

Product Change Notification - IIRA-27ERUU581

Date: 15 Oct 2014

Product Category: Memory; Analog (Linear & Mixed Signal) AND Interface; Analog (Thermal, Power Management & Safety); 8-bit Microcontrollers

Notification subject: CCB 1381.03 Final Notice: Qualification of palladium coated copper (PdCu) bond wire in selected products of 160K and 150K wafer technologies available in 14L and 8L TSSOP packages at MMT assembly site

Notification text: **PCN Status:**
Final notification

Microchip Parts Affected:

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

PCN_IIRA-27ERUU581_Affected_CPN.xls

PCN_IIRA-27ERUU581_Affected_CPN.pdf

Description of Change:

Qualification of palladium coated copper (PdCu) bond wire in selected products of 160K and 150K wafer technologies available in 14L and 8L TSSOP packages at MMT assembly site.

NOTE: Selected products are non-automotive standalone memory, analog, and PIC MCU 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 wire at MMT assembly site.

Change Implementation Status:

Complete

Estimated First Ship Date:

October 30, 2014 (date code: 1444)

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:

March 17, 2014: Issued initial notification.

September 8, 2014: Revised the initial notification. Updated the scope of change from **14 TSSOP** package to **160K and 150K technologies available in 14L and 8L TSSOP** package. Revised the estimated first ship date from June 10, 2014 to October 30, 2014

October 15, 2014: Issued final notification. Attached the Qualification Report.

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_IIRA-27ERUU581_Qual Report.pdf](#) [PCN_IIRA-27ERUU581_Affected_CPN.pdf](#) [PCN_IIRA-27ERUU581_Affected_CPN.xlsx](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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PCN_IIRA-27ERUU581
CATALOG_PART_NBR
24AA014H-I/ST
24AA014HT-I/ST
24AA014-I/ST
24AA014T-I/ST
24AA01H-I/ST
24AA01HT-I/ST
24AA01-I/ST
24AA01T-I/ST
24AA02/ST
24AA024H-I/ST
24AA024HT-I/ST
24AA024-I/ST
24AA024T-I/ST
24AA025-I/ST
24AA025T-I/ST
24AA02H-I/ST
24AA02HT-I/ST
24AA02-I/ST
24AA02T-I/ST
24AA04H-I/ST
24AA04HT-I/ST
24AA04-I/ST
24AA04T-I/ST
24AA08H-I/ST
24AA08HT-I/ST
24AA08-I/ST
24AA08T-I/ST
24AA128-I/ST
24AA128T-I/ST
24AA16-E/ST
24AA16H-I/ST
24AA16HT-I/ST
24AA16-I/ST
24AA16T-E/ST
24AA16T-I/ST
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24AA256-I/STRVE
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24C01CT-E/ST
24C01CT-I/ST
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24FC128-I/ST
24FC128-I/STA31
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24FC128T-I/STA31
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24LC64FT-I/ST
24LC64-I/ST
24LC64-I/STRVE
24LC64T-E/ST
24LC64T-I/ST
24LC64T-I/STRVE
24LC64X-E/ST
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24LC64XT-I/STRVE
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93AA56A-I/ST
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93C86CT-I/ST
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MCP98243T-BE/ST
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PIC16F506T-I/ST
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PIC16F616T-I/ST051

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PIC16F636T-I/ST
PIC16F636T-I/ST047
PIC16F676-E/ST
PIC16F676-I/ST
PIC16F676-I/STAU
PIC16F676-I/STC05
PIC16F676T-E/ST
PIC16F676T-I/ST
PIC16F676T-I/ST053
PIC16F676T-I/STAU
PIC16F684-E/ST
PIC16F684-E/STC13
PIC16F684-I/ST
PIC16F684-I/ST041
PIC16F684-I/ST102
PIC16F684-I/STAU
PIC16F684T-E/ST
PIC16F684T-E/ST061
PIC16F684T-I/ST
PIC16F684T-I/ST034
PIC16F684T-I/ST050
PIC16F684T-I/ST068
PIC16F684T-I/ST069
PIC16F684T-I/ST089
PIC16F684T-I/ST096
PIC16F684T-I/ST102
PIC16F684T-I/STAU
PIC16F688-E/ST
PIC16F688-I/ST
PIC16F688-I/ST029
PIC16F688-I/ST049
PIC16F688-I/ST050
PIC16F688T-E/ST
PIC16F688T-I/ST
PIC16F688T-I/ST029
PIC16F688T-I/ST036

PIC16F688T-I/ST044
PIC16F688T-I/ST045
PIC16F688T-I/ST049
PIC16F688T-I/ST050
PIC16F688T-I/ST054
PIC16F688T-I/ST056
PIC16HV616-E/ST
PIC16HV616-I/ST
PIC16HV616T-E/ST
PIC16HV616T-I/ST



MICROCHIP

**QUALIFICATION REPORT
RELIABILITY LABORATORY**

PCN #: IIRA-27ERUU581

**Date
September 30, 2014**

**Qualification of palladium coated copper (PdCu) bond wire at
MMT assembly site for 160K wafer technology in 14L TSSOP
package. The 150K wafer technology and 8L TSSOP package
will qualify by similarity.**

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MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper (PdCu) bond wire at MMT assembly site for 160K wafer technology in 14L TSSOP package. The 150K wafer technology and 8L TSSOP package will qualify by similarity.
CN	BC141217
QUAL ID	Q14108
MP CODE	DE0447D4XB04
Part No.	PIC16F688-I/ST
Bonding No.	BDM-000465 Rev. B
CCB No.	1381.03
<u>Package</u>	
Type	14L TSSOP
Package size	4.4 mm
Die thickness	11 mils
Die size	100.3 x 77.5 mils
<u>Lead Frame</u>	
Paddle size	118 x 153 mils
Material	C7025
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10101406
Treatment	BOT
<u>Die attach material</u>	
Epoxy	2200D
Wire	PdCu wire
Mold Compound	G600V
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-151800411.000	GRSM415083003.100	1431MJD
MMT-151900013.000	GRSM415083003.100	1432RYG
MMT-151900229.000	GRSM415083003.100	1432URD

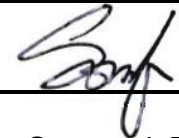
Result

Pass Fail _____

14L TSSOP (4.4mm) assembled by MMT (ALPH) 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: September 30, 2014 (Sr. Reliability Engineer)

(Mr. Udom Suksansakul)

Approved By:  Date: September 30, 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	135	0/135	Pass	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C and 85°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		
	Electrical Test :+25°C and 85°C System: J750			0/693		

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 (> 2.5 grams) Bond Shear (15.00 grams)		15 (0)	0/15	Pass	
	Stress Condition: -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H		15 (0)	0/15	Pass	
	Electrical Test: + 25°C System: J750		231			
	Stress Condition: -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H		231(0)	0/231	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
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 5.5 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
	Stress Condition: +130°C/85%RH,192 hrs. Bias Volt: 5.5 Volts System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	

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: SHEL LAB	JESD22- A103		45		45 units
	Electrical Test :+25°C and 85°C System: J750		45(0)	0/45	Pass	
Bond Strength Data Assembly	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	