



Product Change Notification - GBNG-28KTVF982

Date:

12 Feb 2020

Product Category:

16-Bit - Microcontrollers and Digital Signal Controllers; 32-bit Microcontrollers; Capacitive Touch Sensors

Affected CPNs:**Notification subject:**

CCB 3300.003 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 64L and 44L TQFP (10x10x1mm) package at MTAI 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 for selected products available in 64L and 44L TQFP (10x10x1mm) package at MTAI 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 | Microchip Technology Thailand HQ (MTAI) | Microchip Technology Thailand HQ (MTAI) |
| Wire material | Au | CuPdAu |
| Die attach material | 3280 | 3280 |
| Molding compound material | G700HA | G700HA |
| Lead frame material | C7025 | C7025 |

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve productivity by qualifying palladium coated copper with gold flash (CuPdAu) bond wire

Change Implementation Status:

In Progress

Estimated First Ship Date:

March 15, 2020 (date code: 2012)

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



post change parts.

Time Table Summary:

| | February 2020 | | | | | March 2020 | | | | |
|-------------------------------|------------------|----|----|----|----|---------------|----|----|----|----|
| | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| Workweek | | | | | | | | | | |
| 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:

February 12, 2020: Issued final notification. Attached the qualification report and provided estimated first ship date to be on March 15, 2020.

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_GBNG-28KTVF982_Qual_Report.pdf](#)

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

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: GBNG-28KTVF982

Date

Nov 01,2018

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 100L TQFP package at MTAI assembly site. The selected products available in 64L and 44L TQFP package will qualify by similarity (QBS).



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products available in 100L TQFP package at MTAI assembly site. The selected products available in 64L and 44L TQFP package will qualify by similarity (QBS).

CCB No. 3300 and 3300.003
CN ES221251
QUAL ID Q18129 Rev. A
MP CODE TRAE19V7XAB4
Part No. PIC32MX350F256L-V/PT
Bonding No. BDE-004919 REV: 02

Package

Type 100L TQFP
Package size 12 x 12 x 1 mm

Lead Frame

Paddle size 240 x 240 mils
Material C7025
Surface Bare Cu on Paddle
Process Stamped
Lead Lock No
Part Number 10110002
Treatment Roughening

Material

Epoxy 3280
Wire CuPdAu
Mold Compound G700HA
Plating Composition Matte Tin



MICROCHIP
PACKAGE QUALIFICATION REPORT

Manufacturing Information

| Assembly Lot No. | Wafer Lot No. | Date Code |
|-------------------|-------------------|-----------|
| MTAI191502991.000 | TC11918374924.000 | 1828MJK |
| MTAI191502992.000 | TC11918374924.120 | 1828MJM |
| MTAI191504051.000 | TC11918374924.120 | 1828TYW |

Result

Pass Fail _____

100L TQFP assembled by MTAI 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 |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------|
| 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-020E) | IPC/JEDEC C J-STD-020E | 135 | 0/135 | Pass | |
| <u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1) | Electrical Test :+25°C,105°C and -40°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 105°C System: J750 | JESD22-A113 | 693(0) | 693 693 693 0/693 | Pass | Good Devices |
| Temp Cycle | Stress Condition: -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Electrical Test: + 105°C System: J750 Stress Condition: -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H Electrical Test: + 105°C System: J750 Bond Strength: Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams) | JESD22-A104 | 231(0) 231(0) 5(0) Units 15 (0) | 231 0/231 231 0/231 0/5 0/15 | Pass Pass Pass 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: +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 Electrical Test: + 25°C System J750 | | 231(0) | 0/231 | Pass | |
| HAST | Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.6,1.98 Volts System: HAST 6000X | JESD22-A110 | | 231 | | Parts had been pre-conditioned at 260°C |
| | Electrical Test: + 25°C and 105°C System: J750 | | 231(0) | 0/231 | Pass | 77 units / lot |
| | Stress Condition: +130°C/85%RH,192 hrs. Bias Volt: 3.6,1.98 Volts System: HAST 6000X Electrical Test: + 25°C and 105°C System: J750 | | 231(0) | 0/231 | Pass | |
| High Temperature Storage Life | Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB | JESD22-A103 | | 45 | | 45 units |
| | Electrical Test :+25°C and 105°C System: J750 | | 45(0) | 0/45 | Pass | |
| 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 | |

GBNG-28KTVF982 - CCB 3300.003 Final Notice: Qualification of palladium coated copper with gold flash (Cu

Affected Catalog Part Numbers(CPN)

PIC24EP128GP204T-I/PT037
DSPIC33EP128MC204T-I/PTA3
DSPIC33EP128MC204T-I/PT
PIC24EP128GP204T-I/PT
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DSPIC33EP128MC206T-E/PT
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DSPIC33EP256MC204-E/PT
PIC24EP256GP204-E/PT
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HA3200DT-I/PT
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PIC32MX120F064HT-V/PT
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PIC32MX230F128HT-I/PT
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PIC32MX550F256HT-I/PT
PIC32MX530F128HT-I/PT
PIC32MX570F512HT-I/PT
PIC32MX150F256H-50I/PT
PIC32MX170F512H-50I/PT
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DSPIC33EP512MC504-I/PT
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PIC24EP512MC204-I/PT
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PIC24EP512MC204-H/PT
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HA4584-I/PT
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HA4584T-I/PT
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PIC24EP128GP204-I/PT035
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