



Product Change Notification / JAON-14HHMO797

Date:

23-Oct-2020

Product Category:

Clock and Timing - Oscillators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3957 Final Notice: Qualification of new bill of materials (BOM) for selected Micrel products available in 6L VDFN (7x5x0.9mm) package at NSEB assembly site.

Affected CPNs:

[JAON-14HHMO797_Affected_CPN_10232020.pdf](#)

[JAON-14HHMO797_Affected_CPN_10232020.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 new bill of materials (BOM) for selected Micrel products available in 6L VDFN (7x5x0.9mm) package at NSEB assembly site

Pre Change:Assembled at NSEB using 8200T as die attach#1 and die attach#2 material, G770HCD molding compound, and Q3-6646 die coat.

Post Change:Assembled at NSEB using HR-5104 die attach# 1 material, 2200D die attach# 2 material, G700LTD molding compound, and JCR6109 die coat.

Pre and Post Change Summary:

| | Pre Change | Post Change |
|---------------------------|--------------------------|--------------------------|
| Assembly Site | UTAC Thai Limited (NSEB) | UTAC Thai Limited (NSEB) |
| Lead Frame Material | A194 | A194 |
| Bond Wire Material | Au | Au |
| Die Attach # 1 Material | 8200T | HR-5104 |
| Die Attach # 2 Material | 8200T | 2200D |
| Molding compound material | G770HCD | G700LTD |
| Die Coat | Q3-6646 | JCR6109 |

Impacts to Data Sheet:None.

Change Impact:None.

Reason for Change:To improve manufacturability by qualifying a new die attach material, molding compound, and die coat.

Change Implementation Status:In Progress

Estimated First Ship Date:November 23, 2020 (date code: 2048)

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

Time Table Summary:

| | November 2019 | | | | | --> | November 2020 | | | | | |
|--------------------------|---------------|---|---|---|---|-----|---------------|---|---|---|---|---|
| | 4 | 4 | 4 | 4 | 4 | | 4 | 4 | 4 | 4 | 4 | |
| Workweek | 4 | 5 | 6 | 7 | 8 | | 4 | 5 | 6 | 7 | 8 | 9 |
| Initial PCN Issue Date | | | | X | | | | | | | | |
| Qual Report Availability | | | | | | | | | X | | | |
| Final PCN Issue 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 20, 2019:** Issued initial notification.**November 26, 2019:** Re-issued initial notification. Corrected the qualification completion date from January 2019 to January 2020.**October 23, 2020:** Issued final notification. Attached qualification report. Provided estimated first ship date to be on November 23, 2020.

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

Attachments:

[PCN_JAON-14HHMO797_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.



MICROCHIP

QUALIFICATION REPORT SUMMARY

PCN #: JAON-14HHMO797

Date:
October 09, 2020

Qualification of new bill of materials (BOM) for selected Micrel products available in 6L VDFN (7x5x0.9mm) package at NSEB assembly site.



MICROCHIP PACKAGE QUALIFICATION REPORT

| | |
|----------------------------|---|
| Purpose | Qualification of new bill of materials (BOM) for selected Micrel products available in 6L VDFN (7x5x0.9mm) package at NSEB assembly site. |
| CCB # | 3957 |
| CN | ES346879 |
| QUAL ID | R2000511 Rev. A |
| MP CODE | 3610Q5H8A003 |
| Part No. | D50A-M3 |
| Bonding No. | BDE-005469 Rev. 04 |
| <u>Package</u> | |
| Type | 6L VDFN |
| Package size | 7.0x5.0x0.9 mm |
| <u>Lead Frame</u> | |
| Paddle size | 79 x 118 mils |
| Material | A194 |
| Pad Plating | Roughen NiPdAu |
| Process | Etched |
| Lead Lock | Yes |
| Part Number | FR0504 |
| <u>Material</u> | |
| Epoxy | HR-5104 and 2200D |
| Wire | Au |
| Mold Compound | G700LTD |
| Die Coat | JCR6109 |
| Plating Composition | NiPdAu |



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

| Assembly Lot No. | Wafer Lot No. | Date Code |
|-------------------|-------------------|-----------|
| NSEB203000613.000 | TC03920065299.000 | 1943528 |
| NSEB203100142.000 | TC03920065299.000 | 194452S |
| NSEB203100149.000 | TC03920065299.000 | 1944538 |

Result

Pass Fail _____

6L VDFN (7.0x5.0x0.9 mm) assembled by 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-020E standard.

PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard / Method | Qty. (Acc.) | Def/SS | Result | Remarks |
|---|--|--|----------------|--|---|-------------------------|
| <u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1) | <p>Electrical Test: +25°C System: Tester: D10, Handler: AET55V8/16</p> <p>Bake 150°C, 24 hrs System: Oven chamber</p> <p>85°C/85%RH Moisture Soak 168 hrs. System: Soak chamber</p> <p>3x Convection-Reflow 265°C max System: Heat convection reflow</p> <p>Electrical Test: +25°C System: Tester: D10, Handler: AET55V8/16</p> | <p>JESD22- A113</p> <p>JIP/ IPC/JEDE C J-STD- 020E</p> | <p>693 (0)</p> | <p>693</p> <p>693</p> <p>693</p> <p>693</p> <p>0/693</p> | <p></p> <p></p> <p></p> <p></p> <p>Pass</p> | <p>Good Devices</p> |

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: Hot and cold chamber | JESD22- A104 | | 231 | | Parts had been pre-conditioned at 260°C |
| | Electrical Test: +125°C System: Tester: D10, Handler: AET55V8/V16 | | 231(0) | 0/231 | Pass | 77 units / lot |
| | Bond Strength: Wire Pull (> 3.00 grams) | | 30 (0) | 0/30 | Pass | |
| UNBIASED-HAST | Stress Condition: +130°C/85%RH, 96 hrs. System: Hot and moisture chamber | JESD22- A118 | | 231 | | Parts had been pre-conditioned at 260°C |
| | Electrical Test: +25°C System: Tester: D10, Handler: AET55V8/V16 | | 231(0) | 0/231 | Pass | 77 units / lot |
| HAST | Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.3 Volts System: HAST 6000X | JESD22- A110 | | 231 | | Parts had been pre-conditioned at 260°C |
| | Electrical Test: +25°C and 125°C System: Tester: D10, Handler: AET55V8/16 | | 231(0) | 0/231 | Pass | 77 units / lot |

PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|--------------------------------------|---|---------------------|----------------|------------|--------|----------|
| High Temperature Storage Life | Stress Condition: Bake 150°C, 1008 hrs System: Oven chamber | JESD22-A103 | | 45 | | 45 units |
| | Electrical Test: +25°C +125°C System: Tester: D10, Handler: AET55V8/V16 | | 45(0) | 0/45 | Pass | |
| Solderability Temp 245°C | Steam Aging: Temp 93°C,8Hrs | J-STD-002 | 22 (0) | 22 | | |
| | Solder Dipping: Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 Visual Inspection: External Visual Inspection | | | 22 0/22 | Pass | |
| Physical Dimensions | Physical Dimension, 10 units from 1 lot | JESD22-B100/B108 | 30(0) Units | 0/30 | Pass | |
| Bond Strength Data Assembly | Wire Pull (> 3.00 grams) | Mil.Std. 883-2011 | 30 (0) Wires | 0/30 | Pass | |
| | Bond Shear (>13.00 grams) | CDF-AEC-Q100-001 | 30 (0) bonds | 0/30 | Pass | |

Affected Catalog Part Numbers (CPN)

DSC1123AL1-148.5000
DSC1103AL1-100.0000
DSC1103AE2-212.5000
DSC1124AE5-065.0000
DSC1101AE5-032.0000
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