



**MICROCHIP**

**QUALIFICATION REPORT  
RELIABILITY LABORATORY**

**PCN #: JAON-18SYIF727**

**Date:  
March 24, 2015**

**Qualification of palladium coated copper with gold flash (PdCuAu) bond wire in selected products of the 200K wafer technology available in 80L TQFP package at MTAI assembly site. The 44L and 64L TQFP package will qualify by similarity.**

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## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	Qualification of palladium coated copper with gold flash (PdCuAu) bond wire in selected products of the 200K wafer technology available in 80L TQFP package at MTAI assembly site. The 44L and 64L TQFP package will qualify by similarity.
<b>CN</b>	BC150602
<b>QUAL ID</b>	Q15012
<b>MP CODE</b>	LEAU14X2XAXF
<b>Part No.</b>	PIC18F87K90-E/PT
<b>Bonding No.</b>	A-040805 Rev. C
<b>CCB No.</b>	1533
<b><u>Package</u></b>	
<b>Type</b>	80L TQFP
<b>Package size</b>	12x12x1 mm
<b>Die thickness</b>	11 mils
<b>Die size</b>	163.60 x159.20 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	280 x280 mils
<b>Material</b>	C7025
<b>Surface</b>	Bare copper paddle with BOT
<b>Process</b>	Stamp
<b>Lead Lock</b>	No
<b>Part Number</b>	10108001
<b>Treatment</b>	Roughened
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	3280
<b>Wire</b>	PdCuAu wire
<b>Mold Compound</b>	G700HA
<b>Plating Composition</b>	Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI154403455.000	GRSM415282125.100	1505WE6
MTAI154403456.000	GRSM415282125.200	1505WE7
MTAI154403457.000	GRSM415282125.300	1505WE8

**Result**       Pass       Fail       \_\_\_\_\_

80L TQFP (12x12x1 mm) 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-020D standard.

**Prepared By:**  **Date:** March 24, 2015 (Sr. Reliability Engineer)

(Mr. Udom Suksansakul)

**Approved By:**  **Date:** March 24, 2015 (Reliability Manager)

(Mr. Somnuek Thongprasert)

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b>Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)</b>	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243  ( IPC/JEDEC J-STD-020D)	IPC/JEDEC C J-STD-020D	135	0/135	Pass	

<b><u>Precondition</u></b> <b><u>Prior Perform</u></b> <b><u>Reliability Tests</u></b> <b>(At MSL Level 1)</b>	<b>Electrical Test</b> :+25°C,85°C and 125°C System:J750	JESD22- A113	693(0)	693	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			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		
	<b>Electrical Test</b> :+25°C and 85°C (With 1 Lot 125°C on MTAI154403455.000) System:J750			0/693		

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Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22- A104		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +85°C (With 1 Lot 125°C on MTA1154403455.000) System:J750		231(0)	0/231	Pass	77 units / lot
	<b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C System:J750		231(0)	0/231	Pass	77 units / lot

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Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 2.5 Volts System: HAST 6000X  <b>Electrical Test:</b> +25°C and 85°C (With 1 Lot 125°C on MTA154403455.000) System:J750	JESD22-A110	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB  <b>Electrical Test:</b> +25°C,85°C and 125°C System:J750	JESD22-A103	45(0)	45 0/45	Pass	
<b>Wire sweep</b>	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45		
<b>Cross section</b>	Cross section Inspection 3 units / lot	-	3(0) Wires	0/3		
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	