Product Qualification Report

IMW65R039M1H

SILICON CARBIDE MOSFET

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 **JEDEC** 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 **JEDEC** for **Industrial Applications** and assessed as PASS

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

qualified 2020

IMW65R039M1H
PG-TO247-3
MSL: not applicable

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Reverse Bias JESD22 A108	HTRB*	Ta = 175°C ** V_R = 80% $V_{R,max}$	1000 h	3 x 77	0 / 231	PASS
High Humidity High Temperature Reverse Bias JESD22 A101	H3TRB*	Ta = 85°C RH = 85% V_R = 80% $V_{R,max}$	1000 h	3 x 77	0 / 231	PASS
Highly Accelerated Stress Test JESD22 A110	HAST*	Ta = 130°C RH = 85% V_R = 100V	96 h	3 x 77	0 / 231	PASS
High Temperature Gate stress JESD22 A108	HTGS*	Ta = 175°C V_{GS} = ±20 V	1000 h	3 x 77	0 / 231	PASS
Intermitted Operational Life Test MIL-STD 750 / Meth.1037	IOL*	Delta T =100K	15000 cyc.	3 x 77	0 / 231	PASS
ESD (HBM) JESD22-A114	HBM	1C (1000 V to < 2000 V)				PASS
ESD (CDM) JESD22-C101	CDM	C3 (> 1000 V)				PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots	Fail/Qty	Result
Temperature Cycling JESD22 A104	TC*	-55°C to +150°C	1000 cyc.	3 x 77	0 / 231	PASS
Unbiased Highly Accelerated Stress Test JESD22 A118	UHAST*	Ta = 130°C RH = 85%	96 h	3 x 77	0 / 231	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots	Fail/Qty	Result
Destructive Physical Analysis	DPA	samples from UHAST & TC		3	0 / 3	PASS

Notes:

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

** Specifically used stress temperature is according to product capability documented in the product datasheet

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Document reference

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