Product Change Notification - KSRA-14MRKE725

Date:

09 May 2018

Product Category:

8-bit PIC Microcontrollers; 16-Bit - Microcontrollers and Digital Signal Controllers

Affected CPNs:

Notification subject:

CCB 3028 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu)bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly

Notification text:

PCN Status:

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.
NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change:

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly site.

Pre Change:

Using gold (Au) bond wire

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	NSEB Assembly Site	NSEB Assembly Site
Wire material	Au Wire	CuPdAu Wire
Die attach material	8600	8600
Molding compound material	G700LTD	G700LTD
Lead frame material	C194	C194

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve manufacturability by qualifying CuPdAu bond wire at NSEB assembly site.

Change Implementation Status:

In Progress

Estimated First Ship Date:

May 27, 2018 (date code: 1821)

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

post change parts.

Time Table Summary:

	July 2017					->	April 2018				May 2018				
Workweek	26	27	28	29	30		14	15	16	17	18	19	20	21	22
Initial PCN Issue Date				X											
Qual Report Availability										X					
Final PCN Issue Date										X					
Estimated Implementation Date														X	

Method to Identify Change:

Traceability code

Qualification Plan:

Please open the attachments included with this PCN labeled as PCN_#_Qual Plan

Revision History:

July 18, 2017: Issued initial notification.

April 27, 2018: Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on May 27, 2018.

May 09, 2018: Re-issued final notification to correct the attached qual 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_KSRA-14MRKE725_Qual_report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: KSRA-14MRKE725

Date
April 04, 2018

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly site

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly site
CN	ES160942-24048
QUAL ID	Q18012
MP CODE	YGAS1YT3XCKB
Part No.	DSPIC33FJ32MC304T-E/ML
Bonding No.	BDM-001459
CCB No	3028
Package	
Type	44L QFN
Package size	8x8x0.9 mm
Die thickness	11 mils
Die size	176.40 x 184.10 mils
Lead Frame	
Paddle size	272 x 272 mils
Material	C194
Surface	Ag on lead only
Process	Etched
Lead Lock	Yes
Part Number	FR1139
Treatment	Micro- etched
Material	
Epoxy	8600 Conductive
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB183800646.000	TC03918156578.100	1750ADP
NSEB183800649.000	TC03918156578.100	1750ADW
NSEB183800651.000	TC03918156578.100	1750AE4

Result [X] Pass [ ] Fail [ ] _____

44L QFN (8x8x0.9mm) assembled by UTL (NSEB) 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.

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 J-STD-020D	198	0/198	Pass	
<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	**Electrical Test :**+25°C,85°C and 125°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE 85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 **Electrical Test :**+25°C,85°C and 125°C System: J750			693 693 693 0/693	 Pass	
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H **Electrical Test:** + 85°C and 125°C System: J750	JESD22-A104	 231(0)	231 0/231	 Pass	Parts had been pre-conditioned at 260°C
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 3.6 Volts System: HAST 6000X **Electrical Test:** +25°C,85°C and 125°C System: J750	JESD22-A110	 231(0)	231 0/231	 Pass	Parts had been pre-conditioned at 260°C 77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X **Electrical Test:** +25°C System: J750	JESD22-A118	 231(0)	231 0/231	 Pass	Parts had been pre-conditioned at 260°C 77 units / lot
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	45 units
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	
Bond Strength **Data Assembly**	Wire Pull (> 4.0 grams) Bond Shear (>10.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

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Affected Catalog Part Numbers(CPN)

PIC18F46J11-I/ML
PIC18F46J11T-I/ML
PIC18LF46J11-I/ML
PIC18LF46J11T-I/ML
PIC18F44J11-I/ML
PIC18F44J11T-I/ML
PIC18LF44J11-I/ML
PIC18LF44J11T-I/ML
PIC18F45J11-I/ML
PIC18F45J11T-I/ML
PIC18LF45J11-I/ML
PIC18LF45J11T-I/ML
PIC18F44J50-I/ML
PIC18F44J50T-I/ML
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PIC18LF46J13T-I/ML
PIC18F47J13-I/ML
PIC18F47J13T-I/ML
PIC18LF47J13-I/ML
PIC18LF47J13T-I/ML
PIC24FJ32MC104-I/ML
DSPIC33FJ32GP104-I/ML

PIC24FJ64GA004-E/ML
PIC24FJ64GA004-I/ML
PIC24FJ64GA004-I/MLB4
PIC24FJ64GA004-I/MLC13
PIC24FJ64GA004T-I/ML
PIC24FJ64GA004T-I/MLC13
PIC24FJ32GA004-E/ML
PIC24FJ32GA004-I/ML
PIC24FJ32GA004T-E/ML
PIC24FJ32GA004T-I/ML
PIC24FJ32GA004T-I/MLC12
PIC24FJ16GA004-E/ML
PIC24FJ16GA004-I/ML
PIC24FJ16GA004T-I/ML
PIC24FJ16GA004T-I/MLC09
PIC24FJ48GA004-E/ML
PIC24FJ48GA004-I/ML
PIC24FJ48GA004T-I/ML
PIC24FJ48GA004T-I/ML022
PIC24FJ64GA104-E/ML
PIC24FJ64GA104-I/ML
PIC24FJ64GA104T-E/ML
PIC24FJ64GA104T-I/ML
PIC24FJ32GA104-E/ML
PIC24FJ32GA104-I/ML
PIC24FJ32GA104-I/ML021
PIC24FJ32GA104-I/ML023
PIC24FJ32GA104-I/ML025
PIC24FJ32GA104T-E/ML
PIC24FJ32GA104T-I/ML
PIC24FJ32GA104T-I/ML021
PIC24FJ32GA104T-I/ML023
PIC24FJ32GA104T-I/ML024
PIC24FJ32GA104T-I/ML025
PIC24FJ64GB004-I/ML
PIC24FJ64GB004T-I/ML
PIC24FJ32GB004-I/ML
PIC24FJ32GB004T-I/ML