



Product Change Notification - JAON-30NOKK232

Date:

20 Nov 2018

Product Category:

8-bit Microcontrollers; 16-Bit - Microcontrollers and Digital Signal Controllers

Affected CPNs:**Notification subject:**

CCB 3028.001 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 28L QFN (6x6x0.9mm) 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 of the 0.25um TSMC wafer technology available in 28L QFN (6x6x0.9mm) package at NSEB assembly site.

Pre Change:

Using gold (Au) bond wire

Post Change:

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

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	NSEB Assembly Site	NSEB Assembly Site
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 by qualifying CuPdAu bond wire at NSEB assembly site.

Change Implementation Status:

In Progress

Estimated First Ship Date:

January 20, 2019 (date code: 1903)

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



Time Table Summary:

	November 2018					->	January 2019				
Workweek	44	45	46	47	48		01	02	03	04	05
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.

PCN_JAON-30NOKK232_Qual_Report: Qualifies by similarity (QBS) selected products of the 0.25umTSMC wafer technology available in 28L QFN (6x6x0.9mm) using palladium coated copper with gold flash (CuPdAu) bond wire.

PCN_KSRA-11PKSB895_Qual_Report: Qualifies by similarity (QBS) selected products of the 0.25um TSMC wafer technology available in 28L QFN (6x6x0.9mm) based on a same package type, same package body size and same lead frame EFTEC-64T.

Revision History:

November 20, 2018: Issued final notification.

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_JAON-30NOKK232_Qual_Report.pdf](#)

[PCN_KSRA-11PKSB895_Qual_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: JAON-30NOKK232

Date
April 04, 2018

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly site. The selected products of the 0.25um TSMC wafer technology available in 28L QFN (6x6x0.9mm) package will qualify by similarity (QBS).



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.25um TSMC wafer technology available in 44L QFN package at NSEB assembly site. The selected products of the 0.25um TSMC wafer technology available in 28L QFN (6x6x0.9mm) package will qualify by similarity (QBS).
CN	ES160942-24048
QUAL ID	Q18012
MP CODE	YGAS1YT3XCKB
Part No.	DSPIC33FJ32MC304T-E/ML
Bonding No.	BDM-001459
CCB No	3028 and CCB 3028.001
<u>Package</u>	
Type	44L QFN
Package size	8x8x0.9 mm
Die thickness	11 mils
Die size	176.40 x 184.10 mils
<u>Lead Frame</u>	
Paddle size	272 x 272 mils
Material	C194
Surface	Ag on lead only
Process	Etched
Lead Lock	Yes
Part Number	FR1139
Treatment	Micro- etched
<u>Material</u>	
Epoxy	8600 Conductive
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB183800646.000	TC03918156578.100	1750ADP
NSEB183800649.000	TC03918156578.100	1750ADW
NSEB183800651.000	TC03918156578.100	1750AE4

Result

Pass Fail _____

44L QFN (8x8x0.9mm) assembled by UTL (NSEB) 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	198	0/198	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C,85°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 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C,85°C and 125°C System: J750			0/693	Pass	
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	
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.6 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
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
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	Electrical Test : +25°C ,85°C and 125°C System: J750		45(0)	0/45	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B -102E	22 (0)	22 22 0/22	Pass	
Bond Strength Data Assembly	Wire Pull (> 4.0 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>10.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: KSRA-11PKSB895

Date
April 07, 2017

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 150K (DLM) wafer technologies available in 28L QFN package at NSEB assembly site.

Purpose Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 150K (DLM) wafer technologies available in 28L QFN package at NSEB assembly site.

CN ES092466
QUAL ID Q17021
MP CODE C5BS14M4XA00
Part No. MCP23017-E/ML
Bonding No. BDM-001186 Rev. A
CCB No. 2771

Package

Type 28L QFN
Package size 6x6x0.9 mm
Die thickness 11 mils
Die size 60.30 x 60.30 mils

Lead Frame

Paddle size 173 x 173 mils
Material EFTEC-64T
Surface Ag on lead
Process Etched
Lead Lock Yes
Part Number FR0931
Treatment In-house roughening

Material

Epoxy 8600
Wire CuPdAu wire
Mold Compound G700LTD
Plating Composition Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB174300956.000	TMPE217234066.100	1703MD8
NSEB174300957.000	TMPE217234066.100	1703MDC
NSEB174400019.000	TMPE217234066.100	1704MDD

Result

Pass

Fail

28L QFN (6x6x0.9mm) assembled by UTL (NSEB) 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	198	0/198	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 and 125°C System: J750	JESD22-A113	693(0)	693 693 693 0/693	 Pass	Good Devices
Temp Cycle	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Electrical Test: + 85°C and 125°C System: J750	JESD22-A104		231 231(0)	 Pass	Parts had been pre-conditioned at 260°C
HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X Electrical Test: + 25°C,85°C and 125°C System: J750	JESD22-A110		231 231(0)	 Pass	Parts had been pre-conditioned at 260°C 77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	Electrical Test: + 25°C,85°C and 125°C System: J750		45(0)	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>3.0 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	

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Affected Catalog Part Numbers(CPN)

DSPIC33FJ12GP202-E/ML
DSPIC33FJ12GP202-I/ML
DSPIC33FJ12GP202T-E/ML
DSPIC33FJ12GP202T-I/ML
DSPIC33FJ12MC202-E/ML
DSPIC33FJ12MC202-I/ML
DSPIC33FJ12MC202T-E/ML
DSPIC33FJ12MC202T-I/ML
DSPIC33FJ16GP102-E/ML
DSPIC33FJ16GP102-H/ML
DSPIC33FJ16GP102-I/ML
DSPIC33FJ16GP102T-E/ML
DSPIC33FJ16GP102T-I/ML
DSPIC33FJ16MC102-E/ML
DSPIC33FJ16MC102-H/ML
DSPIC33FJ16MC102-I/ML
DSPIC33FJ16MC102T-E/ML
DSPIC33FJ16MC102T-I/ML
DSPIC33FJ32MC102-I/ML
PIC18F24J10-I/ML
PIC18F24J10T-I/ML
PIC18F24J11-I/ML
PIC18F24J11T-I/ML
PIC18F24J50-I/ML
PIC18F24J50T-I/ML
PIC18F25J10-I/ML
PIC18F25J10-I/ML020
PIC18F25J10T-I/ML
PIC18F25J10T-I/ML020
PIC18F25J11-I/ML
PIC18F25J11T-I/ML
PIC18F25J50-I/ML
PIC18F25J50T-I/ML
PIC18F26J11-I/ML
PIC18F26J11T-I/ML
PIC18F26J13-I/ML
PIC18F26J13T-I/ML
PIC18F26J50-I/ML
PIC18F26J50T-I/ML
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PIC18LF25J11-I/ML
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PIC18LF26J11T-I/ML
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PIC18LF26J13T-I/ML
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PIC18LF26J50T-I/ML
PIC18LF26J53-I/ML
PIC18LF26J53T-I/ML
PIC18LF27J13-I/ML
PIC18LF27J13T-I/ML
PIC18LF27J53-I/ML
PIC18LF27J53T-I/ML
PIC24FJ16GA002-E/ML
PIC24FJ16GA002-I/ML
PIC24FJ16GA002-I/MLB4
PIC24FJ16GA002-I/MLC10
PIC24FJ16GA002T-E/ML
PIC24FJ16GA002T-I/ML
PIC24FJ16GA002T-I/ML023
PIC24FJ16GA002T-I/MLC06
PIC24FJ16MC102-E/ML
PIC24FJ16MC102-H/ML
PIC24FJ16MC102-I/ML
PIC24FJ16MC102T-E/ML
PIC24FJ16MC102T-I/ML
PIC24FJ32GA002-E/ML
PIC24FJ32GA002-I/ML
PIC24FJ32GA002T-E/ML
PIC24FJ32GA002T-I/ML
PIC24FJ32GA002T-I/ML030
PIC24FJ32GA002T-I/ML031
PIC24FJ32GA002T-I/MLC06
PIC24FJ32GA002T-I/MLC11

PIC24FJ32GA102-E/ML
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PIC24FJ32GA102T-I/ML
PIC24FJ32GB002-I/ML
PIC24FJ32GB002T-I/ML
PIC24FJ32GB002T-I/MLC01
PIC24FJ32MC102-E/ML
PIC24FJ32MC102-I/ML
PIC24FJ32MC102T-I/ML
PIC24FJ48GA002-I/ML
PIC24FJ48GA002-I/MLB
PIC24FJ48GA002T-I/ML
PIC24FJ48GA002T-I/MLB
PIC24FJ64GA002-E/ML
PIC24FJ64GA002-I/ML
PIC24FJ64GA002-I/ML022
PIC24FJ64GA002T-E/ML
PIC24FJ64GA002T-I/ML
PIC24FJ64GA002T-I/ML022
PIC24FJ64GA002T-I/MLC03
PIC24FJ64GA102-I/ML
PIC24FJ64GA102T-I/ML
PIC24FJ64GB002-I/ML
PIC24FJ64GB002T-I/ML
PIC24HJ12GP202-E/ML
PIC24HJ12GP202-I/ML