# Product Change Notification - JAON-27SGKS288

**Date:**

03 Jan 2019

**Product Category:**

8-bit Microcontrollers

**Affected CPNs:**

**Notification subject:**

CCB 3656, 3656.001 and 3656.002 Initial Notice: Qualification of GTK as a new assembly site for selected Atmel products of 35.5K wafer technology available in 24L SOIC package using palladium coated copper with gold flash (CuPdAu) bond wire.

**Notification text:**

**PCN Status:**

Initial 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 GTK as a new assembly site for selected Atmel products of 35.5K wafer technology available in 24L SOIC package using palladium coated copper with gold flash (CuPdAu) bond wire.

**Pre-Change:**

Assembled at ANAP using palladium coated copper (PdCu) or palladium coated gold (AuPd) bond wire, 8290 die attach and G700LS or G600 mold compound material.

**Post Change:**

Assembled at GTK using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900GC die attach and G600F mold compound material.

**Pre and Post Change Summary:**

| | Pre-Change | | Post Change |
|---|---|---|---|
| **Assembly Site** | Amkor Technology Philippine (P1/P2), Inc. (ANAP) | | Greatek Electronic Inc. (GTK) |
| **Wire material** | PdCu | AuPd | CuPdAu |
| **Die attach material** | 8290 | | EN-4900GC |
| **Molding compound material** | G700LS | G600 | G600F |
| **Lead frame material** | A194 | | A194 |

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve on-time delivery performance by qualifying GTK as a new assembly site.

**Change Implementation Status:**

In Progress

**Estimated Qualification Completion Date:**

April 2019

Note: Please be advised the qualification completion times may be extended because of unforeseen

business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

**Time Table Summary:**

| | January 2019 | | | | | --> | April 2019 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Workweek | 01 | 02 | 03 | 04 | 05 | | 14 | 15 | 16 | 17 | 18 |
| Initial PCN Issue Date | X | | | | | | | | | | |
| Qual Report Availability | | | | | | | | | X | | |
| Final PCN Issue Date | | | | | | | | | X | | |

**Method to Identify Change:**

Traceability code.

**Qualification Plan:**

Please open the attachments included with this PCN labeled as PCN_#_Qual Plan.

**Revision History:**

**January 3, 2019:** Issued initial 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-27SGKS288_Qual_Plan.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.

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Affected Catalog Part Numbers (CPN)

AT90PWM1-16SU
AT90PWM216-16SU
AT90PWM216-16SUR
AT90PWM2-16SQ
AT90PWM2-16SQR
AT90PWM2B-16SU
AT90PWM2B-16SUR

# QUALIFICATION PLAN

**PCN #: JAON-27SGKS288**

**Date**
**December 12, 2018**

**Qualification of GTK as a new assembly site for selected Atmel products of 35.5K wafer technology available in 24L SOIC package using palladium coated copper with gold flash (CuPdAu) bond wire.**

**Title:** **Qualification of GTK as a new assembly site for selected Atmel products of 35.5K wafer technology available in 24L SOIC package using palladium coated copper with gold flash (CuPdAu) bond wire.**

**CCB No.** **3656, 3656.001 and 3656.002**

| | | |
|---|---|---|
| Misc. | Assembly site | GTK |
| | BD Number | BDM-002032A (GTK1811552CB) |
| | MP Code (MPC) | 355TA7K3XC02 |
| | Part Number (CPN) | AT90PWM216-16SU |
| Lead-Frame | Paddle size | 190x220 mil |
| | Material | A194 |
| | DAP Surface Prep (Spot/Ring/Double ring) | Double Ring |
| | Treatment (roughened/ brown oxide(BOT) /micro-etched/ none) | Non roughened |
| | Process (stamped/Etched) | Stamped |
| | Lead-lock (Y/N) | Yes |
| | Part Number | 11-0224W-007 |
| | Lead Plating | Matte Sn |
| | Strip Size | 213.36 x 58.42 mm |
| | Strip Density | 4 x 10 |
| Bond Wire | Material | CuPdAu |
| Die Attach | Part Number | EN-4900GC |
| | Conductive | Yes |
| MC | Part Number | G600F |
| PKG | PKG Type | SOIC |
| | Pin/Ball Count | 24 |
| | PKG width/size | 300 mils |
| Die | Die Thickness | 15 mils |
| | Die Size | 115x169 mils |
| | Fab Process (site) | 35.5K (MCSO6) |
| Assembly Shipping | Ship in strip / Singulated | Singulated |
| | Tray / Tube / Canister | Tube |
| | Tube Length | 20 inches |
| | Units per tube | 31 |
| MSL | | MSL 3 / 260 |

| Test Name | Conditions | Sample Size | Min. Qty of Spares per Lot (should be properly marked) | Qty of Lots | Total Units | Fail Accept Qty | Est. Dur. Days | Test Site | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|
| Standard Pb-free Solderability | J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing.<br><br>Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages. | 22 | 5 | 1 | 27 | > 95% lead coverage | 5 | MPHIL | Standard Pb-free solderability is the requirement.<br><br>SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes. |
| Wire Bond Pull - WBP | Mil. Std. 883-2011 | 5 | 0 | 1 | 5 | 0 fails after TC | 5 | GTK | 30 bonds from a minimum of 5 devices. |
| Wire Bond Shear - WBS | CDF-AEC-Q100-001 | 5 | 0 | 1 | 5 | 0 | 5 | GTK | 30 bonds from a minimum of 5 devices. |
| Physical Dimensions | Measure per JESD22 B100 and B108 | 10 | 0 | 3 | 30 | 0 | 5 | MPHIL | |
| External Visual | Mil. Std. 883-2009/2010 | All devices prior to submission for qualification testing | 0 | 3 | ALL | 0 | 5 | MPHIL | |
| HTSL (High Temp Storage Life) | +175 C for 504 hours or 150°C for 1008 hrs. Electrical test pre and post stress at +25C and hot temp. | 45 | 5 | 1 | 50 | 0 | 10 | MPHIL | Must be in progress at time of package release to production, but completion is not required for release to production. |
| Preconditioning - Required for surface mount devices | +150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C.<br>MSL3 – 260'C | 231 | 15 | 3 | 738 | 0 | 15 | MPHIL | Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test. |
| HAST | +130°C/85% RH for 96 hours Electrical test pre and post stress at +25°C and hot temp. | 77 | 5 | 3 | 246 | 0 | 10 | MPHIL | Spares should be properly identified. Use the parts which have gone through Pre-conditioning. |

| Test Name | Conditions | Sample Size | Min. Qty of Spares per Lot (should be properly marked) | Qty of Lots | Total Units | Fail Accept Qty | Est. Dur. Days | Test Site | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|
| Unbiased HAST | '+130°C/85% RH for 96 hrs Electrical test pre and post stress at +25°C | 77 | 5 | 3 | 246 | 0 | 10 | MPHIL | Spares should be properly identified. Use the parts which have gone through Pre-conditioning. |
| Temp Cycle | -65°C to +150°C for 500 cycles and 100cycles. Electrical test pre and post stress at hot temp; 3-gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress. | 77 | 5 | 3 | 246 | 0 | 15 | MPHIL | Spares should be properly identified. Use the parts which have gone through Pre-conditioning. |