Product Change Notification - KSRA-20EIEO658

Date: 13 Jul 2017

Product Category: 16-Bit - Microcontrollers and Digital Signal Controllers

Notification subject: CCB 2978 Initial Notice: Qualification of 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:
Initial notification

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 Qualification Completion Date:
December 2017

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	July 2017						-->	December 2017				
Workweek	26	27	28	29	30	31		49	50	51	52	53
Initial PCN Issue Date			X									
Qual Report Availability											X	
Final PCN Issue 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 13, 2017: Issued initial notification.

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_Affected CPN.pdf
PCN_KSRA-20EIEO658_Qual Plan.pdf
PCN_KSRA-20EIEO658_Affected CPN.xlsx

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 PLAN SUMMARY

PCN #: KSRA-20EIEO658

Date:
June 14, 2017

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

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

CCB No.: 2978

MP code: YGAS1YM2XBDA

Part No.: DSPIC33FJ64GP202T-E/MM

BD No: BDM-001453A

Process/CUP: TSMC 0.25um noCUP

MSL: 1

Subcon facility	NSEB
Package type/pin	28 QFN-S
Package code	M2X
Lead frame:	
Part number	FR0410
Paddle size:	193x193
Material	C194
Wire:	
Material	CuPdAu
Die Attach Epoxy:	
Part Number	8600
Conductive	Conductive
Mold Compound:	
Part Number	G700LTD
Lead finish:	Matte tin

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
		-40°C to +125°C datasheet operating range (E Temp)	-40°C to +125°C datasheet operating range (E Temp)								
Standard Pb-free Solderability	JESD22B-102E; Perform 8 hours of steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.			22	5	1	27	>95% lead coverage	5		Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Backward Solderability	JESD22B-102E; Perform 8 hour steam aging for Matte tin finish and 1 hr steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.			22	5	1	27	>95% lead coverage	5		
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5		Wire pull / ball shear is performed after stress testing and decapsulation.
Wire Bond Pull - WBP	CDF-AEC-Q100-001			5	0	1	5		5		Wire pull / ball shear is performed after stress testing and decapsulation.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5		5		Wire pull / ball shear is performed after stress testing and decapsulation.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5		
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5		

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Test Site	Special Instructions
		-40°C to +125°C datasheet operating range (E Temp)	-40°C to +125°C datasheet operating range (E Temp)								
HTSL (High Temp Storage Life)	'JESD22A-103. 150°C for 1008 or 175ºC for 504 hours. Read points at 1000 hours. Electrical test pre and post stress at +25°C and hot temp.	500hrs	+25°C, +125°C	45	5	1	50	0	10		Spares should be properly identified.
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020D for package type. MSL1 @+260°C		+25°C +125ºC	231	15	3	738	0	15		Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	'+130°C/85% RH for 96hrs. Electrical test pre and post stress at +25°C and hot temp.	96 hrs	+25°C, +125°C	77	5	3	246	0	10		Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+130°C/85% RH for hrs	130°C/85% RH for 96 hrs	+25°C	77	5	3	246	0	10		Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	cond C -65°C to +150°C for 1000 Cycles...Electrical test pre and post stress at hot temp.	500 cycle	+25°C, +125°C	77	5	3	246	0	15		Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

KSRA-20EIEO658 -CCB 2978 Initial Notice: Qualification of CuPdAu bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN-S package at NSEB assembly site

Affected Catalog Part Numbers (CPN)

PCN_ KSRA-20EIEO658
CATALOG_PART_NBR
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

KSRA-20EIEO658 -CCB 2978 Initial Notice: Qualification of CuPdAu bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN-S package at NSEB assembly site

Affected Catalog Part Numbers (CPN)

PCN_ KSRA-20EIEO658
CATALOG_PART_NBR
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

KSRA-20EIEO658 -CCB 2978 Initial Notice: Qualification of CuPdAu bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN-S package at NSEB assembly site

Affected Catalog Part Numbers (CPN)

PCN_ KSRA-20EIEO658
CATALOG_PART_NBR
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

KSRA-20EIEO658 -CCB 2978 Initial Notice: Qualification of CuPdAu bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN-S package at NSEB assembly site

Affected Catalog Part Numbers (CPN)

PCN_ KSRA-20EIEO658
CATALOG_PART_NBR
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