Product Qualification Report

ICE5QR1680BG-1

CoolSET™

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).

ICE5QR1680BG-1 **qualified before 2025**
PG-DSO-12
MSL: 3; 260°C

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duratio	Lots/SS	Fail/Qty	Result
High Temperature Storage Life JESD22-A103	HTSL	Ta ≥ 150°C	1000 h	3 x 77	0 / 231	PASS
High Temperature Operating Life JESD22-A108	HTOL	Ta = 125°C V = max voltage	1000 h	5 x 77	0 / 385	PASS
Latch-up JESD78	LU	Class 2				PASS
ESD (HBM) JS-001	HBM	Class 2 (2000V to <4000V)				PASS
ESD (CDM) JS-002	CDM	Class C3 (> 1000V)				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		6 x 77	0 / 462	PASS
Highly Accelerated Temperature and Humidity Stress JESD22 A110	HAST*	Ta = 130°C rh = 85% V = Max voltage	96 h	2 x 77	0 / 154	PASS
Temperature Cycling JESD22 A104	TC*	-55°C to +150°C	1000 cycles	3 x 77	0 / 308	PASS
Unbiased Highly Accelerated StressTest JESD22 A118	uHAST*	Ta = 130°C rh = 85%	96 h	1 x 77	0 / 77	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots	Fail/Qty	Result
Destructive Physical Analysis	DPA	samples from HAST & TC		4	0 / 72	PASS

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

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Document reference

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