



**MICROCHIP**

**QUALIFICATION REPORT**  
RELIABILITY LABORATORY

**PCN #: JAON-13OEWI224**

**Date**  
**February 26, 2016**

**Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 40K, 57K, 90K, 120K, 150K, 160K and 200K wafer technologies available in 40L PDIP (600 mils) package at MMT assembly site. The 28L PDIP (600 mils) package will qualify by similarity at MMT assembly site.**

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## **MICROCHIP**

### **PACKAGE QUALIFICATION REPORT**

<b>Purpose</b>	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 40K, 57K, 90K, 120K, 150K, 160K and 200K wafer technologies available in 40L PDIP (600 mils) package at MMT assembly site. The 28L PDIP (600 mils) package will qualify by similarity at MMT assembly site.
<b>CN</b>	BC152380
<b>QUAL ID</b>	Q16015
<b>MP CODE</b>	LEAY14S2XB04
<b>Part No.</b>	PIC16F1939-E/P
<b>Bonding No.</b>	BDM-000969 Rev. A
<b>CCB No.</b>	1839
<b><u>Package</u></b>	
<b>Type</b>	40L PDIP
<b>Package size</b>	600 mils
<b>Die thickness</b>	15 mils
<b>Die size</b>	101.9 x 101.7 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	200 x 200 mils
<b>Material</b>	CDA194
<b>Surface</b>	Ag Spot
<b>Process</b>	Stamped
<b>Lead Lock</b>	Yes
<b>Part Number</b>	10104001
<b>Treatment</b>	None
<b><u>Die attach material</u></b>	
<b>Epoxy</b>	CRM-1064L
<b>Wire</b>	CuPdAu wire
<b>Mold Compound</b>	GE800
<b>Plating Composition</b>	Matte Tin



## MICROCHIP PACKAGE QUALIFICATION REPORT

### Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-163900167.000	GRSM4 1550 1739.700	1552MJB
MMT-163900697.000	GRSM4 1550 1739.700	1552TS4
MMT-163900698.000	GRSM4 1550 1739.700	1552U4T

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

40L PDIP (.600") assembled by MMT (ALPH) pass reliability test per QCI-39000.

Prepared By: Thinnapol                      Date: February 26, 2016 (Sr. Reliability Engineer)

(Mr. Thinnapol Nakkasun)

Approved By: Som                      Date: February 26, 2016 (Reliability Manager)

(Mr. Somnuek Thongprasert)

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>Electrical Test</b>	<b>Electrical Test:</b> +25°C and 125°C System: J750	JESD22- A113	693(0)	693		Good Devices
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard) 65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H  <b>Electrical Test:</b> + 125°C System: J750  <b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	JESD22- A104		231		77 units / lot
			231(0)	0/231	Pass	
			15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. System: HAST 6000X  <b>Electrical Test:</b> +25°C System: J750	JESD22- A118		231		77 units / lot
			231(0)	0/231	Pass	

## PACKAGE QUALIFICATION REPORT

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> 5.5 Volts System: HAST 6000X  <b>Electrical Test:</b> +25°C and 125°C System: J750	JESD22- A110	231(0)	231  0/231	Pass	77 units / lot
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB  <b>Electrical Test:</b> + 25°C and 125°C System: J750	JESD22 -A103	45(0)	45  0/45	Pass	45 units
<b>Bond Strength</b>	Wire Pull (> 2.5 grams)	JESD22 -B116	30 (0) Wires	0/30	Pass	
<b>Data Assembly</b>	Bond Shear (>15.00 grams)		30 (0) bonds	0/30	Pass	