Product Change Notification - KSRA-25CZMD564

Date:

03 Oct 2019

Product Category:

8-bit Microcontrollers

Affected CPNs:

Notification subject:

CCB 3135 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products for 250K wafer technology available in 40L UQFN package at NSEB assembly site

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 in selected products for 250K wafer technology available in 40L UQFN (5x5x0.5mm) package at NSEB assembly site.

Pre Change:

Using gold (Au) bond wire material.

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire material.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	UTAC Thai Limited LTD (NSEB)	UTAC Thai Limited LTD (NSEB)
Wire material	Au Wire	CuPdAu Wire
Die attach material	8600	8600
Molding compound material	G700LTD	G700LTD
Lead frame material	EFTEC-64T	EFTEC-64T

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:
To improve manufacturability and qualify CuPdAu bond wire at NSEB assembly site.

Change Implementation Status:
In Progress

Estimated First Ship Date:
November 3, 2019 (date code: 1945)

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

Time Table Summary:

	October 2017					-->	October 2019					November 2019			
Workweek	40	41	42	43	44		40	41	42	43	44	45	46	47	48
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:
October 27, 2017: Issued initial notification.
October 3, 2019: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on November 3, 2019

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-25CZMD564_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)

PIC16F18875-E/MV
PIC16LF18875-E/MV
PIC16F18875-I/MV
PIC16LF18875-I/MV
PIC16F18875T-I/MV
PIC16LF18875T-I/MV
PIC16F18876-E/MV
PIC16LF18876-E/MV
PIC16F18876-I/MV
PIC16LF18876-I/MV
PIC16F18876T-I/MV
PIC16LF18876T-I/MV
PIC16F18877-E/MV
PIC16LF18877-E/MV
PIC16F18877-I/MV
PIC16LF18877-I/MV
PIC16F18877T-I/MV
PIC16LF18877T-I/MV
PIC16F18877T-E/MV

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: KSRA-25CZMD564

Date
August 02, 2019

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products for 250K wafer technology available in 40L UQFN (5x5x0.5mm) package at NSEB assembly site

MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products for 250K wafer technology available in 40L UQFN (5x5x0.5mm) package at NSEB assembly site
CN	ES294778
QUAL ID	Q19072
Qual rev	A
CCB No.	3135
MP CODE	MFAP14S5XFX7
Part No.	PIC16F18877-E/MV
Bonding No.	BDM-001556 Rev. A
Package	
Type	40L UQFN
Package size	5 x 5 x 0.5 mm
Die thickness	5 mils
Die size	104.5 x 106.8 mils
Lead Frame	
Paddle size	153 x 153 mils
Material	G700LTD
Surface	Micro etched
Process	Etched
Lead Lock	Yes
Part Number	FU0169
Material	
Epoxy	8600
Wire	CuPdAu
Mold Compound	G700LTD
Plating Composition	Matte Tin

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB200400005.000	TMPE218425671.300	1917VMK
NSEB200400006.000	TMPE218425671.300	1917VMM
NSEB200400007.000	TMPE218425671.300	1917VMP

Result [X] Pass [ ] Fail [ ] ____________________

40L UQFN (5x5x0.5 mm) assembled by NSEB pass reliability test per AEC-Q006 standard. 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	198	0/198	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test :**+25°C,85°C,125°C and -40°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			693		
	System: Vitronics Soltec MR1243					
	Electrical Test :+25°C, 85°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: + 85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	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)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	**Stress Condition:** +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
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: +130°C/85%RH, 192 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X			231		
	Electrical Test :+25°C, 85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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	
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 500 hrs System: SHEL LAB	JESD22-A103		135		45 units / lot
	Electrical Test :+25°C, 85°C and 125°C System: J750		135(0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: SHEL LAB			135		
	Electrical Test :+25°C, 85°C and 125°C System: J750		135(0)	0/135	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	