



**MICROCHIP**

**QUALIFICATION REPORT  
RELIABILITY LABORATORY**

**PCN #: IIRA-31UJIT895**

Date:  
May 14, 2014

**Qualification of palladium coated copper (PdCu) bond wire  
for selected 200K products available in the 28L SOIC package  
at MTAI assembly site. The 8L SOIC package will qualify by  
similarity at MTAI assembly site.**

Distribution

Somnuek T.  
V. Danginis  
Wichai K.  
Payungsak W.

Rangsun K.  
A. Navarro  
J. Fernandez  
S. Kelsall  
S. Melby



## MICROCHIP PACKAGE QUALIFICATION REPORT

**Purpose** Qualification of palladium coated copper (PdCu) bond wire for selected 200K products available in the 28L SOIC package at MTAI assembly site. The 8L SOIC package will qualify by similarity at MTAI assembly site.

**CN** BC140250  
**QUAL ID** Q14021  
**MP CODE** LEAE2TN3XB04  
**Part No.** PIC16F726T-I/SO  
**Bonding No.** A-039992 Rev. C  
**CCB No.** 1155.31

### Package

**Type** 28L SOIC  
**Package size** 300 mils  
**Die thickness** 15 mils  
**Die size** 77.90 x 85.00 mils

### Lead Frame

**Paddle size** 200 x 240 mils  
**Material** CDA194  
**Surface** Bare copper on paddle  
**Process** Stamp  
**Lead Lock** No  
**Part Number** 10102807  
**Treatment** Brown Oxide Treatment

### Die attach material

**Epoxy** 3280  
**Wire** PdCu wire  
**Mold Compound** G600  
**Plating Composition** Matte Tin



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MT AI144802128	GRSM414292831.400	1409U35
MT AI144802129	GRSM414292831.500	1409U36
MT AI144802469	GRSM414292831.400	1409UGY

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

28L SOIC (.300") 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: Thinnapol      Date: May 14, 2014 (Sr. Reliability Engineer)

(Mr. Thinnapol Nakkasun)

Approved By: Som      Date: May 14, 2014 (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>Precondition Prior Perform Reliability Tests (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 MTA1144802128.000) System: J750			0/693		

# PACKAGE QUALIFICATION REPORT

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 <b>Electrical Test:</b> +85°C (With 1 lot 125°C on MTAI144802128.000) System: J750	JESD22-A104	231(0)	0/231	Pass	Parts had been pre-conditioned at 260°C
	<b>Bond Strength:</b> Wire Pull (> 2.5 grams) Bond Shear (15.00 grams)		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(0)	0/231	Pass	Parts had been pre-conditioned at 260°C

# 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 85°C System: J750 (With 1 lot 125°C on MTAI144802128.000)	JESD22-A110	231(0)	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	45 units
<b>Bond Strength Data Assembly</b>	Wire Pull (> 2.5 grams)  Bond Shear (15.00 grams)	JESD22-B116	30 (0) Wires  30 (0) bonds	0/30  0/30	Pass  Pass	