Product Change Notification - KSRA-20EIEO658

Date:

02 Aug 2018

Product Category:

16-Bit - Microcontrollers and Digital Signal Controllers

Affected CPNs:

Notification subject:

CCB 2978 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 28L QFN-S package at NSEB assembly site

Notification text:

PCN Status:

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open the attachments found in the attachments field below labeled as PCN_#_Affected_CPN.

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 28L QFN-S package at NSEB assembly site

Pre Change:

Using gold (Au) bond wire, 8200T or 8600 die attach and G770HCD or G700LTD mold compound material.

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach and G700LTD mold compound material.

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	8200T	8600	8600
Molding compound material	G770HCD	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:

September 02, 2018 (date code: 1836)

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

Time Table Summary:

	July 2017						-->	August 2018					September 2018				
Workweek	26	27	28	29	30	31		31	32	33	34	35	36	37	38	39	40
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:

July 13, 2017: Issued initial notification.

August 02, 2018: Issued final notification. Attached the Qualification Report. Provided estimated first ship date on September 02, 2018.

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-20EIEO658_Qual_Report.pdf

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

Terms and Conditions:

If you wish to change your product/process change notification (PCN) profile please log on to our website at http://www.microchip.com/PCN sign into myMICROCHIP to open the myMICROCHIP home page, then select a profile option from the left navigation bar.

To opt out of future offer or information emails (other than product change notification emails), click here to go to microchipDIRECT and login, then click on the "My account" link, click on "Update profile" and un-check the box that states "Future offers or information about Microchip's products or services."

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: KSRA-20EIEO658

Date
June 26, 2018

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN-S package at NSEB assembly site

MICROCHIP

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 28L QFN-S package at NSEB assembly site
CN	ES201133
QUAL ID	Q17220
MP CODE	YGAS1YM2XBDA
Part No.	DSPIC33FJ64GP202T-E/MM
Bonding No.	BDM-001453
CCB No.:	2978
Package	
Type	28L QFN-S
Package size	6x6x0.9mm
Die thickness	11 mils
Die size	176.40 x 184.10 mils
Lead Frame	
Paddle size	193 x 193 mils
Material	C194
Surface	Ag on lead only
Process	Etched
Lead Lock	Yes
Part Number	FR0410
Treatment	Micro-etched
Material	
Epoxy	8600 Conductive
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Tin

MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB183700857.000	TC11918095129.200	174949B
NSEB183800135.000	TC11918095129.200	17504AE
NSEB183800144.000	TC11918095129.200	17504BJ

Result [X] Pass [ ] Fail [ ] ____________________

28L QFN-S (6x6x0.9mm) assembled by UTL 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,85°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,85°C and 125°C System: J750			0/693	Pass	
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 and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>3.0 grams) Bond Shear (>10.00 grams)		45 (0)	0/45	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 3.6 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C,85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>3.0 grams) Bond Shear (>10.00 grams)		45 (0)	0/45	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

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,85°C and 125°C System: J750	JESD22-A103	135(0)	135 0/135	Pass	45 units / lot
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	J-STD-002D	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	J-STD-002D	22 (0)	22 22 0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.0 grams) Bond Shear (>10.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

Affected Catalog Part Numbers(CPN)

DSPIC33FJ06GS102A-E/MM
DSPIC33FJ06GS102A-I/MM
DSPIC33FJ06GS102AT-E/MM
DSPIC33FJ06GS102AT-I/MM
DSPIC33FJ06GS102-E/MM
DSPIC33FJ06GS102-I/MM
DSPIC33FJ06GS102T-E/MM
DSPIC33FJ06GS102T-I/MM
DSPIC33FJ06GS202A-E/MM
DSPIC33FJ06GS202A-I/MM
DSPIC33FJ06GS202AT-E/MM
DSPIC33FJ06GS202AT-I/MM
DSPIC33FJ06GS202-E/MM
DSPIC33FJ06GS202-E/MMC04
DSPIC33FJ06GS202-I/MM
DSPIC33FJ06GS202T-E/MM
DSPIC33FJ06GS202T-E/MMC04
DSPIC33FJ06GS202T-E/MMC06
DSPIC33FJ06GS202T-I/MM
DSPIC33FJ09GS302-E/MM
DSPIC33FJ09GS302-I/MM
DSPIC33FJ09GS302T-E/MM
DSPIC33FJ09GS302T-I/MM
DSPIC33FJ128GP202-E/MM
DSPIC33FJ128GP202-I/MM
DSPIC33FJ128GP202T-E/MM
DSPIC33FJ128GP202T-I/MM
DSPIC33FJ128GP802-E/MM
DSPIC33FJ128GP802-I/MM
DSPIC33FJ128GP802T-E/MM
DSPIC33FJ128GP802T-I/MM
DSPIC33FJ128GP802T-I/MM038
DSPIC33FJ128GP802T-I/MM039
DSPIC33FJ128MC202-E/MM
DSPIC33FJ128MC202-I/MM
DSPIC33FJ128MC202T-E/MM
DSPIC33FJ128MC202T-I/MM
DSPIC33FJ128MC802-E/MM
DSPIC33FJ128MC802-H/MM
DSPIC33FJ128MC802-I/MM
DSPIC33FJ128MC802T-E/MM
DSPIC33FJ128MC802T-H/MM

DSPIC33FJ128MC802T-I/MM
DSPIC33FJ16GS402-50I/MM
DSPIC33FJ16GS402-E/MM
DSPIC33FJ16GS402-H/MM
DSPIC33FJ16GS402-I/MM
DSPIC33FJ16GS402T-50I/MM
DSPIC33FJ16GS402T-E/MM
DSPIC33FJ16GS402T-H/MM
DSPIC33FJ16GS402T-I/MM
DSPIC33FJ16GS502-50I/MM
DSPIC33FJ16GS502-E/MM
DSPIC33FJ16GS502-E/MMC03
DSPIC33FJ16GS502-H/MM
DSPIC33FJ16GS502-I/MM
DSPIC33FJ16GS502T-50I/MM
DSPIC33FJ16GS502T-E/MM
DSPIC33FJ16GS502T-E/MMC03
DSPIC33FJ16GS502T-H/MM
DSPIC33FJ16GS502T-I/MM
DSPIC33FJ32GP202-E/MM
DSPIC33FJ32GP202-I/MM
DSPIC33FJ32GP202T-E/MM
DSPIC33FJ32GP202T-I/MM
DSPIC33FJ32GP302-E/MM
DSPIC33FJ32GP302-I/MM
DSPIC33FJ32GP302T-E/MM
DSPIC33FJ32GP302T-E/MMC03
DSPIC33FJ32GP302T-I/MM
DSPIC33FJ32MC202-E/MM
DSPIC33FJ32MC202-H/MM
DSPIC33FJ32MC202-I/MM
DSPIC33FJ32MC202T-E/MM
DSPIC33FJ32MC202T-H/MM
DSPIC33FJ32MC202T-I/MM
DSPIC33FJ32MC302-E/MM
DSPIC33FJ32MC302-I/MM
DSPIC33FJ32MC302T-E/MM
DSPIC33FJ32MC302T-I/MM
DSPIC33FJ64GP202-E/MM
DSPIC33FJ64GP202-I/MM
DSPIC33FJ64GP202T-E/MM
DSPIC33FJ64GP202T-I/MM
DSPIC33FJ64GP802-E/MM
DSPIC33FJ64GP802-H/MM
DSPIC33FJ64GP802-I/MM
DSPIC33FJ64GP802-I/MMB21
DSPIC33FJ64GP802T-E/MM

DSPIC33FJ64GP802T-E/MM032
DSPIC33FJ64GP802T-E/MM041
DSPIC33FJ64GP802T-H/MM
DSPIC33FJ64GP802T-I/MM
DSPIC33FJ64GP802T-I/MMB21
DSPIC33FJ64MC202-E/MM
DSPIC33FJ64MC202-E/MMC04
DSPIC33FJ64MC202-I/MM
DSPIC33FJ64MC202-I/MM030
DSPIC33FJ64MC202-I/MMC21
DSPIC33FJ64MC202T-E/MM
DSPIC33FJ64MC202T-E/MMC04
DSPIC33FJ64MC202T-I/MM
DSPIC33FJ64MC202T-I/MM030
DSPIC33FJ64MC202T-I/MMC21
DSPIC33FJ64MC802-E/MM
DSPIC33FJ64MC802-H/MM
DSPIC33FJ64MC802-I/MM
DSPIC33FJ64MC802T-E/MM
DSPIC33FJ64MC802T-H/MM
DSPIC33FJ64MC802T-I/MM
HA7612-I/MM033
HA7612-I/MM036
HA7612T-I/MM033
HA7612T-I/MM036
PIC24HJ128GP202-E/MM
PIC24HJ128GP202-I/MM
PIC24HJ128GP202T-E/MM
PIC24HJ128GP202T-I/MM
PIC24HJ128GP502-E/MM
PIC24HJ128GP502-H/MM
PIC24HJ128GP502-I/MM
PIC24HJ128GP502T-E/MM
PIC24HJ128GP502T-H/MM
PIC24HJ128GP502T-I/MM
PIC24HJ32GP202-E/MM
PIC24HJ32GP202-H/MM
PIC24HJ32GP202-I/MM
PIC24HJ32GP202T-I/MM
PIC24HJ32GP302-E/MM
PIC24HJ32GP302-I/MM
PIC24HJ32GP302T-E/MM
PIC24HJ32GP302T-I/MM
PIC24HJ64GP202-E/MM
PIC24HJ64GP202-I/MM
PIC24HJ64GP202T-E/MM
PIC24HJ64GP202T-I/MM

PIC24HJ64GP502-E/MM
PIC24HJ64GP502-H/MM
PIC24HJ64GP502-I/MM
PIC24HJ64GP502T-E/MM
PIC24HJ64GP502T-H/MM
PIC24HJ64GP502T-I/MM