

Product Change Notification - JAON-15PAQT740

Date: 19 Dec 2014

Product Category: Analog (Linear & Mixed Signal) AND Interface; 8-bit Microcontrollers; SMSC

Notification subject: CCB 1155.38 Final Notice: Qualification of palladium coated copper (PdCu) bond wire in selected products of the 150K, 160K and 200K wafer technologies available in 14L SOIC package at MTAI site.

Notification text: **PCN Status:**

Final notification

Microchip Parts Affected:

See attachments of affected catalog part numbers (CPN) labeled as...

PCN_JAON-15PAQT740_Affected_CPN.xls

PCN_JAON-15PAQT740_Affected_CPN.pdf

Description of Change:

Qualification of palladium coated copper (PdCu) bond wire in selected products of the 150K, 160K and 200K wafer technologies available in 14L SOIC package at MTAI assembly site.

NOTE: Selected products are non-automotive devices. Please review the affected

CPN lists (attached) to identify the actual parts affected.

Impacts to Data Sheet:

None

Reason for Change:

To improve manufacturability and qualify PdCu bond wire at MTAI assembly site.

Change Implementation Status:

In Progress

Estimated First Ship Date:

January 9, 2015 (date code: 1502)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Markings to Distinguish Revised from Unrevised Devices:

Traceability code

Revision History:

October 31, 2014: Issued initial notification.

December 19, 2014: Issued final notification. Attached the qualification report.

Revise the description and parts lists to remove the 120K and 121K technologies from the scope. Revised the estimated first ship date from December 19, 2014 to January 9, 2015.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachment(s):

[PCN_JAON-15PAQT740_Qual_Report.pdf](#) [PCN_JAON-15PAQT740_Affected CPN.pdf](#) [PCN_JAON-15PAQT740_Affected CPN.xls](#)

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MICROCHIP

**QUALIFICATION REPORT
RELIABILITY LABORATORY**

PCN #: JAON-15PAQT740

**Date
December 15, 2014**

**Qualification of palladium coated copper (PdCu) bond wire in
selected products of the 150K, 160K and 200K wafer
technologies available in 14L SOIC package at MTAI
assembly site.**

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MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose Qualification of palladium coated copper (PdCu) bond wire in selected products of the 150K, 160K and 200K wafer technologies available in 14L SOIC package at MTAI assembly site.

CN BC141645

QUAL ID Q14144-02

MP CODE LEBD14D3XB04

Part No. PIC16F1823-E/SL

Bonding No. BDM-000642 Rev. A

CCB No. 1155.38

Package

Type 14L SOIC

Package size 150 mils

Die thickness 15 mils

Die size 92.0 x 61.0 mils

Lead Frame

Paddle size 95 x 155 mils

Material A194

Surface Bare copper on paddle

Process Stamp

Lead Lock No

Part Number 10101411

Treatment Brown Oxide Treatment

Die attach material

Epoxy 3280

Wire PdCu wire

Mold Compound G600V

Plating Composition Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTA1152403127.000	GRSM415073019.100	1437CMQ

Result

Pass Fail _____

14L SOIC (.150") 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: Wittawat P. Date: December 15, 2014 (Reliability Engineer)

(Mr. Wittawat Premniwat)

Approved By: Somnuek Date: December 15, 2014 (Reliability Manager)

(Mr. Somnuek Thongprasert)

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	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	45	0/45	Pass	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C,85°C and 125°C System: J750	JESD22- A113	231(0)	231	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			231		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			231		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			231		
	Electrical Test :+25°C,85°C and 125°C System: J750			0/231		

PACKAGE QUALIFICATION REPORT

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

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X Electrical Test: +25°C ,85°C and 125°C System: J750	JESD22-A110	77(0)	77 0/77	Pass	Parts had been pre-conditioned at 260°C
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB Electrical Test: +25°C ,85°C and 125°C System: J750	JESD22-A103	45(0)	45 0/45	Pass	
Solderability Temp 215°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Cross section	Cross section Inspection 3 units / lot	-	3(0) Wires	0/3		
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	M2011	10 (0) Wires	0/10	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	10 (0) bonds	0/10	Pass	

PCN_JAON-15PAQT740
CATALOG_PART_NBR
HA1086-I/SL
HA1086T-I/SL
HA2038-I/SL
HA2089-I/SL
HA2089T-I/SL
HA2089T-I/SL040
HA2089T-I/SL043
HA2089T-I/SL054
HA2089T-I/SL057
HA2089T-I/SL077
HA2089T-I/SL086
HA2089T-I/SL097
HA2089T-I/SL100
HA2089T-I/SL103
HA2089T-I/SL104
MCP3424-E/SL
MCP3424T-E/SL
MCP3428-E/SL
MCP3428T-E/SL
MCP4231-103E/SL
MCP4231-104E/SL
MCP4231-502E/SL
MCP4231-503E/SL
MCP4231T-103E/SL
MCP4231T-104E/SL
MCP4231T-502E/SL
MCP4231T-503E/SL
MCP4241-103E/SL
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PIC16F505-E/SL
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