QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: CENO-04HVTQ875

Date:
June 23, 2025

Qualification of MMT as an additional assembly site for selected AT24C32E, AT24C64D, 24CS32, 24CS64, AT24C32D, 24AA64, 24FC64, 24AA32AF, 24LC64, 24LC32AF, 24LC32A, AT24C64B, 24AA32A, 24AA64F, 24LC64F, 24FC64F, AT24C128C, 24LC128, 24FC128, 24AA128, 24CS128, 24AA256, AT24C256C, 24LC256, 24CS256, 24FC256, AT24CM01, 24FC1025, 24LC1025, 24LC1026, 24AA1025, 24FC1026, 24AA1026, 24CSM01, 24CW640, 24CW320, 24CW160 and 24CW1280 device families, qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and QMI519 as a new die attach material for selected AT24C512C, 24AA512, 24LC512, 24FC512 and 24CS512 device families at MMT assembly site available in 8L SOIC (3.90mm) package.

This is a qualification by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected AT24C32E, AT24C64D, 24CS32, 24CS64, AT24C32D, 24AA64, 24FC64, 24AA32AF, 24LC64, 24LC32AF, 24LC32A, AT24C64B, 24AA32A, 24AA64F, 24LC64F, 24FC64F, AT24C128C, 24LC128, 24FC128, 24AA128, 24CS128, 24AA256, AT24C256C, 24LC256, 24CS256, 24FC256, AT24CM01, 24FC1025, 24LC1025, 24LC1026, 24AA1025, 24FC1026, 24AA1026, 24CSM01, 24CW640, 24CW320, 24CW160 and 24CW1280 device families, qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and QMI519 as a new die attach material for selected AT24C512C, 24AA512, 24LC512, 24FC512 and 24CS512 device families at MMT assembly site available in 8L SOIC (3.90mm) package. This is a qualification by similarity (QBS).
CN	E000258162
QUAL ID	R2500218 Rev.A
MP CODE	66829YB3XQUL
Part No.	24LC512T-E/MCQUAL
Bonding No.	BD-002914 Rev.01
CCB No.	7360 and 8133

Package

Type	8L DFN
Package size	2 x 3 x 0.9 mm

Lead Frame

Paddle size	75 x 67 mils
Material	C194
Surface	Bare Cu
Process	Etched
Lead Lock	Locking Hole
Part Number	10100852
Treatment	Roughened

Material

Epoxy	QMI519
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Sn

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-254201149.000	U08D925143937.900	2503KK1
MMT-254300726.000	U08D925143937.900	2504PYP
MMT-254400020.000	U08D925143937.900	2505Q0J

Result ☒ Pass ☐ Fail ☐ ____________________

8L DFN (2x3x0.9 mm) assembled by MMT pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDEC J-STD-020E	135(0)	0/135	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C,85°C and 125°C System: NEXTEST_PT	JESD22-A113	693(0)	0/693	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			0/693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max			0/693		
	System: Vitronics Soltec MR1243					
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -55°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)		45(0)	0/45	Pass	
	Stress Condition: -55°C to +150°C, 2000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)		45(0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** Vcc=5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)		45(0)	0/45	Pass	
	Stress Condition: +130°C/85%RH, 192 hrs. **Bias Volt:** Vcc=5.0 Volts System: HAST 6000X			231		
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)		45(0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: NEXTEST_PT		231(0)	0/231	Pass	
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: TPS Bake Oven	JESD22-A103		135		45 units / lot
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		135(0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: TPS Bake Oven			135		
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT		135(0)	0/135	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.50 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>12.60 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	

MICROCHIP

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: CENO-04HVTQ875

Date:

January 24, 2022

Qualification of MMT as an additional assembly site for selected AT24C32E, AT24C64D, 24CS32, 24CS64, AT24C32D, 24AA64, 24FC64, 24AA32AF, 24LC64, 24LC32AF, 24LC32A, AT24C64B, 24AA32A, 24AA64F, 24LC64F, 24FC64F, AT24C128C, 24LC128, 24FC128, 24AA128, 24CS128, 24AA256, AT24C256C, 24LC256, 24CS256, 24FC256, AT24CM01, 24FC1025, 24LC1025, 24LC1026, 24AA1025, 24FC1026, 24AA1026, 24CSM01, 24CW640, 24CW320, 24CW160 and 24CW1280 device families, qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and QMI519 as a new die attach material for selected AT24C512C, 24AA512, 24LC512, 24FC512 and 24CS512 device families at MMT assembly site available in 8L SOIC (3.90mm) package. This is a qualification by similarity (QBS).

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected AT24C32E, AT24C64D, 24CS32, 24CS64, AT24C32D, 24AA64, 24FC64, 24AA32AF, 24LC64, 24LC32AF, 24LC32A, AT24C64B, 24AA32A, 24AA64F, 24LC64F, 24FC64F, AT24C128C, 24LC128, 24FC128, 24AA128, 24CS128, 24AA256, AT24C256C, 24LC256, 24CS256, 24FC256, AT24CM01, 24FC1025, 24LC1025, 24LC1026, 24AA1025, 24FC1026, 24AA1026, 24CSM01, 24CW640, 24CW320, 24CW160 and 24CW1280 device families, qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and QMI519 as a new die attach material for selected AT24C512C, 24AA512, 24LC512, 24FC512 and 24CS512 device families at MMT assembly site available in 8L SOIC (3.90mm) package. This is a qualification by similarity (QBS).
CN	ES363816
QUAL ID	R2100979 Rev.A
MP CODE	DE0244C2XB04
Part No.	PIC12F683-E/SN
Bonding No.	BDM-002810 Rev. A
CCB No.	4993 and 8133

Package

Type	8L SOIC
Package size	150 mils

Lead Frame

Paddle size	95 x 130 mils
Material	CDA194
Surface	Bare Cu
Process	Etched
Lead Lock	Yes
Part Number	10100842
Treatment	BOT

Material

Epoxy	3280
Wire	CuPdAu
Mold Compound	G600V
Plating Composition	Matte Sn

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-222603569.000	TMPE221526613.100	2139DU3
MMT-222603739.000	TMPE221526613.100	2139K6G
MMT-222700744.000	TMPE221526613.100	2139K6H

Result ☒ Pass ☐ Fail ☐ ____________________

8L SOIC (150 mils) assembled by MMT pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C, 125°C and -40°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test: +25°C and 125°C System: J750			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH,192 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X			231		
	Electrical Test: + 25°C and 125°C System: J750		231(0)	0/231	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test:** +25°C and 125°C System: J750	JESD22-A103	45(0)	45 0/45	Pass	45 units
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.50 grams) Bond Shear (> 15.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	