# Product Change Notification - JAON-22XFVI227

**Date:**

09 Jan 2020

**Product Category:**

Others; 32-bit Microcontrollers; Touchscreen Controllers

**Affected CPNs:**

**Notification subject:**

CCB 3871 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K wafer technology available in 100L TQFP (14x14x1.0 mm) package.

**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 MMT as an additional assembly site for selected Atmel products of 58.85K wafer technology available in 100L TQFP (14x14x1.0 mm) package.

**Pre Change:**

Assembled at ASE assembly site using Au bond wire, CRM-1076WA die attach, G631H molding compound, C7025 lead frame material or assembled at ANAP using AuPd bond wire, 3230 die attach, G700 mold compound and C194 lead frame material.

**Post Change:**

Assembled at ASE assembly site using Au bond wire, CRM-1076WA die attach, G631H molding compound, C7025 lead frame material or assembled at ANAP using AuPd bond wire, 3230 die attach, G700 mold compound and C194 lead frame material or assembled at MMT using Au bond wire, 3280 die attach material, G700 mold compound and C7025 lead frame material.

**Pre and Post Change Summary:**

| | **Pre Change** | | **Post Change** | | |
|---|---|---|---|---|---|
| **Assembly Site** | Advanced Semiconductor Engineering, Inc. (ASE) | Amkor Technology Philippine (P1/P2), INC. (ANAP) | Advanced Semiconductor Engineering, Inc. (ASE) | Amkor Technology Philippine (P1/P2), INC. (ANAP) | Microchip Technology Thailand (MMT) |
| **Wire material** | Au | AuPd | Au | AuPd | Au |
| **Die attach material** | CRM-1076WA | 3230 | CRM-1076WA | 3230 | 3280 |
| **Molding compound material** | G631H | G700 | G631H | G700 | G700 |
| **Lead frame material** | C7025 | C194 | C7025 | C194 | C7025 |
| **MSL Level** | MSL 3 | MSL 3 | MSL 3 | MSL 3 | MSL 1 |
| **Tray Info** | Bakeable Tray | Bakeable Tray | Bakeable Tray | Bakeable Tray | Non-Bakeable Tray |

| | See pre and post change comparison |
|---|---|

**Impacts to Data Sheet:**
None
**Change Impact:**
None
**Reason for Change:**
To improve manufacturability and on-time delivery by qualifying MMT as an additional assembly site.
**Change Implementation Status:**
In Progress
**Estimated First Ship Date:**
February 9, 2020 (date code: 2007)
NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.
**Time Table Summary:**

| | July 2019 | | | | | --> | January 2020 | | | | | February 2020 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Workweek | 27 | 28 | 29 | 30 | 31 | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| 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:**
**July 22, 2019:** Issued initial notification.
**August 13, 2019:** Re-issued initial notification to update the attached pre and post comparison file to correct the post site from MTAI to MMT
**January 9, 2020:** Issued final notification. Attached the qualification report. Provided estimated first ship date to be on February 9, 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_JAON-22XFVI227_Qual_Report.pdf
PCN_JAON-22XFVI227_TRAY PRE AND POST CHANGE_CCB 3871_rev1.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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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)

AT32UC3C1128C-AUR
AT32UC3C1128C-AUT
AT32UC3C1256C-AUR
AT32UC3C1256C-AURA0
AT32UC3C1256C-AUT
AT32UC3C1256C-AZR
AT32UC3C1256C-AZT
AT32UC3C1512C-AUR
AT32UC3C1512C-AUT
AT32UC3C1512C-AZR
AT32UC3C1512C-AZT
AT32UC3C164C-AUR
AT32UC3C164C-AUT
ATMXT3432S-M-AT
ATMXT3432S-M-ATR
ATMXT540E-AB
ATMXT540E-ABR
ATMXT540E-AT
ATMXT540E-ATR
ATMXT768E-AB
ATMXT768E-ABR
ATMXT768E-AT
ATMXT768E-ATR
ATMXT768EC06-AB
ATMXT768EC06-ABR
ATUC3T-ATR

# QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

**PCN #: JAON-22XFVI227**

**Date**
**December 13, 2019**

**Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K wafer technology available in 100L TQFP (14x14x1.0 mm) package. This is an automotive Q100 Grade 1 qualification.**

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# Package Qualification Report

**Purpose:** Qualification of MMT as an additional assembly site for selected Atmel products of 58.85K wafer technology available in 100L TQFP (14x14x1.0 mm) package. This is an automotive Q100 Grade 1 qualification.

| | | |
|---|---|---|
| **Misc.** | **Assembly site** | MMT |
| | **BD Number** | BDM-001880/B |
| | **MP Code (MPC)** | 58U94YE5XC02 |
| | **Part Number (CPN)** | AT32UC3C1256C-AZT |
| | **MSL information** | MSL-1 |
| | **Assembly Shipping Media (T/R, Tube/Tray)** | Tray (Non-bakeable) |
| | **Base Quantity Multiple (BQM)** | 90units/tray |
| | **Reliability Site** | MPHL |
| | **Qual ID** | QTP3860 (Rev. A) |
| | **CCB No.** | 3871 |
| **Lead-Frame** | **Paddle size** | 280x280 mils |
| | **Material** | C7025 |
| | **DAP Surface Prep** | Bare Cu |
| | **Treatment** | BOT |
| | **Process** | Stamped |
| | **Lead-lock** | No |
| | **Part Number** | 10110005 |
| | **Lead Plating** | Matte Tin |
| | **Strip Size** | 70x250mm |
| | **Strip Density** | 30 units/strip |
| **Bond Wire** | **Material** | Au |
| **Die Attach** | **Part Number** | 3280 |
| | **Conductive** | Yes |
| **MC** | **Part Number** | G700HA |
| **PKG** | **PKG Type** | TQFP |
| | **Pin/Ball Count** | 100 |
| | **PKG width/size** | 14x14x1.0mm |

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# Package Qualification Report

## Manufacturing Information

| Assembly Lot No. | Wafer Lot No. | Date Code |
|---|---|---|
| MMT-201601434.000 | U8CD919500169.000 | 19299DV |
| MMT-201601435.000 | U8CD919500169.000 | 19299DW |
| MMT-201700437.000 | U8CD919500169.000 | 19309DY |

**Result** ☑ Pass ☐ Fail ☐ ____________________

58U94 MCT32 Atmel product on 100L TQFP 14x14mm assembled at MMT pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified 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.<br>System: Climats Excal 5423-HE<br>3x Convection-Reflow 265°C max<br>System: Mancorp CR.5000F<br><br>( IPC/JEDEC J-STD-020E) | IPC/JEDE | 45 units per lot | Lot 1<br>0/45<br><br>Lot 2<br>0/45<br><br>Lot 3<br>0/45 | Pass<br><br><br>Pass<br><br><br>Pass | |
| **Precondition Prior Perform Reliability Tests (At MSL Level 1)** | **Electrical Test :**25°C<br>System: Magnum<br><br>Bake 150°C, 24 hrs<br>System: HERAEUS<br><br>85°C/85%RH Moisture Soak 168 hrs.<br>System: Climats Excal 5423-HE<br><br>3x Convection-Reflow 265°C max<br>System: Mancorp CR.5000F<br><br>**Electrical Test :** 25°C<br>System: Magnum | JESD22-A113 | 231 units per lot | Lot 1<br>0/231<br><br>Lot 2<br>0/231<br><br>Lot 3<br>0/231 | Pass<br><br><br>Pass<br><br><br>Pass | Good Devices |

# PACKAGE QUALIFICATION REPORT

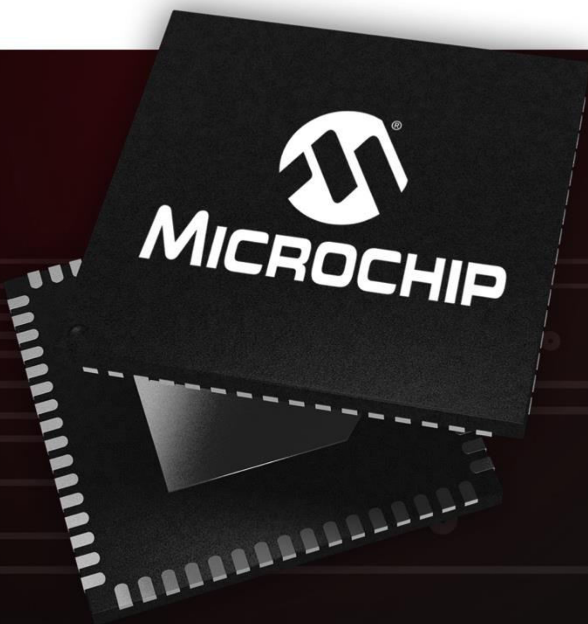
| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **UNBIASED HAST** | **Stress Condition:** (Standard)<br>+ 130°C, 85%RH, 96 hrs.<br>System: HIRAYAMA HASTEST PC-422R8<br><br>**Electrical Test:** 25°C<br>System: Magnum | JESD22-A118 | 77 units per lot | Lot 1 0/77<br>Lot 2 0/77<br>Lot 3 0/77 | Pass<br>Pass<br>Pass | Parts had been pre-conditioned at 260°C |
| **HAST** | **Stress Condition:** (Standard)<br>+ 130°C, 85%RH, 96 hrs. VOLTS=5.75V<br>System: HIRAYAMA HASTEST PC-422R8<br><br>**Electrical Test:** 25°C /130°C<br>System: Magnum | JESD22-A110 | 77 units per lot | Lot 1 0/77<br>Lot 2 0/77<br>Lot 3 0/77 | Pass<br>Pass<br>Pass | Parts had been pre-conditioned at 260°C |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS | Result | Remarks |
|---|---|---|---|---|---|---|
| **Temp Cycle** | **Stress Condition:** (Standard)<br>-65°C to +150°C, 500 Cycles<br>System : Votsch VTS$^2$7012<br><br>**Electrical Test:** 25°C /130°C<br>System: Magnum | JESD22-A104 | 77 units per lot | Lot 1<br>0/77<br><br>Lot 2<br>0/77<br><br>Lot 3<br>0/77 | Pass<br><br>Pass<br><br>Pass | Parts had been pre-conditioned at 260°C |
| | **Bond Strength:**<br>Wire Pull (> 1.75 grams)<br>Bond *Shear (>12.6 grams)*<br>System: Dage | | 5 units per lot | Lot 1, 0/5<br><br>Lot 2, 0/5<br><br>Lot 3, 0/5 | Pass<br><br>Pass<br><br>Pass | |
| **High Temperature Storage Life** | **Stress Condition:**<br>Bake 175°C, 500 hrs<br>System: HERAEUS<br><br>**Electrical Test:** 25°C /130°C<br>System: Magnum | JESD22-A103 | 45 units per lot | Lot 1<br>0/45<br><br>Lot 2<br>0/45<br><br>Lot 3<br>0/45 | Pass<br><br>Pass<br><br>Pass | |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **Bond Strength, 0 Hour** | **System:** Dage<br>Wire Pull (> 1.75 grams)<br>Bond *Shear (>12.6 grams)* | | 5 units per lot | Lot 1 0/5<br>Lot 2 0/5<br>Lot 3 0/5 | Pass<br>Pass<br>Pass | |
| **Physical Dimension** | Physical Dimension,<br>30 units from 3 lots | JESD22 -B100/B108 | 10 units per lot | Lot 1 0/10<br>Lot 2 0/10<br>Lot 3 0/10 | Pass<br>Pass<br>Pass | |
| **Solderability** | **Bake:**<br>Temp 155°C,4Hrs<br>System: Oven<br>Solder Bath: Temp.245°C<br>Solder material: SAC305<br>Visual Inspection: External Visual Inspection | J-STD-002D | 22 units from 1 lot | 0/22 | Pass | |

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***PCN # JAON-22XFVI227***

***CCB 3871 Tray Pre and Post Changes Summary***

# Tray Comparison

| PRE CHANGE | POST CHANGE |
| --- | --- |
| **ASE/ANAP** | **MMT** |

MSL 3 Tray Bakeable

Tray dimension: No change
Total Tray Length: 322.6mm
Total Tray Width:135.9mm
Total tray thickness:7.62mm

MSL 1 Tray Non-Bakeable

Tray dimension: No Change
Total Tray Length: 322.6mm
Total Tray Width:135.9mm
Total tray thickness:7.62mm