Product Qualification Report

IGT60R190D1S

Cool GaN™

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

Qualified according to **JEDEC Standard** and assessed as PASS

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

IGT60R190D1S qualified 2017
PG-HSOF-8
MSL: 1; 260

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Storage Life *JESD22-A103*	HTSL	T_a = 150 °C	500 h	3 x 77	0 / 231	PASS
High Temperature Reverse Bias *JESD22-A108*	HTRB[1]	T_a = 150 °C V_{DS} = 480 V	500 h	3 x 77	0 / 231	PASS
Positive High Temperature Gate Stress *JESD22-A108*	HTGF[1]	T_a = 150 °C I_G = 50 mA	500 h	3 x 77	0 / 231	PASS
Negative High Temperature Gate Stress *JESD22-A108*	HTGS[1]	T_a = 150 °C V_{GS} = -10 V	500 h	3 x 77	0 / 231	PASS
Intermittent Operational Life Test *MIL-STD 750 / Meth.1037*	IOL[1]	ΔT = 100 K	7500x	3 x 77	0 / 231	PASS
ESD (HBM) *JESD22-A114*	HBM	Class 2 (2000 V to <4000 V)		1 x 3 (per voltage level)	0 / 3	PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Pre-Conditioning *J-STD020 / JESD22 A113*	PC	MSL 1 and 3 x reflow		3	0	PASS
High Humidity, High Temperature Reverse Bias *JESD22 A101*	H^{3}TRB[1]	T_a = 85 °C r.h. = 85% V_{DS} = 100 V	500 h	3 x 77	0 / 231	PASS
Unbiased Highly Accelerated Stress Test *JESD22 A118*	uHAST[1]	T_a = 130 °C r.h. = 85%	48 h	3 x 77	0 / 231	PASS
Temperature Cycling *JESD22 A104*	TC[1]	-55 °C to +150 °C	500x	3 x 77	0 / 231	PASS

[1] For SMD devices, a preconditioning (PC) according to JESD22 was performed prior to selected reliability stress tests.

Additional, Non-Standard Reliability Test Data

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Dynamic High Temperature Reverse Bias	dynHTRB[1]	T_a = 150 °C V_{DS} = 600 V f = 100 kHz	1000 h	1 x 77	0 / 77	PASS
Low Temperature Reverse Bias	LTRB[1]	T_a = 0 °C V_{DS} = 480 V	500 h	3 x 77	0 / 231	PASS
Positive High Humidity, High Temperature Gate Stress	H^3TGF[1]	T_a = 85 °C r.h. = 85% I_G = 50 mA	500 h	1 x 77	0 / 77	PASS
Negative High Humidity, High Temperature Gate Stress	H^3TGS[1]	T_a = 85 °C r.h. = 85% V_{GS} = -10 V	500 h	1 x 77	0 / 77	PASS

[1] For SMD devices, a preconditioning (PC) according to JESD22 was performed prior to selected reliability stress tests.

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Email: erratum@infineon.com

Document reference

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