



QUALIFICATION REPORT SUMMARY

PCN#: ALAN-17NIQW636

**Date:
February 25, 2026**

Qualification of Microchip Technology Colorado – Fab 5 (MCSO) as a new fabrication location for TC8020K6-G-M937, TC8220K6-G, TC8020K6-G, HV7360GA-G, and HV7361GA-G catalog part numbers (CPN) of 6WK technology available in various package.

PROCESS QUALIFICATION

Purpose: Qualification of Microchip Technology Colorado – Fab 5 (MCSO) as a new fabrication location for TC8020K6-G-M937, TC8220K6-G, TC8020K6-G, HV7360GA-G, and HV7361GA-G catalog part numbers (CPN) of 6WK technology available in various package.

I. Summary:

In keeping with guidelines established in Microchip CCB 7364.015, three lots of TC8020K6-G were used for qualification testing. This qualification will release the 39006, device family process to production as per guidelines established in Microchip specification QCI-39000, "Worldwide Quality Conformance Requirements.

II. Device Description:

Device	TC8020K6-G
Document Revision	A
CCB No.	7364.015

III. Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3
WAFER LOT	MCSO525517738.200	MCSO525447011.700	MCSO525447011.000 MCSO526108916.000
ASSEMBLY LOT	NSEB262900048.000	NSEB262000189.000	NSEB262000189.000
PACKAGE	56 VQFN	56 VQFN	56 VQFN
QUAL TESTS	HTRB/HTGB	HTRB/HTGB	ESD HBM

IV. Qualification Data:

High Temp Reverse Bias (HTRB)

Test Method	MIL-STD-750-1 Method M1042.1 Condition A
Test Condition	150°C / 1000 hours Pre & Post Testing was done at +25°C
Sample Size (77 ea. min)	(Fail/Sample Size)
Lot 1	0/87
Lot 2	0/88
Result	Passed

High Temp Gate Bias (HTGB)

Test Method	MIL-STD-750-1 Method M1042.1 Condition B
Test Condition	150°C / 1000 hours Pre & Post Testing was done at +25°C
Sample Size (77 ea. min)	(Fail/Sample Size)
Lot 1	0/87
Lot 2	0/87
Result	Passed

ESD-HBM

Test Method/Condition	AEC-Q100-002 Pre & Post Testing was done at +25°
Test Material	Lot 3
DN wrt DP	+/- 1500 V
Gate wrt Drain/Source	+/- 250 V
Drain wrt Gate/Source	+/- 1500 V
Source wrt Gate/Drain	+/- 1500 V
Result	Passed



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of Microchip Technology Colorado – Fab 5 (MCSO) as a new fabrication location for TC8020K6-G-M937, TC8220K6-G, TC8020K6-G, HV7360GA-G, and HV7361GA-G catalog part numbers (CPN) of 6WK technology available in various package will qualify by similarity (QBS).
CN	E000282451
QUAL ID	R2501404 rev. A
Bonding No.	A-057241 Rev.A
MP CODE	3900695FXA00
Part No.	TC8020K6-G
CCB No.	7428.006 and 7364.015
<u>Lead Frame</u>	
Paddle size	268 x 268
Material	A194
Surface	NiPdAu
Process	Etched
Lead lock	Yes
Part number	FR0211
Plating composition	NiPdAu
<u>Bond Wire</u>	
Wire	Au wire
<u>Die Attach Material</u>	
Epoxy	8006NS
<u>Mold Compound</u>	
Mold compound	G770HCD
<u>Package</u>	
Type	56L VQFN
Package size	8 x 8 x 1.0 mm



MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB262100001.000	MCSO525447011.800	2534S8U
NSEB262100002.000	MCSO525447011.800	2534SA7
NSEB262900050.000	MCSO525517738.300	2542BQM

Result ☒ Pass ☐ Fail ☐ _____

56L VQFN (8x8x1.0 mm) assembled by NSEB pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 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 3)	Electrical Test: +25°C System: ETS300_HV Bake 150°C, 24 hrs. System: CHINEE 30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243	JESD22-A113 JIP/ IPC/JEDEC J-STD-020E	693(0)	0/693		Good Devices
	Electrical Test: +25°C System: ETS300_HV		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: -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H Electrical Test: +25°C System: ETS300_HV Bond Strength: Wire Pull (>6.00 grams)	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
			15(0)	0/15	Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25°C System: ETS300_HV	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
			231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 20 Volts System: HAST 6000X Electrical Test: +25°C System: ETS300_HV	JESD22-A110	231(0)	0/231	Pass	Parts had been pre-conditioned at 260°C 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, 504 hrs. System: TPS Bake Oven	JESD22- A103		0/45		45 units
	Electrical Test: +25°C System: ETS300_HV		45(0)	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>6.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>35.00 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass	