

# Product Qualification Report

## **BAT54-05W**

Silicon Schottky Diode

### **Description**

This product qualification report describes the characteristics of the product with respect to quality and reliability.

The qualification sample selection was done on production lots which were manufactured and tested on standard production processes and meet the defined requirements.

The qualification test results of those products as outlined in this document are based on **AEC-Q101** for target applications and may reference existing qualification results of similar products. Such referencing is justified by the structural similarity of the products.

### **Qualification Assessment**

Fully qualified according to **AEC-Q101** and assessed as PASS

For further information about comparable products, please contact the nearest Infineon Technologies office ([www.infineon.com](http://www.infineon.com)).

**BAT54-05W**  
**PG-SOT323**  
**MSL: 1; 260 °C**

**qualified before 2011**

**Electrical Stress Test Results:**

| Test Description   | Abbr.       | Condition   | Duration | Lots/SS | Fail/Qty | Result |
|--|-------------|---|----------|---------|----------|--------|
| Electrical Parameter Assessment<br>AEC-Q101                    | ED          | -55 °C -<br>150 °C  |          | 3 x 25  | 0 / 75   | PASS   |
| High Temperature Reverse Bias<br>MIL-STD-750-1 M1038 Method A  | HTRB        | T <sub>j</sub> = 150 °C,<br>V <sub>dd</sub> = V <sub>dd_max</sub> | 1000 h   | 4 x 60  | 0 / 240  | PASS   |
| Intermittent Operation Life<br>MIL-STD-750 Method 1037         | IOL*        | Precond. cyc.<br>time: 2 min,<br>T <sub>j</sub> ≥ 150 °C          | 1000 h   | 4 x 60  | 0 / 240  | PASS   |
| Electrostatic Discharge Human Body<br>Model<br>JESD22-A114     | ESD-<br>HBM | Class 3A<br>4000 V to <<br>8000 V                                 |          | 1 x 10  | 0 / 10   | PASS   |
| Electrostatic Discharge Charged Device<br>Model<br>JESD22-A115 | ESD-MM      | Class C<br>≥ 400 V  |          | 1 x 10  | 0 / 10   | PASS   |

**Environmental Stress Test Results:**

| Test Description                                    | Abbr.  | Condition  | Duration    | Lots/SS | Fail/Qty | Result |
|---|--------|--|-------------|---------|----------|--------|
| Pre-conditioning<br>JESD22-A113, J-STD020           | PC     | Soak acc.<br>MSL 1, 3x<br>reflow, 260 °C                                       |             | 4 x 180 | 0 / 720  | PASS   |
| Temperature Cycling<br>JESD22-A104                  | TC*    | -55 °C to<br>150 °C  | 1000 cycles | 4 x 60  | 0 / 240  | PASS   |
| Autoclave<br>JESD22-A102                            | AC*    | T <sub>a</sub> = 121 °C,<br>rh = 100 %,<br>p = 2.1 bar                         | 96 h        | 4 x 60  | 0 / 240  | PASS   |
| High Humidity, High Temperature Bias<br>JESD22-A101 | H3TRB* | T <sub>a</sub> = 85 °C,<br>rh = 85 %,<br>V <sub>dd</sub> = V <sub>dd_max</sub> | 1000 h      | 4 x 60  | 0 / 240  | PASS   |

**Mechanical Stress Test Results:**

| Test Description                   | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|------------------------------------|-------|-----------|----------|---------|----------|--------|
| Physical Dimensions<br>JESD22-B100 | PD    |           |          | 1 x 30  | 0 / 30   | PASS   |
| Solderability<br>J-STD-002         | SD    |           |          | 3 x 22  | 0 / 66   | PASS   |

**Notes:**

\* For SMD devices reliability stress tests performed after preconditioning test (PC) according to JESD22-A113

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### Document reference

**n.a.**

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