Product Change Notification - KSRA-27FAPU261

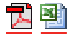
Date:

15 Aug 2019

Product Category:

8-bit Microcontrollers; Touch Controllers; Capacitive Touch Sensors

Affected CPNs:



Notification subject:

CCB 3042 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond in selected products of the 200K wafer technology available in 8L DFN (3x3x0.9mm) package at NSEB assembly site

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 in selected products of the 200K wafer technology available in 8L DFN (3x3x0.9mm) package at NSEB assembly site

Pre Change:

Using gold (Au) bond wire, 8200T or 8600 die attach material, G770HCD or G700LTD molding compound material and EFTEC-64T lead frame material

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach material, G700LTD molding compound material and C194 lead frame material

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	UTAC Thai Limited LTD. (NSEB)		UTAC Thai Limited LTD. (NSEB)
Wire material	Au Wire		CuPdAu Wire
Die attach material	8200T	8600	8600
Molding compound material	G770HCD	G700LTD	G700LTD
Lead frame material	EFTEC-64T		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:

March 19, 2018 (date code: 1812)

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

Time Table Summary:

	August 2017					-->	February 2018				March 2018				
Workweek	31	32	33	34	35		05	06	07	08	09	10	11	12	13
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 Report:

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

Revision History:

August 02, 2017: Issued initial notification.

August 31, 2017: Re-issued initial notification to include CCB 3074.

February 19, 2018: Issued final notification. Attached the Qualification Report. Update subject to remove CCB 3074. Revised the affected parts list. Provided estimated first ship date on March 19, 2018.

August 15, 2019: Re-issued final notification to specify the package size (3x3x0.9mm) in the subject and description of change and update the affected CPN list.

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-27FAPU261_Qual Report.pdf

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

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

MTCH112-I/MF
MTCH112T-I/MF
MTCH810-I/MF
MTCH810T-I/MF
PIC12F1501-E/MF
PIC12F1501-I/MF
PIC12F1501T-E/MF
PIC12F1501T-I/MF
PIC12F1571-E/MF
PIC12F1571-I/MF
PIC12F1571T-I/MF
PIC12F1572-E/MF
PIC12F1572-E/MFC02
PIC12F1572-I/MF
PIC12F1572T-E/MFC02
PIC12F1572T-I/MF
PIC12F1612-E/MF
PIC12F1612-I/MF
PIC12F1822-E/MF
PIC12F1822-I/MF
PIC12F1822-I/MF043
PIC12F1822T-E/MF
PIC12F1822T-I/MF
PIC12F1840-E/MF
PIC12F1840-H/MF
PIC12F1840-I/MF
PIC12F1840T-E/MF
PIC12F1840T-I/MF
PIC12LF1501-E/MF
PIC12LF1501-I/MF
PIC12LF1571-E/MF
PIC12LF1571-I/MF
PIC12LF1572-E/MF
PIC12LF1572-I/MF
PIC12LF1572T-I/MF
PIC12LF1612-E/MF
PIC12LF1612-I/MF
PIC12LF1822-E/MF
PIC12LF1822-I/MF
PIC12LF1822-I/MF023
PIC12LF1822-I/MFC02
PIC12LF1822T-I/MF
PIC12LF1840-E/MF
PIC12LF1840-I/MF
PIC12LF1840T-I/MF

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: KSRA-27FAPU261

Date
December 22, 2017

Qualification of palladium coated copper with gold flash (CuPdAu) bond in selected products of the 200K wafer technology available in 8L DFN package at NSEB assembly site

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond in selected products of the 200K wafer technology available in 8L DFN package at NSEB assembly site
CN	ES140914
Qual ID	Q17179
MP Code	LEBD24A7XB04
Part No.	PIC12F1822-E/MF
Bonding No.	BDM-001457
CCB No.	3042

<u>Package</u>	
Type	8L DFN
Package size	3x3x0.9 mm
Die thickness	8 mils
Die size	61.00 x 92.00 mils
<u>Lead Frame</u>	
Paddle size	71 x 102 mils
Material	C194-FH
Surface	Ag on lead only
Process	Etched
Lead Lock	Yes
Part Number	FR1347
Treatment	Micro – Etched
<u>Material</u>	
Epoxy	8600
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
NSEB182700368.000	GRSM417500484.100	17394YS
NSEB182700369.000	GRSM417500484.100	17394YT
NSEB182700370.000	GRSM417500484.100	17394YU

Result [X] Pass [ ] Fail [ ] ____________________

8L DFN (3x3x0.9 mm) 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	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test :**+25°C and 125°C System: J750	JESD22-A113	693(0)	693		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			693		
	System: Vitronics Soltec MR1243					
	Electrical Test :+25°C and 125°C System: J750			0/693	Pass	
Temp Cycle	**Stress Condition:** (Standard) -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: + 125°C System: J750		231(0)	0/231	Pass	
HAST	**Stress Condition:** (Standard) +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 125°C System: J750		231(0)	0/231	Pass	77 units / lot
UNBIASED-HAST	**Stress Condition:** (Standard) +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

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 **Electrical Test :**+25°C and 125°C System: J750	JESD22-A103	45(0)	45 0/45	Pass	45 units
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	
Physical Dimensions	Physical Dimension, 30 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>7.0 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	