Product Change Notification / LIAL-29JCGD899

Date:

26-Jan-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4439 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 8L DFN (4x4x0.9mm) package at MMT assembly site

Affected CPNs:

LIAL-29JCGD899_Affected_CPN_01262021.pdf
LIAL-29JCGD899_Affected_CPN_01262021.csv

Notification Text:

PCN Status:
Final notification

PCN Type:
Manufacturing Change

Microchip Parts Affected:
Please open one of the icons found in the Affected CPNs section above.

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 available in 8L DFN (4x4x0.9mm) package at MMT assembly site

Pre Change:
Using gold (Au) bond wire

Post Change:
Using gold (Au) or palladium coated copper with gold flash (CuPdAu) bond wire

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	Microchip Technology Thailand (MMT)	Microchip Technology Thailand (MMT)	
Wire material	Au	Au	CuPdAu
Die attach material	3280	3280	
Molding compound material	G700LTD	G700LTD	
Lead frame material	A194	A194	

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 at MMT assembly site.

Change Implementation Status:
In Progress

Estimated First Ship Date:
February 01, 2021 (date code: 2106)

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

Time Table Summary:

	November 2020				→	**January 2021**					**February 2021**			
Workweek	45	46	47	48		01	02	03	04	05	06	07	08	09
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:

November 5, 2020: Issued initial notification.
January 26, 2021: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on February 01, 2021.

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

Attachments:

PCN_LIAL-29JCGD899_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.

Affected Catalog Part Numbers (CPN)

PIC12F675-E/MD
PIC12F675-I/MD
PIC12F675T-E/MD
PIC12F629-E/MD
PIC12F629-I/MD
PIC12F629T-I/MD
PIC12F629T-E/MD
PIC12F683-E/MD
PIC12F683-I/MD
PIC12F683T-I/MD
PIC12F635-I/MD
PIC12F635T-I/MD070
PIC12F635T-I/MD073
PIC12F615-E/MD
PIC12F615-I/MD
PIC12F615-H/MD
PIC12F615T-I/MD029
PIC12F615T-I/MD
PIC12HV615-I/MD
PIC12F609-E/MD
PIC12F609-I/MD
PIC12F609T-I/MD

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN: LIAL-29JCGD899

Date
January 07, 2021

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 8L DFN (4x4x0.9mm) package at MMT assembly site.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 8L DFN (4x4x0.9mm) package at MMT assembly site.
CN	ES349645
QUAL ID	R2000836 Rev. A
MP CODE	DE0244M8XAXF
Part No.	PIC12F683-E/MD
Bonding No.	BDM-002739 Rev. A
CCB No.	4439
Package	
Type	8L DFN
Package size	4x4x0.9 mm
Lead Frame	
Paddle size	114 x 146 mils
Material	A194
Surface	Ag selective plated on paddle
Process	Etched
Lead Lock	Yes
Part Number	10100845
Material	
Epoxy	3280
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Sn

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-213001957.000	TMPE219226894.210	2043G35
MMT-218001958.000	TMPE219226894.210	2043G36
MMT-213001569.000	TMPE219226894.210	2043CYA

Result [X] Pass [ ] Fail [ ] _____

8L DFN (4x4x0.9 mm) assembled by MMT 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-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
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	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. Svstem: 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:** -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
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)		15 (0) 15 (0)	0/15 0/15	Pass 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
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 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
	Stress Condition: +130°C/85%RH,192 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X			231		
	Electrical Test: +25°C and 125°C System: J750		231(0)	0/231	Pass	

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
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Bond Strength **Data Assembly**	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	