# Product Qualification Report

# BAT54

Silicon Schottky Diodes

## 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).

**BAT54**
**PG-SOT23**
**MSL: 1; 260 °C**

**qualified before 2011**

### Electrical Stress Test Results:

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

### Environmental Stress Test Results:

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

### Mechanical Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|---|---|---|---|---|---|
| Physical Dimensions JESD22-B100 | PD | | | 1 x 30 | 0 / 30 | PASS |
| Solderability 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**

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