Product Change Notification - KSRA-02KYDI802

Date: 09 May 2017

Product Category: 8-bit PIC Microcontrollers; Sigma - Delta A/D Converters; Digital Potentiometers; System D/A Converters; Linear Op Amps

Notification subject: CCB 2853: Final Notice: Qualification of CuPdAu bond wire for selected products of 160K and 150K wafer tech available in 14LSOIC package at MMT assembly site using 95x155 mils lead frame paddle size

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 160K 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:
June 12, 2017 (date code: 1724)

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

Time Table Summary:

	February 2017	-->	May 2017	June 2017

Workweek	05	06	07	08	09		18	19	20	21	22	23	24	25	26
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.
May 09, 2017: Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on June 12, 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-02KYDI802_Affected CPN.pdf
PCN_KSRA-02KYDI802_Qual Report.pdf
PCN_KSRA-02KYDI802_Affected CPN.xlsx

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

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PCN_KSRA-02KYDI802 -CCB 2853: Final Notice: Qualification of CuPdAu bond wire for selected products of 160K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils leadframe paddle size

Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
HA1086-I/SL
HA1086T-I/SL
HA2038-I/SL
HA2089-I/SL
HA2089-I/SL108
HA2089-I/SL109
HA2089T-I/SL
HA2089T-I/SL040
HA2089T-I/SL043
HA2089T-I/SL054
HA2089T-I/SL057
HA2089T-I/SL077
HA2089T-I/SL086
HA2089T-I/SL097
HA2089T-I/SL100
HA2089T-I/SL103
HA2089T-I/SL104
HA2089T-I/SL106
HA2089T-I/SL108
HA2089T-I/SL109
MCP3424-E/SL
MCP3424T-E/SL
MCP3428-E/SL
MCP3428T-E/SL
MCP4231-103E/SL
MCP4231-104E/SL
MCP4231-502E/SL
MCP4231-503E/SL
MCP4231T-103E/SL
MCP4231T-104E/SL
MCP4231T-502E/SL
MCP4231T-503E/SL
MCP4241-103E/SL
MCP4241-104E/SL
MCP4241-502E/SL
MCP4241-503E/SL
MCP4241T-103E/SL
MCP4241T-104E/SL
MCP4241T-502E/SL
MCP4241T-503E/SL
MCP4251-103E/SL
MCP4251-104E/SL
MCP4251-502E/SL

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
MCP4251-503E/SL
MCP4251T-103E/SL
MCP4251T-104E/SL
MCP4251T-502E/SL
MCP4251T-503E/SL
MCP4261-103E/SL
MCP4261-104E/SL
MCP4261-502E/SL
MCP4261-503E/SL
MCP4261T-103E/SL
MCP4261T-104E/SL
MCP4261T-502E/SL
MCP4261T-503E/SL
MCP4902-E/SL
MCP4902T-E/SL
MCP4912-E/SL
MCP4912T-E/SL
MCP4922-E/SL
MCP4922T-E/SL
MCP6424-E/SL
MCP6424T-E/SL
MCP6474-E/SL
MCP6474T-E/SL
MCP6484-E/SL
MCP6484T-E/SL
MCP6494-E/SL
MCP6494T-E/SL
MCV14A-I/SL
MCV14A-I/SL029
MCV14A-I/SL032
MCV14A-I/SL037
MCV14A-I/SL038
MCV14A-I/SL039
MCV14A-I/SL040
MCV14A-I/SL042
MCV14A-I/SL043
MCV14A-I/SL044
MCV14A-I/SL045
MCV14A-I/SL046
MCV14A-I/SL049
MCV14A-I/SL050
MCV14A-I/SL051
MCV14A-I/SL052

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
MCV14A-I/SL054
MCV14A-I/SL060
MCV14A-I/SL062
MCV14A-I/SL063
MCV14A-I/SL064
MCV14A-I/SL065
MCV14A-I/SL066
MCV14AT-I/SL
MCV14AT-I/SL021
MCV14AT-I/SL025
MCV14AT-I/SL029
MCV14AT-I/SL032
MCV14AT-I/SL035
MCV14AT-I/SL037
MCV14AT-I/SL038
MCV14AT-I/SL039
MCV14AT-I/SL040
MCV14AT-I/SL042
MCV14AT-I/SL043
MCV14AT-I/SL044
MCV14AT-I/SL045
MCV14AT-I/SL046
MCV14AT-I/SL049
MCV14AT-I/SL050
MCV14AT-I/SL051
MCV14AT-I/SL052
MCV14AT-I/SL054
MCV14AT-I/SL055
MCV14AT-I/SL057
MCV14AT-I/SL058
MCV14AT-I/SL060
MCV14AT-I/SL062
MCV14AT-I/SL063
MCV14AT-I/SL064
MCV14AT-I/SL065
MCV14AT-I/SL066
PIC16F505-E/SL
PIC16F505-I/SL
PIC16F505-I/SL023
PIC16F505-I/SL033
PIC16F505-I/SL059
PIC16F505T-E/SL
PIC16F505T-I/SL

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
PIC16F505T-I/SL020
PIC16F505T-I/SL029
PIC16F505T-I/SL033
PIC16F505T-I/SL039
PIC16F505T-I/SL054
PIC16F505T-I/SL055
PIC16F505T-I/SL056
PIC16F505T-I/SL058
PIC16F505T-I/SL059
PIC16F505T-I/SLC03
PIC16F506-E/SL
PIC16F506-I/SL
PIC16F506T-I/SL
PIC16F506T-I/SL021
PIC16F506T-I/SL030
PIC16F506T-I/SL034
PIC16F506T-I/SL039
PIC16F506T-I/SL042
PIC16F506T-I/SL043
PIC16F506T-I/SL044
PIC16F506T-I/SL047
PIC16F526-E/SL
PIC16F526-I/SL
PIC16F526-I/SLC03
PIC16F526-I/SLC04
PIC16F526-I/SLC06
PIC16F526T-I/SL
PIC16F526T-I/SL033
PIC16F526T-I/SL034
PIC16F526T-I/SL053
PIC16F526T-I/SL061
PIC16F526T-I/SLC04
PIC16F526T-I/SLC06
PIC16F610-E/SL
PIC16F610-I/SL
PIC16F610T-I/SL
PIC16F616-E/SL
PIC16F616-E/SL087
PIC16F616-H/SL
PIC16F616-I/SL
PIC16F616-I/SL063
PIC16F616-I/SL068
PIC16F616T-E/SL

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
PIC16F616T-E/SL040
PIC16F616T-E/SL072
PIC16F616T-E/SL083
PIC16F616T-E/SL084
PIC16F616T-E/SL087
PIC16F616T-I/SL
PIC16F616T-I/SL029
PIC16F616T-I/SL033
PIC16F616T-I/SL038
PIC16F616T-I/SL048
PIC16F616T-I/SL050
PIC16F616T-I/SL054
PIC16F616T-I/SL055
PIC16F616T-I/SL063
PIC16F616T-I/SL064
PIC16F616T-I/SL068
PIC16F616T-I/SL069
PIC16F616T-I/SL074
PIC16F616T-I/SL077
PIC16F616T-I/SL086
PIC16F616T-I/SL089
PIC16F616T-I/SL091
PIC16F616T-I/SL092
PIC16F630-C/SL
PIC16F630-E/SL
PIC16F630-I/SL
PIC16F630-I/SL036
PIC16F630-I/SL044
PIC16F630-I/SL045
PIC16F630-I/SLC03
PIC16F630T-C/SL
PIC16F630T-E/SL
PIC16F630T-E/SL072
PIC16F630T-I/SL
PIC16F630T-I/SL026
PIC16F630T-I/SL035
PIC16F630T-I/SL043
PIC16F630T-I/SL053
PIC16F630T-I/SL066
PIC16F630T-I/SL080
PIC16F630T-I/SL081
PIC16F630T-I/SL082
PIC16F636-E/SL

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
PIC16F636-I/SL
PIC16F636T-E/SL
PIC16F636T-I/SL
PIC16F636T-I/SL022
PIC16F676-E/SL
PIC16F676-I/SL
PIC16F676-I/SL045
PIC16F676-I/SL050
PIC16F676-I/SL051
PIC16F676T-C/SL
PIC16F676T-E/SL
PIC16F676T-I/SL
PIC16F676T-I/SL028
PIC16F676T-I/SL038
PIC16F676T-I/SL044
PIC16F676T-I/SL051
PIC16F684-E/SL
PIC16F684-I/SL
PIC16F684-I/SL105
PIC16F684-I/SLC15
PIC16F684-I/SLC17
PIC16F684T-E/SL
PIC16F684T-I/SL
PIC16F684T-I/SL027
PIC16F684T-I/SL028
PIC16F684T-I/SL088
PIC16F684T-I/SL091
PIC16F684T-I/SL094
PIC16F684T-I/SL095
PIC16F684T-I/SL099
PIC16F684T-I/SL105
PIC16F684T-I/SLC15
PIC16F684T-I/SLC17
PIC16F688-E/SL
PIC16F688-I/SL
PIC16F688-I/SL063
PIC16F688T-E/SL
PIC16F688T-E/SL043
PIC16F688T-I/SL
PIC16F688T-I/SL051
PIC16F688T-I/SL053
PIC16F688T-I/SL057
PIC16F688T-I/SL058

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Affected Catalog Part Number (CPN)

KSRA-02KYDI802
Catalog Part Number
PIC16F688T-I/SL063
PIC16F753-E/SL
PIC16F753-I/SL
PIC16F753-I/SLC02
PIC16F753-I/SLPN1
PIC16F753-I/SLSM1
PIC16F753-I/SLSM2
PIC16F753T-I/SL
PIC16F753T-I/SL020
PIC16F753T-I/SLC02
PIC16F753T-I/SLHS2
PIC16F753T-I/SLPN1
PIC16F753T-I/SLSM1
PIC16F753T-I/SLSM2
PIC16HV610-E/SL
PIC16HV610-I/SL
PIC16HV610T-I/SL
PIC16HV616-E/SL
PIC16HV616-I/SL
PIC16HV616T-E/SL
PIC16HV616T-I/SL
PIC16HV753-E/SL
PIC16HV753-I/SL
PIC16HV753T-E/SL
PIC16HV753T-I/SL

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #. KSRA-02KYDI802

Date
April 19, 2017

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of 160K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size.
The selected products of 150K wafer technology available in 14L SOIC package will qualify by similarity at MMT assembly site.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of 160K wafer technology available in 14L SOIC package at MMT assembly site using 95x155 mils lead frame paddle size.The selected products of 150K wafer technology available in 14L SOIC package will qualify by similarity at MMT assembly site.
CN	ES091561-19036
QUAL ID	Q17028
MP CODE	DE0444D3XB04
Part No.	PIC16F688-E/SL
Bonding No.	BDM-001261 Rev. A
CCB No.	2853
<u>Package</u>	
Type	14L SOIC
Package size	150 mils
Die thickness	15 mils
Die size	100.30 x 77.50 mils
<u>Lead Frame</u>	
Paddle size	95 x 155 mils (ASM)
Material	CDA194
Surface	Bare Cu
Process	Stamped
Lead Lock	No
Part Number	10101411
Treatment	BOT
<u>Material</u>	
Epoxy	8390A (Henkel)
Wire	CuPdAu wire 0.8 mil (NMC)
Mold Compound	G600V (Sumitomo)
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-174700447.000	GRSM417321212.100	1707TT2
MMT-174700926.000	GRSM417321212.100	17071KM
MMT-174700929.000	GRSM417321212.100	17072C0

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	
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 System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C and 125°C System: J750			0/693	Pass	

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: + 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.5 grams)		15 (0)	0/15	Pass	See attachment 1 Wire pull & bond shear after Temp Cycle
	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 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)	M2011	30 (0) Wires	0/30		
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30		