QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: NTDO-07ARFY910

Date:
May 22, 2025

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire as new wire material for selected dsPIC33FJ6xx, PIC18F96J6xx, PIC18F97J6xx, PIC24FJ64Gxx, PIC24FJ128xx, PIC24FJ192xx, PIC24FJ256xx, PIC24FJ96Gxx, dsPIC33FJ2xx, PIC24HJ64Gxx, dsPIC33FJ1xx, PIC24HJ128xx, PIC24HJ256xx and dsPIC33FJ3xx device families available in 64L and 100L TQFP (14x14x1 mm) package.

MICROCHIP
PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire as new wire material for selected dsPIC33FJ6xx, PIC18F96J6xx, PIC18F97J6xx, PIC24FJ64Gxx, PIC24FJ128xx, PIC24FJ192xx, PIC24FJ256xx, PIC24FJ96Gxx, dsPIC33FJ2xx, PIC24HJ64Gxx, dsPIC33FJ1xx, PIC24HJ128xx, PIC24HJ256xx and dsPIC33FJ3xx device families available in 64L and 100L TQFP (14x14x1 mm) package.
CN	E000260959
QUAL ID	R2500279 Rev.A
MP CODE	YGAG17E5XBEB
Part No.	DSPIC33FJ128GP310-I/PF
Bonding No.	BD-001575 Rev.01
CCB No.	6443

Package

Type	100L TQFP
Package size	14 x 14 x 1.00 mm

Lead Frame

Paddle size	280 x 280 mils
Material	C7025
Surface	Cu-RT
Process	Stamp
Lead Lock	No
Part Number	10110005
Treatment	BOT

Material

Epoxy	3280
Wire	CuPdAu
Mold Compound	G700HA
Plating Composition	Matte Sn

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-254600329.000	TC11925092697.610	25072PB
MMT-254600330.000	TC11925092697.620	25072PM
MMT-254700022.000	TC11925092697.600	25082PE

Result [X] Pass [ ] Fail [ ] ____________________

100L TQFP (14x14x1.00 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C and 85°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 85°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: +85°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)		15(0)	0/15	Pass	
			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:** 2.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 85°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 **Electrical Test:** +25°C and 85°C System: J750	JESD22-A103	 135(0)	135 0/135	 Pass	45 units / lot
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>2.50 grams) Bond Shear (>10.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) Bonds	0/30 0/30	Pass Pass	