# Final Product/Process Change Notification

Document #:FPCN25507Z
Issue Date:11 Oct 2023

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| **Title of Change:** | Qualification of onsemi ISMF Fab (Malaysia) for Small Signal Transistor housed in SOT723 and SC74 package |
| **Proposed Changed Material First Ship Date:** | 01 Jun 2024 or earlier if approved by customer |
| **Current Material Last Order Date:** | N/A<br>*Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability*. |
| **Current Material Last Delivery Date:** | N/A<br>*The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory* |
| **Product Category:** | Active components – Discrete components |
| **Contact information:** | Contact your local onsemi Sales Office or farrah.omar@onsemi.com |
| **PCN Samples Contact:** | Contact your local onsemi Sales Office to place sample order.<br>Sample requests are to be submitted no later than 45 days after publication of this change notification.<br>Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements. |
| **Sample Availability Date:** | 31 Oct 2023 |
| **PPAP Availability Date:** | 31 Oct 2023 |
| **Additional Reliability Data:** | Contact your local onsemi Sales Office or ChangKit.Mok@onsemi.com |
| **Type of Notification:** | This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements.<br>onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com. |

**Change Category**

| **Category** | **Type of Change** |
|---|---|
| Process - Wafer Production | New / change of metallization (specifically chip frontside),<br>Move of all or part of wafer fab to a different location/site/subcontractor |
| Process - Assembly | Change of lead frame finishing material / area (internal),<br>Change of wire bonding |

**Description and Purpose:**

This is the Final Notification by onsemi notifying customers of its plan to qualify small signal bipolar junction transistor devices at onsemi ISMF fab (Malaysia) housed in SC74 and SOT723 package. onsemi ISMF fab has been an existing qualified manufacturing site for onsemi which is certified with IATF16949:2016. onsemi ISMF fab qualification includes of changing top metal from AlSiCu to AlSi + TiW for devices in SC74 package.

In addition to this, onsemi Leshan (China) is making changes to the leadframe plating area from Ag plated to Cu plated as well as changing Au wire to Cu wire for devices in SC74 package.

| | From | To |
|---|---|---|
| **Fab Site** | JS Foundry, Japan | onsemi ISMF, Malaysia |
| **Top Metal** | SOT723: No change<br>SC74: AlSiCu | SOT723: No change<br>SC74: AlSi + TiW |
| **LeadFrame** | SOT723: No change<br>SC74: Ag plated L/F | SOT723: No change<br>SC74: Cu plated L/F |
| **Bond Wire** | SOT723: No change<br>SC74:1.3mil Au wire | SOT723: No change<br>SC74: 1.3mil Cu wire |

There is no product marking change as a result of this change.

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| **Reason / Motivation for Change:** | Supply disruption,Capacity improvement,Cost improvement |
| **Anticipated impact on fit, form, function, reliability, product safety or manufacturability:** | The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded.<br><br>No anticipated impacts. |

**Sites Affected:**

| **onsemi Sites** | **External Foundry/Subcon Sites** |
|---|---|
| onsemi, ISMF Malaysia | None |

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| **Marking of Parts/ Traceability of Change:** | Product marking follows onsemi marking format / Changed material can be identified by lot code |

**Reliability Data Summary:**

QV DEVICE NAME: NSV60101DMR6T1G
RMS: L88094
PACKAGE: SC-74

| Test | Specification | Condition | Interval | Results |
|---|---|---|---|---|
| High Temperature Reverse Bias | JESD22-A108 | Ta=150°C, 100% max rated V | 1008 hrs | 0/231 |
| High Temperature Storage Life | JESD22-A103 | Ta=150°C | 1008 hrs | 0/231 |
| Preconditioning | J-STD-020 JESD-A113 | MSL 1 @ 260°C, Pre IOL, TC, uHAST, HAST for surface mount pkgs only | | 0/924 |
| Intermittent Operating Life | MIL-STD-750 (M1037) AEC-Q101 | Ta=+25°C, delta Tj=100°C On/off =2 min | 15,000 cyc | 0/231 |
| Temperature Cycling | JESD22-A104 | Ta= -55°C to +150°C | 1000 cyc | 0/231 |
| Highly Accelerated Stress Test | JESD22-A110 | 110°C, 85% RH, 3psig, bias | 264 hrs | 0/231 |
| Unbiased Highly Accelerated Stress Test | JESD22-A118 | 130°C, 85% RH, 18.8psig, unbiased | 96 hrs | 0/231 |
| Resistance to Solder Heat | JESD22- B106 | Ta = 265°C, 10 sec Required for through hole devices only | | 0/30 |

QV DEVICE NAME: NSVMMBT5401M3T5G
RMS: L88095
PACKAGE: SOT-723

| Test | Specification | Condition | Interval | Results |
|---|---|---|---|---|
| High Temperature Reverse Bias | JESD22-A108 | Ta=150°C, 100% max rated V | 1008 hrs | 0/231 |
| High Temperature Storage Life | JESD22-A103 | Ta=150°C | 1008 hrs | 0/231 |
| Preconditioning | J-STD-020 JESD-A113 | MSL 1 @ 260°C, Pre IOL, TC, uHAST, HAST for surface mount pkgs only | | 0/924 |
| Intermittent Operating Life | MIL-STD-750 (M1037) AEC-Q101 | Ta=+25°C, delta Tj=100°C On/off =2 min | 15,000 cyc | 0/231 |
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**Refer to the attached AEC1 Pager for more details.**

***To view attachments:***
*1. Download pdf copy of the PCN to your computer*
*2. Open the downloaded pdf copy of the PCN*
*3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachm ent field*
*4. Then click on the attached file.*

**Electrical Characteristics Summary:**

Electrical characteristics are not impacted.

**List of Affected Parts:**

***Note:*** *Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal**.*

| Current Part Number | New Part Number | Qualification Vehicle |
|---|---|---|
| NSVMMBT5401M3T5G | NA | NSVMMBT5401M3T5G |
| NSV60101DMR6T1G | NA | NSV60101DMR6T1G |
| NSV60101DMR6T2G | NA | NSV60101DMR6T1G |