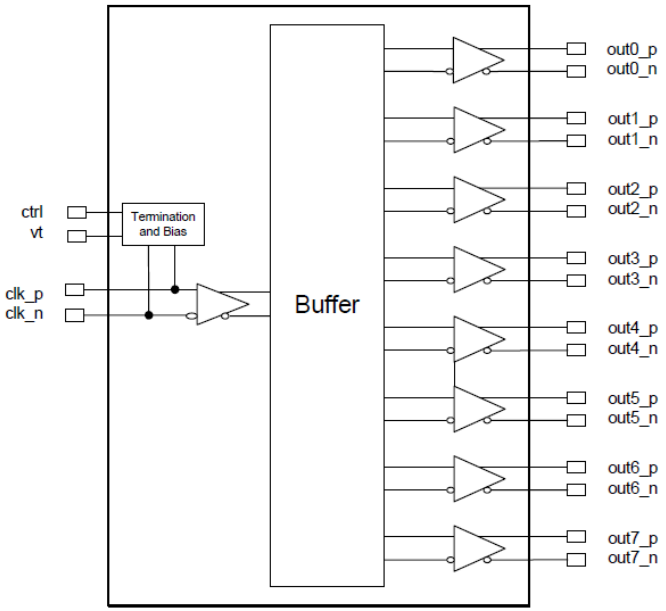
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 62 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 135 fs RMS

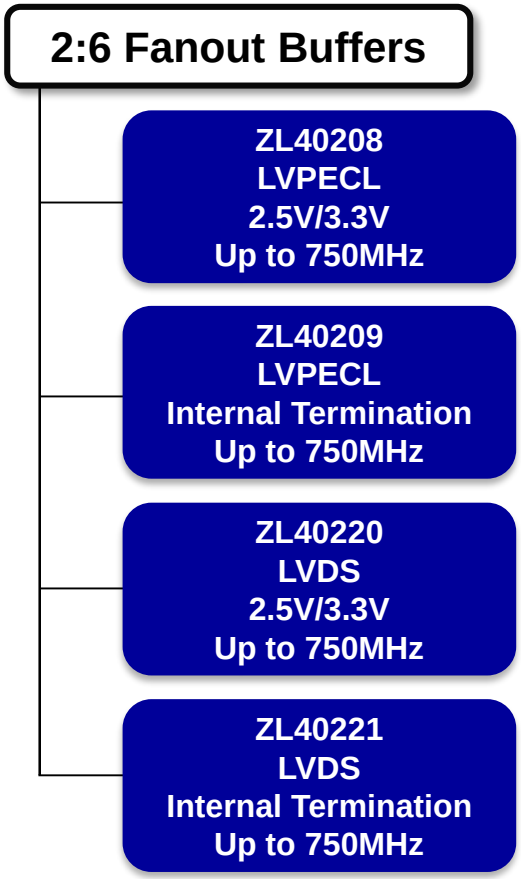




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# 2:6 Fanout Buffers

Product Tree





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# ZL40208

Precision 2:6 LVPECL Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

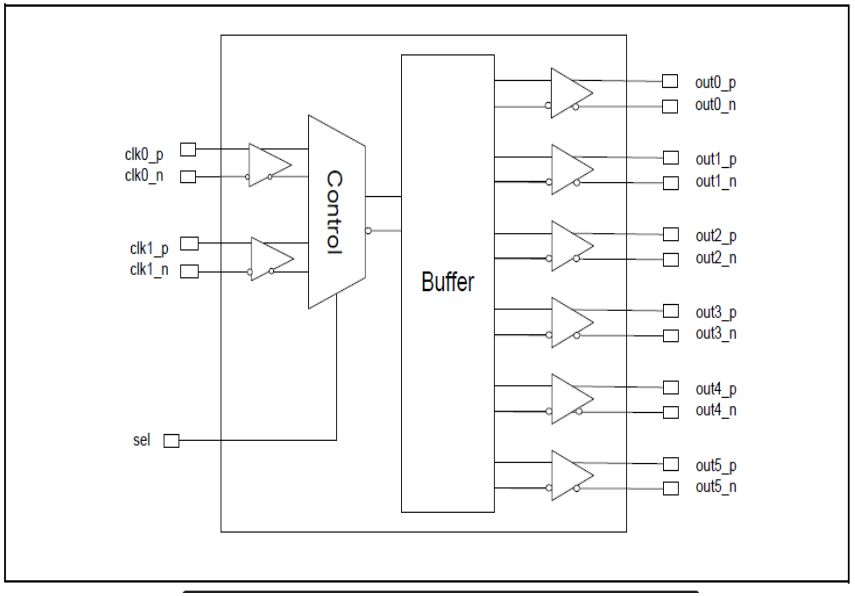
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- Six precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 121 fs RMS





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# ZL40209

Precision 2:6 LVPECL Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

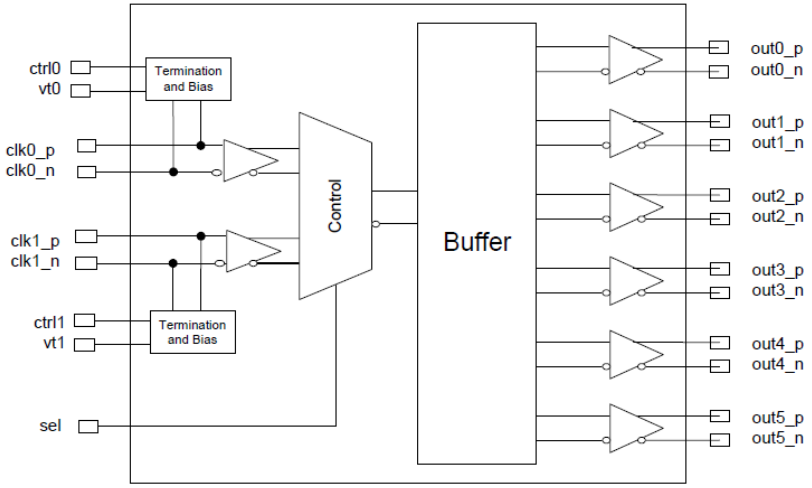
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 106 fs RMS





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# ZL40220

Precision 2:6 LVDS Fanout Buffer

Online Datasheet

## Features

### Inputs/Outputs

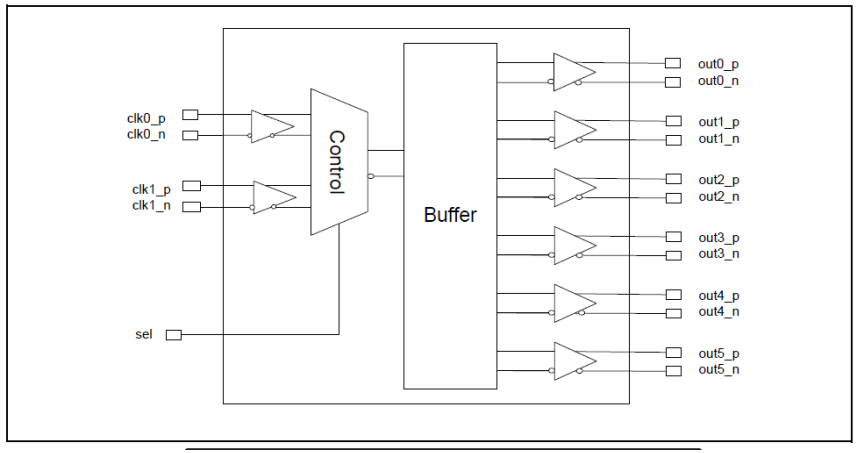
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- Six precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 95 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 194 fs RMS




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# ZL40221

Precision 2:6 LVDS Fanout Buffer with On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

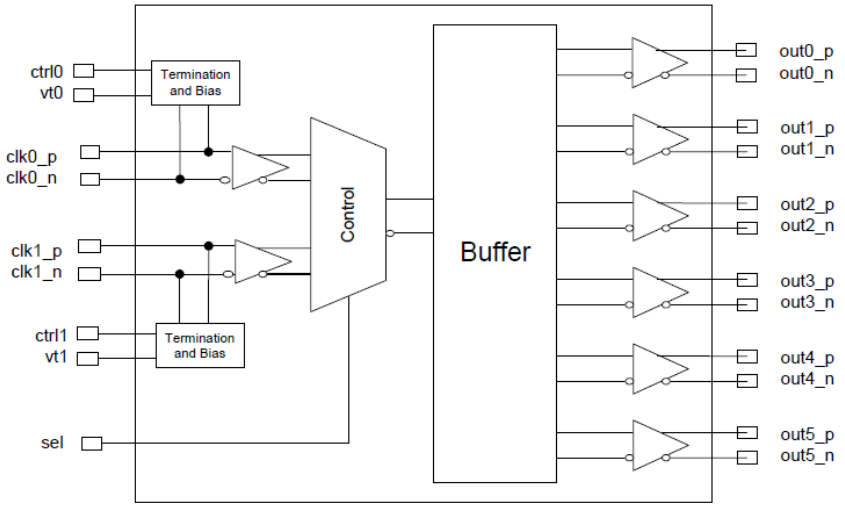
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- On-chip input termination and biasing for AC coupled inputs
- Six precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 97 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 165 fs RMS





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# ZL40222

Precision 2:8 LVDS Fanout Buffer with Glitch-free Input Reference Switching

Online Datasheet

## Features

### Inputs/Outputs

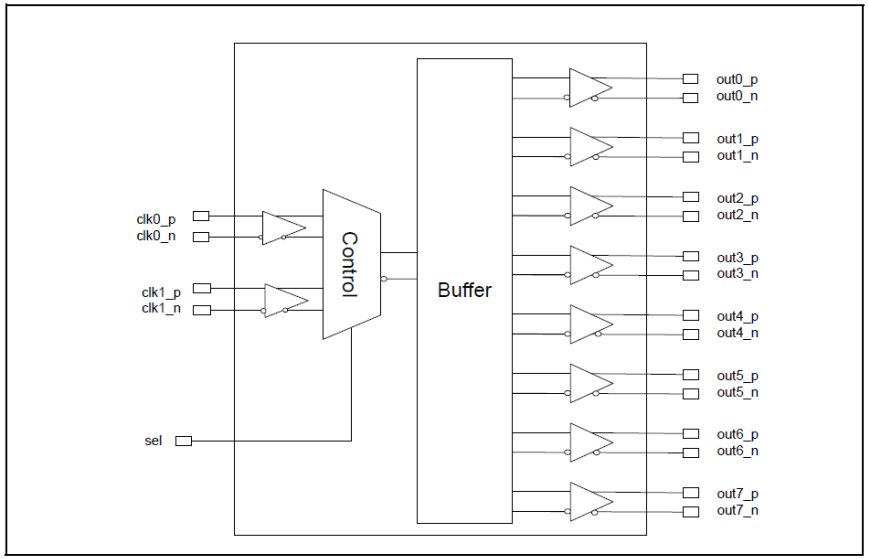
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 95 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 194 fs RMS





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# ZL40225

Precision 2:8 LVPECL Fanout Buffer with Simple Input Reference Switching and On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

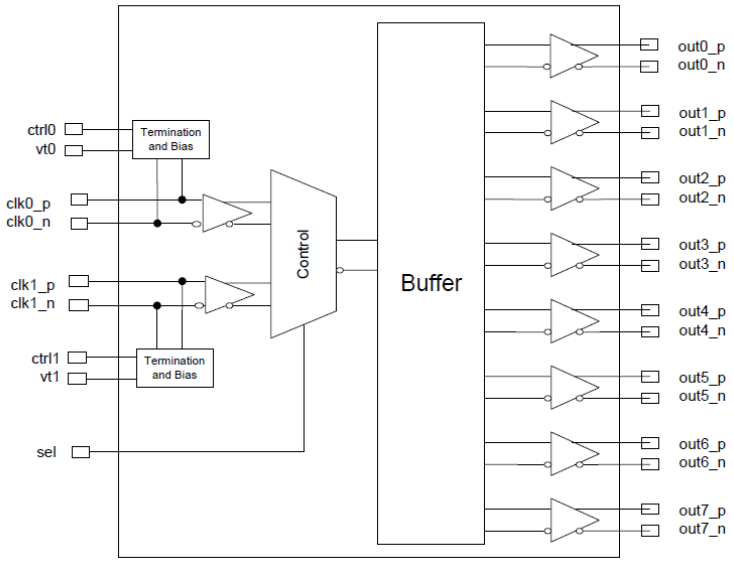
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Simple switching of references
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 106 fs RMS





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# ZL40226

Precision 2:8 LVPECL Fanout Buffer with Simple Input Reference Switching

Online Datasheet

## Features

### Inputs/Outputs

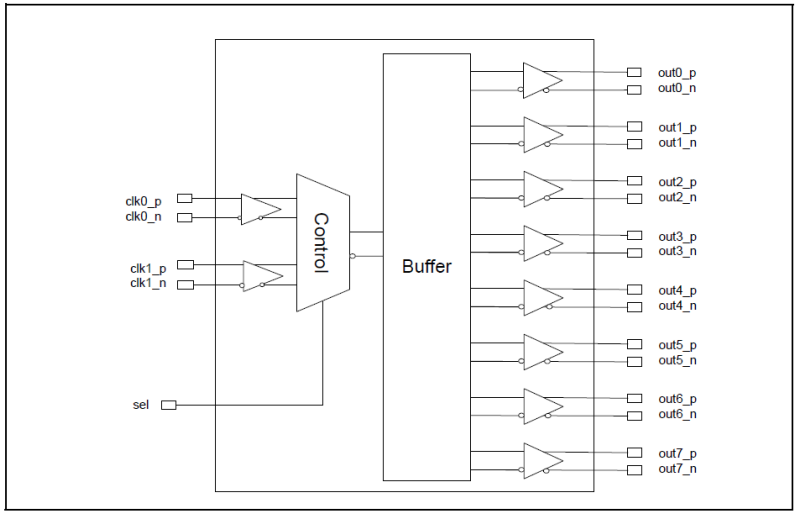
- Accepts differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Simple switching of references
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 95 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 194 fs RMS





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# ZL40227

Precision 2:8 LVPECL Fanout Buffer with Simple Input Reference Switching

Online Datasheet

## Features

### Inputs/Outputs

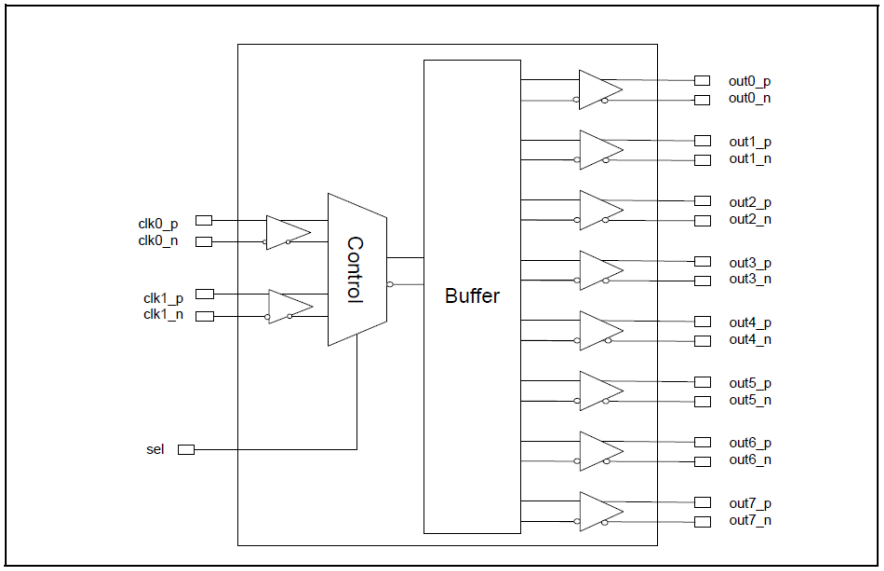
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Simple switching of references
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 97 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 165 fs RMS





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# ZL40210

Precision 2:8 LVPECL Fanout Buffer with Glitch-free Input Reference Switching

Online Datasheet

## Features

### Inputs/Outputs

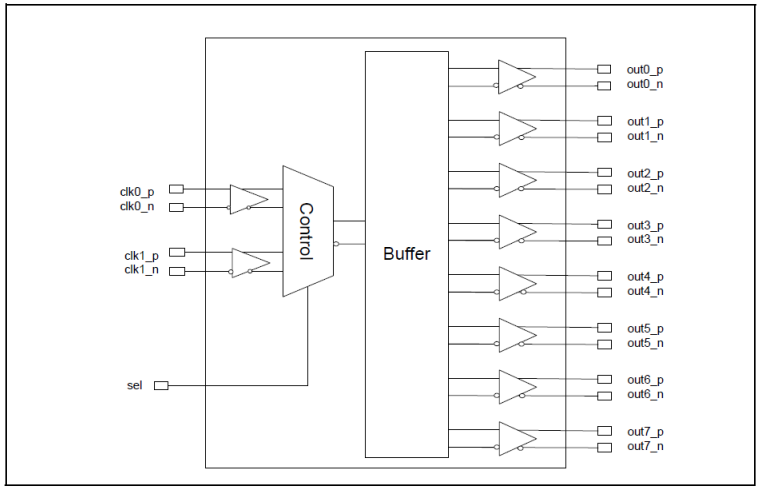
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 121 fs RMS





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# ZL40211

Precision 2:8 LVPECL Fanout Buffer with Glitch-free Input Reference Switching and On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

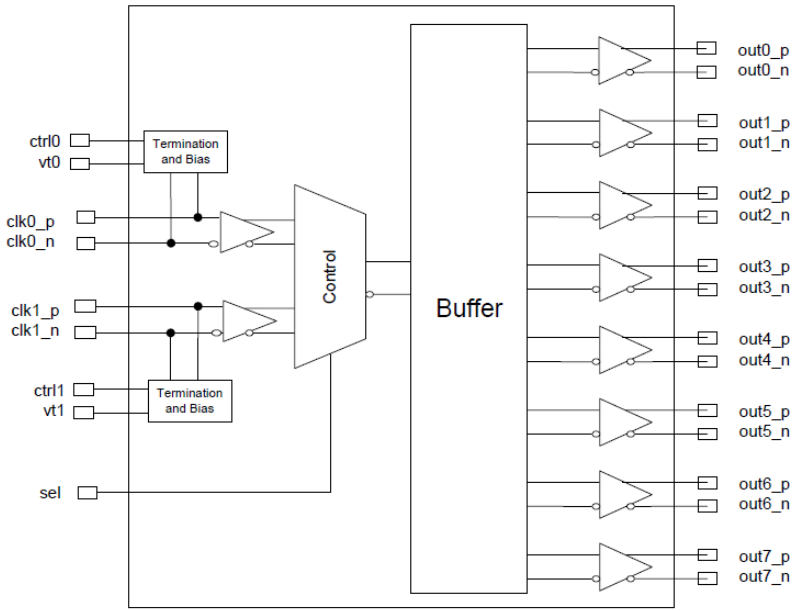
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVPECL outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 110 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 106 fs RMS




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# ZL40223

Precision 2:8 LVDS Fanout Buffer with Glitch-free Input Reference Switching and On-Chip Input Termination

Online Datasheet

## Features

### Inputs/Outputs

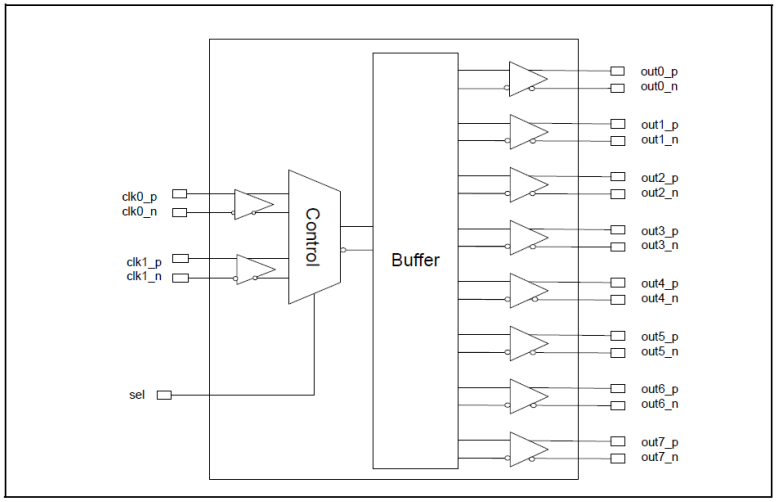
- Accepts two differential or single-ended input
  - LVPECL, LVDS, CML, HCSL, LVCMOS
  - Glitch-free switching of references
- On-chip input termination and biasing for AC coupled inputs
- Eight precision LVDS outputs
- Operating frequency up to 750 MHz

### Power

- Options for 2.5 V or 3.3 V power supply
- Core current consumption of 97 mA
- On-chip Low Drop Out (LDO) Regulator for superior power supply rejection

### Performance

- Ultra low additive jitter of 165 fs RMS





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# ClockWorks Configurator

Online Datasheet

ClockWorks Configurator is an easy-to-use online tool that allows users to create an orderable part number and get samples within few weeks.

Simply go to and start configuring your **oscillators and clock generators**.

**Features & benefits:**

- User-friendly interface helps you choose the right device for your application
- Provides instant datasheets
- Dashboard supports sample and design tracking
- Performs search by part number, design ID or sample ID

**Products supported:**

- Oscillators
- Clock Generators
- Buffers (Coming Soon)




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ClockWorks CONFIGURATOR

TUTORIAL VIDEO

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# TimeFlash 2 Field Programming Kit

Online Datasheet

The TimeFlash 2 programmer allows users to rapidly program Microchip's **field programmable MEMS oscillator** to a custom frequency in seconds, minimizing design time by enabling fast prototyping and testing. Our MEMS oscillators are available in industry standard packages that are drop-in replacements to standard crystal oscillators.

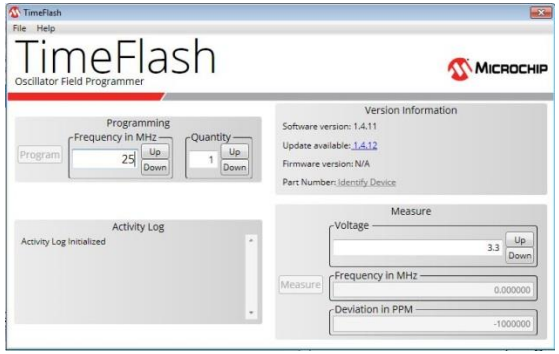
**Products supported:**

- MEMS Oscillators




**Features and Benefits:**

- Custom frequencies in seconds with immediate design verification
- Supports all Microchip MEMS oscillator package sizes
- Supports CMOS, LVPECL, LVDS, and HCSL output types
- Easy to use interface with auto software update
- Measure Current and stability for all oscillators in the market




DEMO VIDEO

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