Product Change Notification - KSRA-05DWWG372

Date: 05 Aug 2017

Product Category: 8-bit PIC Microcontrollers; USB Bridge

Notification subject: CCB 2854 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of 200K wafer technology available in 14L SOIC package at MMT assembly site

Notification text:

PCN Status:
Final 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 for selected products of 200K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size

Pre Change:
Assembled at MMT using gold (Au) bond wire, 90X110 mils lead frame paddle size, spot LF plating and assembled in MTAI using Palladium coated copper (PdCu) bond wire, 95X155 mils lead frame paddle size, and Bare Cu LF surface

Post Change:
Assembled in MMT using palladium coated copper with gold flash (CuPdAu) bond wire, 95X155 mils lead frame paddle size, and Bare Cu LF surface

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	MMT	MTAI	MMT
Wire material	Au Wire	PdCu Wire	CuPdAu Wire
Die attach material	8390A	8390A	8390A
Molding compound material	G600V	G600V	G600V
Lead frame material	C194	C194	C194
Lead Frame Paddle Size	90x110 mils	95x155 mils	95x155 mils
LF Surface	Spot	Bare Cu	Bare Cu

Impacts to Data Sheet:
None

Change Impact:
None

Reason for Change:
To improve productivity by qualifying palladium coated copper with gold flash (CuPdAu) bond wire at MMT assembly site.

Change Implementation Status:
In Progress

Estimated First Ship Date:
September 05, 2017 (1736)

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

Time Table Summary:

	February 2017					-->	August 2017				September 2017				
Workweek	05	06	07	08	09		31	32	33	35	35	36	37	38	39
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:
February 14, 2017: Issued initial notification.
August 05, 2017: Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on September 05, 2017

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-05DWWG372_Affected CPN.pdf
PCN_KSRA-05DWWG372_Qual Report.pdf
PCN_KSRA-05DWWG372_Affected CPN.xlsx

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

Terms and Conditions:

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: KSRA-05DWWG372

Date
July 12, 2017

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of 200K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of 200K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size
CN	ES099833
QUAL ID	Q17081
MP CODE	LECW14D3XAXX
Part No.	PIC16F1615-E/SL
Bonding No.	BDE-001262 Rev. A
CCB No.	2854

Package

Type	14L SOIC
Package size	150 mils
Die thickness	15 mils
Die size	100.00 x 84.90 mils

Lead Frame

Paddle size	95 x 155 mils
Material	CDA194
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10101411
Treatment	BOT with Roughened Ag

Material

Epoxy	8390A
Wire	CuPdAu wire
Mold Compound	G600V
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-180501093.000	GRSM417182660.B00	17175DD
MMT-180600258.000	GRSM417182660.B00	17186SD
MMT-180600393.000	GRSM417182660.B00	171883G

Result [X] Pass [ ] Fail [ ] _____

14L SOIC (.150”) 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.

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	135	0/135	Pass	
<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	**Electrical Test :**+25°C,85°C and 125°C System:J750 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	JESD22A113	693(0)	693 693 693 693 0/693	 Pass	Good Devices

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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: +85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength:		15 (0)	0/15	Pass	
	Wire Pull (> 2.5 grams)					
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
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
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 ,85°C and 125°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
Bond Strength Data Assembly	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

PCN_KSRA-05DWWG372 -CCB 2854 Final Notice: Qualification of CuPdAu bond wire for selected products of 200K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size

Affected Catalog Part Number (CPN)

PCN_KSRA-05DWWG372
CatalogPartNumber
HA4923-I/SL
HA4923T-I/SL
HA4986-I/SL
HA4986T-I/SL
MCP2221A-I/SL
MCP2221AT-I/SL
MCP2221-I/SL
MCP2221T-I/SL
PIC16F1455-E/SL
PIC16F1455-I/SL
PIC16F1455T-I/SL
PIC16F1503-E/SL
PIC16F1503-I/SL
PIC16F1503-I/SL052
PIC16F1503T-E/SL
PIC16F1503T-I/SL
PIC16F1503T-I/SL020
PIC16F1503T-I/SL034
PIC16F1503T-I/SL036
PIC16F1503T-I/SL038
PIC16F1503T-I/SL041
PIC16F1503T-I/SL046
PIC16F1503T-I/SL052
PIC16F1503T-I/SL054
PIC16F1503T-I/SL055
PIC16F1503T-I/SL056
PIC16F1503T-I/SL057
PIC16F1503T-I/SL058
PIC16F1503T-I/SL059
PIC16F1574-E/SL
PIC16F1574-I/SL
PIC16F1574T-I/SL
PIC16F1575-E/SL
PIC16F1575-I/SL
PIC16F1575T-E/SL
PIC16F1575T-I/SL
PIC16F1613-E/SL
PIC16F1613-I/SL
PIC16F1613T-I/SL
PIC16F1614-E/SL
PIC16F1614-I/SL
PIC16F1614T-I/SL
PIC16F1615-E/SL

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Affected Catalog Part Number (CPN)

PCN_KSRA-05DWWG372
CatalogPartNumber
PIC16F1615-I/SL
PIC16F1615T-I/SL
PIC16F1703-E/SL
PIC16F1703-I/SL
PIC16F1703T-I/SL
PIC16F1704-E/SL
PIC16F1704-I/SL
PIC16F1704-I/SLC01
PIC16F1704T-E/SL
PIC16F1704T-I/SL
PIC16F1704T-I/SLC01
PIC16F1705-E/SL
PIC16F1705-I/SL
PIC16F1705-I/SLC01
PIC16F1705T-E/SL
PIC16F1705T-I/SL
PIC16F1705T-I/SLC01
PIC16F1764-E/SL
PIC16F1764-I/SL
PIC16F1764T-I/SL
PIC16F1765-E/SL
PIC16F1765-I/SL
PIC16F1765T-I/SL
PIC16F1823-E/SL
PIC16F1823-I/SL
PIC16F1823-I/SL024
PIC16F1823-I/SL037
PIC16F1823T-E/SL
PIC16F1823T-I/SL
PIC16F1823T-I/SL024
PIC16F1823T-I/SL037
PIC16F1823T-I/SL038
PIC16F1823T-I/SL039
PIC16F1824-E/SL
PIC16F1824-I/SL
PIC16F1824-I/SLC09
PIC16F1824T-E/SL
PIC16F1824T-I/SL
PIC16F1824T-I/SL021
PIC16F1824T-I/SL023
PIC16F1824T-I/SL024
PIC16F1824T-I/SL027
PIC16F1824T-I/SL032

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PCN_KSRA-05DWWG372
CatalogPartNumber
PIC16F1824T-I/SLC09
PIC16F1825-E/SL
PIC16F1825-H/SL
PIC16F1825-I/SL
PIC16F1825T-E/SL
PIC16F1825T-H/SL
PIC16F1825T-I/SL
PIC16F1825T-I/SL041
PIC16LF1503-E/SL
PIC16LF1503-E/SLC04
PIC16LF1503-I/SL
PIC16LF1503-I/SL021
PIC16LF1503T-E/SL
PIC16LF1503T-E/SLC04
PIC16LF1503T-I/SL
PIC16LF1503T-I/SL020
PIC16LF1503T-I/SL027
PIC16LF1503T-I/SL028
PIC16LF1554-E/SL
PIC16LF1554-I/SL
PIC16LF1554T-I/SL
PIC16LF1574-E/SL
PIC16LF1574-I/SL
PIC16LF1574T-I/SL
PIC16LF1575-E/SL
PIC16LF1575-I/SL
PIC16LF1575T-I/SL
PIC16LF1613-E/SL
PIC16LF1613-I/SL
PIC16LF1613T-I/SL
PIC16LF1614-E/SL
PIC16LF1614-I/SL
PIC16LF1614T-I/SL
PIC16LF1615-E/SL
PIC16LF1615-I/SL
PIC16LF1615T-I/SL
PIC16LF1703-E/SL
PIC16LF1703-I/SL
PIC16LF1703T-I/SL
PIC16LF1704-E/SL
PIC16LF1704-I/SL
PIC16LF1704-I/SLC01
PIC16LF1704T-I/SL

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Affected Catalog Part Number (CPN)

PCN_KSRA-05DWWG372
CatalogPartNumber
PIC16LF1704T-I/SLC01
PIC16LF1705-E/SL
PIC16LF1705-I/SL
PIC16LF1705T-I/SL
PIC16LF1764-E/SL
PIC16LF1764-I/SL
PIC16LF1764T-I/SL
PIC16LF1765-E/SL
PIC16LF1765-I/SL
PIC16LF1765T-I/SL
PIC16LF1823-E/SL
PIC16LF1823-I/SL
PIC16LF1823-I/SLC03
PIC16LF1823T-E/SL
PIC16LF1823T-I/SL
PIC16LF1823T-I/SL023
PIC16LF1823T-I/SLC03
PIC16LF1824-E/SL
PIC16LF1824-I/SL
PIC16LF1824-I/SLC01
PIC16LF1824T-E/SL
PIC16LF1824T-I/SL
PIC16LF1824T-I/SL026
PIC16LF1824T-I/SL027
PIC16LF1824T-I/SL028
PIC16LF1824T-I/SLC01
PIC16LF1825-E/SL
PIC16LF1825-I/SL
PIC16LF1825T-E/SL
PIC16LF1825T-I/SL
PIC16LF1825T-I/SL020
PIC16LF1825T-I/SL022