Product Qualification Report

IGT60R070D1

CoolGaN™

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).

IGT60R070D1 qualified 2021
PG-HSOF-8
MSL: 1; 260°C

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Reverse Bias *JESD22-A108*	HTRB[1]	T_a = 150 °C V_{DS} = 600 V	1000 h	3 x 77	0 / 231	PASS
Positive High Temperature Gate Stress *JESD22-A108*	P_HTGF[1]	T_a = 150 °C I_G = 50 mA	1000 h	3 x 77	0 / 231	PASS
Negative High Temperature Gate Stress JESD22-A108	N_HTGS[1]	Ta = 150 °C V_{GS} = -10 V	1000 h	3 x 77	0 / 231	PASS
Intermitted Operational Life Test *MIL-STD 750 / Meth.1037*	IOL[1]	ΔT =100 C	15000 cyc	3 x 77	0 / 231	PASS
Electrostatic Discharge Human Body Model *JESD22-JS-001*	ESD-HBM	Class 2 (2000 V to < 4000 V)			0 / 3	PASS
Electrostatic Discharge Charged Device Model *JESD22-JS-002*	ESD-CDM	Class C3 (1000 V or greater)			0 / 3	PASS
Parametric Verification *JESD86*	PV	T_a = -55 °C / 25 °C / 150 °C		3 x 25	0 / 75	PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Pre-conditioning J-STD020 / *JESD22 A113*	PC	MSL and 3 x reflow		3	0	PASS
High Humidity, High Temperature Reverse Bias *JESD22 A101*	H^3TRB[1]	T_a =85 °C r.h. = 85% V_{DS} ≥ 100 V	1000 h	3 x 77	0 / 231	PASS
Unbiased Highly Accelerated Stress Test *JESD22 A118*	UHAST[1]	T_a =130 °C r.h. = 85%	96 h	3 x 77	0 / 231	PASS
Temperature Cycling *JESD22 A104*	TC[1]	-55 °C to +150 °C	1000 cyc	3 x 77	0 / 231	PASS
High Temperature Storage Life *JESD22 A-103*	HTSL[1]	150°C	1000 h	3 x 55	0 / 165	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Destructive Physical Analysis	DPA	samples from TC, uHAST, HTRB			0 / 10	PASS

Notes:
[1] For SMD devices, a preconditioning (PC) according to JESD22-A113 was performed prior to selected reliability stress tests.

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