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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Title of Change:</b>                                                                                                                                                                                                                                                                                                                                                                                            | Add V-notch Lead frame to Improve Delamination on SOD323 at ON Semiconductor, Leshan, China factory                                                                                                                                                                                                                                                                                                                                                                                                                                |                                        |
| <b>Proposed first ship date:</b>                                                                                                                                                                                                                                                                                                                                                                                   | 29 June 2018 or earlier after customer approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |
| <b>Contact information:</b>                                                                                                                                                                                                                                                                                                                                                                                        | Contact your local ON Semiconductor Sales Office or <Coleen.Long@onsemi.com>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |
| <b>Samples:</b>                                                                                                                                                                                                                                                                                                                                                                                                    | Contact your local ON Semiconductor Sales Office                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                        |
| <b>Additional Reliability Data:</b>                                                                                                                                                                                                                                                                                                                                                                                | Contact your local ON Semiconductor Sales Office or <Rui. Zhang@onsemi.com>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                        |
| <b>Type of notification:</b>                                                                                                                                                                                                                                                                                                                                                                                       | This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change.<br>ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <PCN.Support@onsemi.com>.                                                                                                                                                                                                  |                                        |
| <b>Change Part Identification:</b>                                                                                                                                                                                                                                                                                                                                                                                 | At the expiration of this FPCN devices will be produced with V-notch Lead frame at ON Semiconductor's existing Leshan facility. New products will have a Date Code of WW30, 2018 or greater.                                                                                                                                                                                                                                                                                                                                       |                                        |
| <b>Change category:</b>                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> Wafer Fab Change <input checked="" type="checkbox"/> Assembly Change <input type="checkbox"/> Test Change <input checked="" type="checkbox"/> Other <u>Lead Frame Design Change</u>                                                                                                                                                                                                                                                                                                                       |                                        |
| <b>Change Sub-Category(s):</b>                                                                                                                                                                                                                                                                                                                                                                                     | <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Manufacturing Site Change/Addition<br/> <input type="checkbox"/> Manufacturing Process Change         </div> <div> <input checked="" type="checkbox"/> Material Change<br/> <input type="checkbox"/> Product specific change         </div> <div> <input type="checkbox"/> Datasheet/Product Doc change<br/> <input type="checkbox"/> Shipping/Packaging/Marking<br/> <input type="checkbox"/> Other: <u>Add V-notch</u> </div> </div> |                                        |
| <b>Sites Affected:</b>                                                                                                                                                                                                                                                                                                                                                                                             | ON Semiconductor Sites:<br>ON Leshan, China                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | External Foundry/Subcon Sites:<br>None |
| <b>Description and Purpose:</b><br><br>ON Semiconductor is notifying customer of its use of V-notch Lead frame for SOD323 devices at ON Semiconductor's Leshan, China factory.<br><br>Upon the expiration of this PCN, devices will be built with V-notch Lead frame at the same site. Datasheet specifications and product electrical performance remain unchanged. Reliability Qualification has been performed. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |
| <b>Material to be changed</b>                                                                                                                                                                                                                                                                                                                                                                                      | <b>Before Change Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>After Change Description</b>        |
| Lead Frame                                                                                                                                                                                                                                                                                                                                                                                                         | Non V-notch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | With V-notch                           |



## Reliability Data Summary:

QV DEVICE NAME SZMM3Z18VST1G/BAS16HT1G  
 PACKAGE: SOD323

| Test | Specification                      | Condition                                                           | Interval                    | Results       |
|------|------------------------------------|---------------------------------------------------------------------|-----------------------------|---------------|
| HTRB | JESD22-A108                        | Ta= <u>150</u> °C, <u>100</u> % max rated V                         | <u>1008 hrs</u>             | 0/ <u>240</u> |
| HTSL | JESD22-A103                        | Ta= <u>150</u> °C                                                   | <u>1008 hrs</u>             | 0/ <u>240</u> |
| IOL  | MIL-STD-750<br>(M1037)<br>AEC-Q101 | Ta= <u>+25</u> °C, delta Tj= <u>100</u> °C<br>On/off = <u>2</u> min | <u>30000 cys</u>            | 0/ <u>240</u> |
| TC   | JESD22-A104                        | Ta= - <u>65</u> °C to + <u>150</u> °C                               | <u>2000 cys</u>             | 0/ <u>240</u> |
| HAST | JESD22-A110                        | 130°C, 85% RH, 18.8psig, bias                                       | <u>192 hrs</u>              | 0/ <u>240</u> |
| AC   | JESD22-A102                        | Ta = 121°C, P= 15 PSIG, RH =<br>100%, 192 Hours                     | <u>192 hrs</u>              | 0/ <u>240</u> |
| PC   | J-STD-020 JESD-A113                | MSL <u>1</u> @ <u>260</u> °C                                        | Before TC, AC,<br>HAST, IOL | 0/ <u>960</u> |
| RSH  | JESD22- B106                       | Ta = 265°C, 10 sec                                                  |                             | 0/ <u>90</u>  |

## Note:

- Above data from L29666 (BCX19LT1G) which assembled with similar V-notch Lead Frame on SOT23 as generic data.
- SZMM3Z18VST1G, BAS16HT1G only PC+SAT was performed for this change, result shows it has better delamination performance to V-notch Lead Frame than non V-notch Lead Frame.

## Electrical Characteristic Summary:

Electrical characteristics are not impacted

## List of Affected Standard Parts:

| Part Number   | Qualification Vehicle      |
|---------------|----------------------------|
| NSR0320MW2T1G | SZMM3Z18VST1G<br>BAS16HT1G |
| NSR0320MW2T3G |                            |
| NSRLV20MW2T1G |                            |
| SD12CT1G      |                            |