

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: MFOL-16LOAA511

Date:
February 27, 2026

Qualification of Microchip Technology Gresham – Fab 4 (GRTM) as a new fabrication location for selected PIC16C55, PIC16C56, and PIC16C71 device families of 57K technology available in various packages.

MICROCHIP

PROCESS QUALIFICATION REPORT

Purpose: Qualification of Microchip Technology Gresham – Fab 4 (GRTM) as a new fabrication location for selected PIC16C55, PIC16C56, and PIC16C71 device families of 57K technology available in various packages.

I. Summary:

In keeping with guidelines established in Microchip CCB 7364.008, Three lots of PIC16C56 were used for qualification testing. This qualification will release the 57016, device family process to production.

II. Device Description:

Device	PIC16C56
Document Revision	A
CCB No.	7364.008

III. Qualification Material:

Test Lot	**Lot 1**	**Lot 2**	**Lot 3**
WAFER LOT	GRSM426022083.300	GRSM426141370.100	GRSM426161664.100
ASSEMBLY LOT	MMT-261601112.000	MMT-262600677.000	MMT-262801064.000
PACKAGE	18L PDIP	18L PDIP	18L PDIP
QUAL TESTS	ELFR/HTOL/HTSL	ELFR/HTOL/HTSL ESD HBM/CDM/LU	ELFR/HTOL/HTSL

IV. Qualification Data:

ELFR

Test Method	AEC-Q100-008
Test Condition	125°C / 48 hours Pre & Post Testing was done at +25°C +85°C +125°C
Sample Size (800 ea. min)	(Fail/Sample Size)
Lot 1	0/804
Lot 2	0/815
Lot 3	0/815

High Temp Operational Life (HTOL)

Test Method	AEC Q100-005
Test Condition	125°C / 1000 hours Pre & Post Testing was done at +25°C -40°C +85°C +125°C
Sample Size (77 ea. min)	(Fail/Sample Size)
Lot 1	0/90
Lot 2	0/92
Lot 3	0/92

High Temp Storage Life (HTSL)

Test Method	JESD22-A103
Test Condition	150°C / 1000 hours Pre & Post Testing was done at +25°C +85°C +125°C
Sample Size (77 ea. min)	(Fail/Sample Size)
Lot 1	0/241
Lot 2	0/246
Lot 3	0/246

ESD-MM/HBM, CDM and Latch-Up

Test	Reference Method	Sample Size	Result
ESD – HBM	AEC-A100-002E/JS-001	12/Lot 2	± 2000 V
ESD – CDM	AEC-Q100-011/JS-002	18/Lot 2	± 750 V
ESD – LU	AEC-Q100-004D/JESD78	12/Lot 2	12 Pass[1]

Note:

[1]ESD-LU: Pass per datasheet DS30453E

[2]Electrical Pre and Post-test = +25°C[2]+85°C[2]+125°C[2]+/- 60mA at MCLR pin and +/-105mA Pulse others

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of Microchip Technology Gresham – Fab 4 (GRTM) as a new fabrication location for selected PIC16C55, PIC16C56, and PIC16C71 device families of 57K technology available in various packages. This is a Q100 Grade 1 qualification.
CN	E000279408
QUAL ID	R2500957 Rev. A
Bonding No.	A-024194 Rev J
MP CODE	570161F2XB20
Part No.	PIC16C56-RC/SO
CCB No.	7413.007 and 7364.008

Lead Frame

Paddle size	160 x 200 mils
Material	CDA194
Surface	Ag
Process	N/A
Lead lock	No
Part number	10101805
Plating composition	Matte Sn

Bond Wire

Wire	Au

Die Attach Material

Epoxy	8390A
Mold compound	G600V

Package

Type	18L SOIC
Package size	.300in

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI261700418.000	GRSM426022083.400	25302VU
MTAI261700499.000	GRSM426022083.400	253031Q
MTAI261700500.000	GRSM426022083.400	253031S

Result [X] Pass [ ] Fail [ ] _____

18L SOIC (.300in) assembled by MTAI 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:** +85°C, 125°C and 25°C System: J750	JESD22-A113	693(0)	0/693	Pass	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 System: Vitronics Soltec MR1243			693		
	Electrical Test: +85°C, 125°C and 25°C System: J750		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: +85°C, 125°C and 25°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>4.00 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
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: +85°C, 125°C and 25°C System: J750		231(0)	0/231	Pass	77 units / lot

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, 500 hrs. System: TPS Bake Oven **Electrical Test:** +85°C, 125°C and 25°C System: J750	JESD22-A103	 45(0)	45 0/45	 Pass	45 units
Solderability Temp 215°C	**Steam Aging:** Temp 93°C, 8hrs System: SAS-3000 **Solder Dipping:** Solder Temp.215°C **Solder material:** SnPb Sn63, Pb37 System: ERSA RA 2200D **Visual Inspection:** External Visual Inspection	J-STD-002	 22(0)	22 22 0/22	 Pass	
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	
Physical Dimensions	Physical Dimension 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) Bonds	0/30 0/30	Pass Pass	