



Final Product/Process Change Notification

Document #:FPCN20930ZE

Issue Date: 30 Jun 2022

| Title of Change: | Qualification of Power Schottky Top Metal And Back Metal Change for SMC Package. | | | | | | | | | |
|--|--|------------|------|----|---------------------------|------------|------------|----------------------------|----------|----------|
| Proposed Changed Material First Ship Date: | 15 Mar 2023 or earlier if approved by customer | | | | | | | | | |
| Current Material Last Order Date: | 14 Dec 2022 <i>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.</i> | | | | | | | | | |
| Current Material Last Delivery Date: | 14 Mar 2023 <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i> | | | | | | | | | |
| Product Category: | Active components – Discrete components | | | | | | | | | |
| Contact information: | Contact your local onsemi Sales Office or Danh.Trinh@onsemi.com | | | | | | | | | |
| PCN Samples Contact: | Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements. | | | | | | | | | |
| Sample Availability Date: | 15 Sep 2022 | | | | | | | | | |
| PPAP Availability Date: | 01 Aug 2022 | | | | | | | | | |
| Additional Reliability Data: | Contact your local onsemi Sales Office or CheanChing.Sim@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. 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 | | | | | | | | | |
| Bare Die | New / change of backside metallization, New / change of frontside metallization | | | | | | | | | |
| Description and Purpose: | | | | | | | | | | |
| This is a Final Product Change Notification announcing to customers that ON Semiconductor is qualifying Power Schottky top metal and back metal change with die shrink on selected automotive qualified Orderable Part Numbers (OPNs) listed in this FPCN. | | | | | | | | | | |
| <table><thead><tr><th>Item</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>Die top metal composition</td><td>TiW/NiV/Au</td><td>TiW/NiV/Ag</td></tr><tr><td>Die back metal composition</td><td>Cr/Ni/Au</td><td>Ti/Ni/Ag</td></tr></tbody></table> | | Item | From | To | Die top metal composition | TiW/NiV/Au | TiW/NiV/Ag | Die back metal composition | Cr/Ni/Au | Ti/Ni/Ag |
| Item | From | To | | | | | | | | |
| Die top metal composition | TiW/NiV/Au | TiW/NiV/Ag | | | | | | | | |
| Die back metal composition | Cr/Ni/Au | Ti/Ni/Ag | | | | | | | | |
| The change will affect to Schottky SMC Package at its assembly sites. Products had gone thru reliability testing as per automotive requirements and it's proven that device performances are not affected. | | | | | | | | | | |
| There is no product marking change as a result of this change. | | | | | | | | | | |

| Reason / Motivation for Change: | Process/Materials Change | | | |
|--|--|---|-----------|--------|
| Anticipated impact on fit, form, function, reliability, product safety or manufacturability: | <p>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.</p> <p>No anticipated impacts.</p> | | | |
| Sites Affected: | | | | |
| onsemi Sites | | External Foundry/Subcon Sites | | |
| onsemi, ISMF Malaysia | | None | | |
| Marking of Parts/ Traceability of Change: | Clean date code will be advised upon of request. | | | |
| Reliability Data Summary: | | | | |
| QV DEVICE NAME: NRVBS4201T3G (Schottky Rectifier) RMS: V79613 PACKAGE: SMC | | | | |
| Test | Specification | Condition | Interval | Result |
| HTSL | JESD22-A103 | Ta = 150 °C | 1008 hrs | 0/231 |
| IOL | MIL-STD-750 (M1037) AEC-Q101 | Ta = +25°C, deltaTj = 100°C max, Ton = Toff = 2min | 15000 cyc | 0/231 |
| TC | JESD22-A104 | Ta = -65°C to +150°C | 1000 cyc | 0/231 |
| AC | JESD22-A102 | 121°C, 100% RH, 15psig, unbiased | 96 hrs | 0/231 |
| H3TRB | JESD22-A101 | Ta = 85°C, RH = 85%, bias = 100V max | 1008 hrs | 0/231 |
| HTRB | JESD22-A108 | Ta = 90 °C, bias = 100% of rated V | 1008 hrs | 0/231 |
| PC | J-STD-020 JESD-A113 | MSL 1 @ 260 °C | | 0/924 |
| RSH | JESD22- B106 | Ta = 265°C, 10 sec | | 0/90 |
| SD | JSTD002 | Ta = 245°C, 10 sec | | 0/45 |
| <p>NOTE: AEC-1pager is attached.</p> <p><i>To view attachments:</i></p> <ol style="list-style-type: none"> 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 Attachment field 4. Then click on the attached file. | | | | |
| Electrical Characteristics Summary: | | | | |
| Electrical characteristics are not impacted. | | | | |



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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 |
|---------------------|-----------------|-----------------------|
| NRVBS4201T3G | N/A | NRVBS4201T3G |
| NRVBS540T3G | N/A | NRVBS4201T3G |
| NRVBS3100T3G | N/A | NRVBS4201T3G |
| SBR58340T3G | N/A | NRVBS4201T3G |