# Product Change Notification - LIAL-25ZCPA706

**Date:**
12 Feb 2019
**Product Category:**
8-bit Microcontrollers
**Affected CPNs:**

**Notification subject:**
CCB 3257 Final Notice: Qualification of MTAI as an additional assembly site for selected Atmel ATTINYXX non-automotive products in 35.4k and 35.5K wafer technology available in 8L SOIJ 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 MTAI as an additional assembly site for selected Atmel non-automotive products available in 8L SOIJ package.

**Pre Change:**
Assembled at LPI using palladium coated copper wire with gold flash (CuPdAu) bond wire, CRM-1033BF die attach material

**Post Change:**
Assembled at LPI using palladium coated copper wire with gold flash (CuPdAu) bond wire, CRM-1033BF die attach material or assembled at MTAI using gold (Au) bond wire and 8390A die attach material

**Pre and Post Change Summary:**

| | Pre Change | Post Change | |
|---|---|---|---|
| **Assembly Site** | Lingsen Precision Industires, LTD. (LPI) | Lingsen Precision Industires, LTD. (LPI) | Microchip Technology Thailand HQ (MTAI) |
| **Wire material** | CuPdAu | CuPdAu | Au |
| **Die attach material** | CRM-1033BF | CRM-1033BF | 8390A |
| **Molding compound material** | G600 | G600 | G600 |
| **Lead frame material** | C194 | C194 | C194 |

**Impacts to Data Sheet:**

None

**Change Impact:**
None

**Reason for Change:**
To improve on-time delivery performance by qualifying MTAI as additional assembly site.

**Change Implementation Status:**
In Progress

**Estimated First Ship Date:**
March 12, 2019 (date code: 1911)

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

**Time Table Summary:**

| | February 2018 | | | | | -> | February 2019 | | | | | March 2019 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Workweek | 05 | 06 | 07 | 08 | 09 | | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| 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:**
**March 1, 2018:** Issued initial notification.
**March 21, 2018:** Re-issued initial notification to update the post change and affected CPN list and to revise this initial notification to be issued to all affected customers.
**February 12, 2019:** Issued final notification. Attached the qualification report. Provided estimated first ship date to be on March 12, 2019.

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_LIAL-25ZCPA706_QUAL REPORT.pdf

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

**Terms and Conditions:**

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about 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)

ATTINY13-20SQ
ATTINY13-20SQR
ATTINY13-20SU
ATTINY13-20SU188
ATTINY13-20SU365
ATTINY13-20SUR
ATTINY13-20SUR365
ATTINY13A-SF
ATTINY13A-SFR
ATTINY13A-SFRA5
ATTINY13A-SN
ATTINY13A-SNR
ATTINY13A-SU
ATTINY13A-SU523
ATTINY13A-SUR
ATTINY13A-SURA2
ATTINY13A-SURA4
ATTINY13V-10SU
ATTINY13V-10SUR
ATTINY25-20SN
ATTINY25-20SNR
ATTINY25-20SU
ATTINY25-20SUR
ATTINY25V-10SN
ATTINY25V-10SNR
ATTINY25V-10SU
ATTINY25V-10SUR
ATTINY45-20SU
ATTINY45-20SUR
ATTINY45V-10SU
ATTINY45V-10SUR
ATTINY85-20SF
ATTINY85-20SFR
ATTINY85-20SU
ATTINY85-20SUR
ATTINY85V-10SU
ATTINY85V-10SUR

# QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

**PCN#: LIAL-25ZCPA706**

**Date**
**September 19,2018**

**Qualification of MTAI as an additional assembly site for selected Atmel ATTINYXX non-automotive products in 35.4k and 35.5K wafer technology available in 8L SOIJ package.**

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# Package Qualification Report

**Purpose:** Qualification of MTAI as an additional assembly site for selected Atmel ATTINYXX non-automotive products in 35.4k and 35.5K wafer technology available in 8L SOIJ package.

**CCB No.:** 3257

**Quad ID:** QTP3390

**Revision:** A

| | | |
|---|---|---|
| **Miscellaneous** | **Assembly site** | MTAI |
| | **BD Number** | BDM-001676 rev. A |
| | **MP Code (MPC)** | 355C4YC3XC01 |
| | **Part Number (CPN)** | ATTiny45-15SZ |
| **Lead-Frame** | **Paddle size** | 140x160 mils |
| | **Material** | CDA194 |
| | **Surface** | Bare Cu paddle |
| | **Treatment** | Roughening |
| | **Process** | Stamped |
| | **Lead-lock** | No |
| | **Part Number** | 10100840 |
| | **Lead Plating** | Matte Tin |
| **Bond Wire** | **Material** | Au |
| **Die Attach** | **Part Number** | 8390A |
| | **Conductive** | Yes |
| **Mold Compound** | **Part Number** | G600 |
| **PKG** | **PKG Type** | SOIJ |
| | **Pin/Ball Count** | 8 |
| | **PKG width/size** | 208 mils |
| **Die** | **Die Thickness** | 15 mils |
| | **Die Size** | 90.0 x 88.0 mils |
| **MSL** | | MSL1/260 |

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# Package Qualification Report

**Manufacturing Information**

| Assembly Lot No. | Wafer lot No. | Date Code |
|---|---|---|
| MTAI184804030.000 | MCSO518466665.110 | 1808A68 |
| MTAI184802538.000 | MCSO518466665.110 | 180827Y |
| MTAI184804035.000 | MCSO518466665.110 | 1808BC6 |

**Result:** [X] Pass [ ] Fail [ ] _____

Atmel 355C4 using 0.9 mil Au wire for 8L SOIJ at MTAI is qualified at Moisture/ Reflow Sensitivity Classification Level 1 per IPC/JEDEC J-STD-020E standard. Red Spot observed on 1 unit at die attach paddle and inner lead but unit is electrically Passing.

| PACKAGE QUALIFICATION REPORT | | | | | | |
|---|---|---|---|---|---|---|
| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS | Result | Remarks |
| **Precondition Prior Perform Reliability Tests (At MSL Level 1)** | **Electrical Test:** +25°C, +130°C<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 260°C max<br>System: Mancorp CR.5000F<br><br>**Electrical Test:** +25°C, +130°C | JESD22-A113<br><br>IPC/JEDEC J-STD-020D | 810(0)<br><br>810<br><br>810<br><br>810 | 0/810<br><br>0/810 | Passed | Good Devices |
| **Temp Cycle** | **Stress Condition:** (Standard)<br>65°C to +150°C, 500 Cycles<br>System: VOTSCH VT 7012 S2<br><br>**Electrical Test:** +25°C, + 130°C | JESD22-A104 | 252<br><br>252(0) | 0/252 | Passed | Parts had been preconditioned at 260°C |
| | **Bond Strength:**<br>Wire Pull (> 6.00 grams)<br>Bond Shear (>22.00 grams) | | 15(0) | 0/15 | Passed | |
| **UNBIASED-HAST** | **Stress Condition:** (Standard)<br>+130°C/85%RH, 96 hrs.<br>System: HIRAYAMA HASTEST PC-422R8<br><br>**Electrical Test:** +25°C, + 130°C | JESD22-A118 | 255<br><br>255(0) | 0/255 | Passed | Parts had been pre-conditioned at 260°C |
| **HAST** | **Stress Condition:** (Standard)<br>+130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts<br>System: HIRAYAMA HASTEST PC-422R8<br><br>**Electrical Test:** +25°C, + 130°C | JESD22-A110 | 255<br><br>255(0) | 0/255 | Passed | Parts had been pre-conditioned at 260°C |
| **High Temperature Storage Life** | **Stress Condition:**<br>Bake 175°C, 504 hrs<br>System: HERAEUS<br><br>**Electrical Test** :+25°C ,+130°C | JESD22-A103 | 60<br><br>60(0) | 0/60 | Passed | 60 units |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Solderability Temp 245°C** | **Bake:** Temp 155°C,4Hrs<br>System:Oven<br>Solder Bath: Temp.245°C<br>Solder material: SnPb<br>Visual Inspection: External Visual Inspection | J-STD-002 | 15 (0) | 0/15 | Passed | Performed at MPHIL |
| **Physical Dimensions** | Physical Dimension,<br>10 units from 3 lot | JESD22-B100/B108 | 32(0) Units | 0/32 | Passed | |
| **Bond Strength Data Assembly** | Wire Pull (> 6.00 grams) | M2011.8 MIL-STD-883 | 30(0) Wires | 4.94 | Passed | |
| **Bond Strength Data Assembly** | Bond Shear (>22.00 grams) | M2011.8 MIL-STD-883 | 30(0) bonds | 2.04 | Passed | |