QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: DSNO-08OVTT016

Date:
September 12, 2024

Qualification of palladium coated copper with gold flash (CuPdAu) as an additional bond wire material for selected ATTINY16x, ATTINY204, ATTINY214, ATTINY322, ATTINY4x, ATTINY8x, ABR16EB14, PIC16F131, PIC16F152, PIC16F171, PIC16F180 and PIC16F181 device families available in 14L SOIC (.150in) 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).

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) as an additional bond wire material for selected ATTINY16x, ATTINY204, ATTINY214, ATTINY322, ATTINY4x, ATTINY8x, ABR16EB14, PIC16F131, PIC16F152, PIC16F171, PIC16F180 and PIC16F181 device families available in 14L SOIC (.150in) 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	E000232744
QUAL ID	R2400804 Rev. A
MP CODE	59B0G4D3XFB2
Part No.	PIC16F18126-E/SL
Bonding No.	BD-001006 Rev. 01
CCB No.:	7041 and 7291.001
Package	
Type	14L SOIC
Package size	150 mils
Lead Frame	
Paddle size	104 x 150 mils
Material	A194
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10101413
Treatment	Yes
Material	
Epoxy	8390A
Wire	CuPdAu wire
Mold Compound	G600V
Plating Composition	Matte Sn

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assemly Lot No.	Wafer Lot No.	Date Code
MTAI251201431.000	GRSM423353547.000	2425HAY
MTAI251201468.000	GRSM423353547.000	2425HEC
MTAI251201470.000	GRSM423353547.000	2425HEE

Result [X] Pass [ ] Fail [ ] _____

14L SOIC (150 mils) 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, 85°C and 125°C System: J750	JESD22-A113	693(0)	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 System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C, 85°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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>3.00 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 85°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: CHINEE, TPS Bake Oven **Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22-A103	 135(0)	0/135 0/135	 Pass	45 units