

# Product Qualification Report

## **BAS40-04**

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

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**BAS40-04**  
**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 <sub>j</sub> = 150 °C, V <sub>dd</sub> = V <sub>dd_max</sub>	1000 h	4 x 60	0 / 240	PASS
Intermittent Operation Life MIL-STD-750 Method 1037	IOL*	Precond. cyc. time: 2 min, T <sub>j</sub> ≥ 150 °C	1000 h	4 x 60	0 / 240	PASS
Electrostatic Discharge Human Body Model JESD22-A114	ESD- HBM	Class 2 2000 V to < 4000 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 <sub>a</sub> = 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 <sub>a</sub> = 85 °C, rh = 85 %, 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 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

**n.a.**

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