Product Qualification Report

IGT65R140D2

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).

IGT65R140D2
PG-HSOF-8-12
MSL: 1; 260°C

qualified 2024

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Reverse Bias JESD22-A108 (Q101)	HTRB	T_a = 150 °C V_{DS} = 80% of $V_{DS, max}$	1000 h	3 x 77	0 / 231	PASS
Positive High Temperature Gate Stress JESD22-A108	P_HTGF	T_a = 150 °C $I_G = I_{gf\text{-}DC,Max}$ According to data sheet maximum values	1000 h	3 x 40	0 / 120	PASS
Negative High Temperature Gate Stress JESD22-A108	N_HTGS	T_a = 150 °C V_{GS} = -10 V	1000 h	3 x 40	0 / 120	PASS
Intermitted Operational Life Test MIL-STD 750 / Meth.1037	IOL*	ΔT = 100 K	15000 cyc	3 x 77	0 / 231	PASS
Electrostatic Discharge Human Body Model ANSI/ESDA/JEDEC-JS-001	ESD-HBM	Class 2 (2000 V to < 4000 V)			0 / 3	PASS
Electrostatic Discharge Charged Device Model ANSI/ESDA/JEDEC -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 1		3	0	PASS
Highly Accelerated Stress Test JESD22 A110	HAST*	T_a =130 °C r.h. = 85% V_{DS} ≥ 100 V	96 h	3 x 77	0 / 231	PASS
Temperature Cycling JESD22 A104	TC*	-55 °C to +150 °C	1000 cyc	3 x 77	0 / 231	PASS

Mechanical Stress Test Results:

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

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

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