



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 0.25um TSMC 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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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)

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
PIC18F26J53-I/ML
PIC18F26J53T-I/ML
PIC18F27J13-I/ML
PIC18F27J13T-I/ML
PIC18F27J53-I/ML
PIC18F27J53T-I/ML
PIC18LF24J10-I/ML

JAON-30NOKK232 - 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.

PIC18LF24J11-I/ML
PIC18LF24J11T-I/ML
PIC18LF24J50-I/ML
PIC18LF24J50T-I/ML
PIC18LF25J10-I/ML
PIC18LF25J10T-I/ML
PIC18LF25J11-I/ML
PIC18LF25J11T-I/ML
PIC18LF25J50-I/ML
PIC18LF25J50T-I/ML
PIC18LF26J11-I/ML
PIC18LF26J11T-I/ML
PIC18LF26J13-I/ML
PIC18LF26J13T-I/ML
PIC18LF26J50-I/ML
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
PIC24FJ32GA102-I/ML
PIC24FJ32GA102T-I/ML
PIC24FJ32GB002-I/ML
PIC24FJ32GB002T-I/ML
PIC24FJ32GB002T-I/MLC01

JAON-30NOKK232 - 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.

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



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 | |