QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: DSNO-08OVTT016

Date:
February 21, 2025

Qualification of CuPdAu as a new wire material and 8006NS as a new die attach material for selected 24AA014, 24AA025xxx, 24C01C, 24LC014, 24LC025, 24VL014, 24VL025, 25AA010A, 25AA02xx, 25AA040A, 25LC010A, 25LC020A, 25LC040A, 34AA02, 34LC02, 34VL02, MTCH101 and PIC10F2xx device families available in 6L SOT-23 package at MTAI assembly site.
The qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP4014, MCP4024, MCP6421, MCP6471, MCP6481, MCP6491, MCP6V11xx, MCP6V16xx, MCP6V31xx, MCP6V36xx, MCP6V61xx, MCP6V66xx, MCP6V71xx, MCP6V76xx, MCP6V81xx, MCP6V86xx, MCP6V91xx, MCP6V96xx, MCP73811, MCP73812, MCP73831, MCP73832, MCP9501, MCP9502, MCP9503, MCP9504, MCP9509, MCP9800, MCP9802 and MIC333 device families in 5L SOT-23 package at MTAI assembly site will qualify by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of CuPdAu as a new wire material and 8006NS as a new die attach material for selected 24AA014, 24AA025xxx, 24C01C, 24LC014, 24LC025, 24VL014, 24VL025, 25AA010A, 25AA02xx, 25AA040A, 25LC010A, 25LC020A, 25LC040A, 34AA02, 34LC02, 34VL02, MTCH101 and PIC10F2xx device families available in 6L SOT-23 package at MTAI assembly site. The qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for selected MCP4014, MCP4024, MCP6421, MCP6471, MCP6481, MCP6491, MCP6V11xx, MCP6V16xx, MCP6V31xx, MCP6V36xx, MCP6V61xx, MCP6V66xx, MCP6V71xx, MCP6V76xx, MCP6V81xx, MCP6V86xx, MCP6V91xx, MCP6V96xx, MCP73811, MCP73812, MCP73831, MCP73832, MCP9501, MCP9502, MCP9503, MCP9504, MCP9509, MCP9800, MCP9802 and MIC333 device families in 5L SOT-23 package at MTAI assembly site will qualify by similarity (QBS).
CN	E000252902
QUAL ID	R2500020
MP CODE	DECA14C8XAXF
Part No.	PIC10F220-E/OT
Bonding No.	BD-002756 Rev. 01
CCB No.	7291 and 7291.001

Package

Type	6L SOT-23

Lead Frame

Paddle size	72 x 41 mils
Material	A194
Surface	Ag single ring Plated
Process	Stamped
Lead Lock	No
Part Number	10100607
Treatment	BOT

Material

Epoxy	8006NS
Wire	CuPdAu wire
Mold Compound	G600V
Plating Composition	Matte Sn

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI253700623.000	TMPE224189773.420	2450VV1
MTAI253700685.000	TMPE224189773.420	2450W1S
MTAI253800046.000	TMPE224189773.420	2451W2J

Result ☒ Pass Fail ____________________

6L SOT-23 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:** +25°C and 125°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: +25°C and 125°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:** -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
	Bond Strength: Wire Pull (>2.50 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:** 5.5 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

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		135		45 units / lot
	Electrical Test: +25°C and 125°C System: J750		135(0)	0/135	Pass	
Bond Strength	Wire Pull (>2.50 grams)	Mil. Std. 883-2011	30(0)	0/30	Pass	
Data Assembly	Bond Shear (>15.00 grams)	CDF-AEC-Q100-001	30(0) Bonds	0/30	Pass	