Product Change Notification / RMES-04YPFT929

Date:

11-May-2023

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6248 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected PIC18F27Q8x, PIC18F47Q8x, PIC18F16xQ4x, PIC18F26Qxx and PIC18F46Q71 device families available in 20L (.300in) & 40L (.600in) PDIP and 28L (.300in) SPDIP packages assembled at MMT assembly site.

Affected CPNs:

RMES-04YPFT929_Affected_CPN_05112023.pdf
RMES-04YPFT929_Affected_CPN_05112023.csv

Notification Text:

PCN Status: Final Notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the files found in the Affected CPNs section.
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 PIC18F27Q8x, PIC18F47Q8x, PIC18F16xQ4x, PIC18F26Qxx and PIC18F46Q71 device families available in 20L (.300in) & 40L (.600in) PDIP and 28L (.300in) SPDIP packages assembled at MMT assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Microchip Technology Thailand (Branch) / (MMT)	Microchip Technology Thailand (Branch) / (MMT)
Wire Material	Au	CuPdAu
Die Attach Material	CRM-1064L	CRM-1064L
Molding Compound Material	GE800	GE800
Lead-Frame Material	CDA194	CDA194

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying palladium coated copper with gold flash (CuPdAu) bond wire.

Change Implementation Status: In Progress

Estimated First Ship Date: May 30,2023 (date code: 2322)

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

Time Table Summary:

	May 2023				
Workweek	18	19	20	21	22
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:May 11, 2023: Issued final notification. Attached is the Qualification Report. Provided

estimated first ship date to be on May 30, 2023.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_RMES-04YPFT929_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.

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Affected Catalog Part Numbers (CPN)

PIC18F27Q83-E/SP
PIC18F27Q84-E/SP
PIC18F47Q83-E/P
PIC18F47Q84-E/P
PIC18F27Q83-I/SP
PIC18F27Q84-I/SP
PIC18F47Q83-I/P
PIC18F47Q84-I/P
PIC18F16Q41-E/P
PIC18F14Q41-E/P
PIC18F15Q41-E/P
PIC18F16Q40-E/P
PIC18F16Q41-I/P
PIC18F14Q41-I/P
PIC18F15Q41-I/P
PIC18F16Q40-I/P
PIC18F26Q83-E/SP
PIC18F26Q84-E/SP
PIC18F26Q83-I/SP
PIC18F26Q84-I/SP
PIC18F26Q43-E/SP
PIC18F26Q43-I/SP
PIC18F26Q71-E/SP
PIC18F46Q71-E/P
PIC18F26Q71-I/SP
PIC18F46Q71-I/P

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-04YPFT929

Date:
May 05, 2023

Qualification of CuPdAu bond wire for selected products of 250K and 290K wafer technology available in 8L,14L, 20L, 40L PDIP and 28L SPDIP packages at MMT. The selected PIC18F27Q8x, PIC18F47Q8x, PIC18F16xQ4x, PIC18F26Qxx and PIC18F46Q71 device families available in 20L (.300in) & 40L (.600in) PDIP and 28L (.300in) SPDIP packages assembled at MMT assembly site will be qualify by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of CuPdAu bond wire for selected products of 250K and 290K wafer technology available in 8L,14L, 20L, 40L PDIP and 28L SPDIP packages at MMT. The selected PIC18F27Q8x, PIC18F47Q8x, PIC18F16xQ4x, PIC18F26Qxx and PIC18F46Q71 device families available in 20L (.300in) & 40L (.600in) PDIP and 28L (.300in) SPDIP packages assembled at MMT assembly site will be qualify by similarity (QBS).
CN	ES097910
QUAL ID	Q17076 Rev. A
MP CODE	MVAE14S2XFX6
Part No.	PIC18F45K40-E/P
Bonding No.	BDM-001281 Rev. A
CCB No.	2873 and 6248
Package	
Type	40L PDIP
Package size	600 mils
Lead Frame	
Paddle size	200 x 200mils
Material	CDA194
Surface	Ag Spot Plated
Process	Stamped
Lead Lock	No
Part Number	10104001
Treatment	None
Material	
Epoxy	CRM-1064L
Wire	CuPdAu
Mold Compound	GE800
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MMT -180400753 .000	G RSM 417341630.A00	1716 PM 0
MMT -180400943 .000	G RSM 417341630.A00	1716 SY 2
MMT -180400944 .000	G RSM 417341630.A00	1716U 2P

Result [X] Pass [ ] Fail [ ] _____

40L PDIP (.600”) assembled by MTAI pass reliability test per QCI-39000.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Electrical Test	**Electrical Test:**+25°C,85°C,125°C and-40°C System: J750	JESD22-A113	693(0)	693		Good Devices
Temp Cycle	**Stress Condition:** (Standard) 65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		
	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		
	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
HAST	**Stress Condition:** (Standard) +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X **Electrical Test:**+25°C,85°C,125°C System: J750	JESD22-A110	231(0)	231 0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test:**+ 25°C,85°C,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)	JESD22 -B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	