Product Qualification Report

BGT24LTR11N16

24 GHz radar sensor

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 JESD47** 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 JESD47**and assessed as PASS.

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

BGT24LTR11N16 **qualified 2020**
PG-TSNP-16-9
MSL: 1; 260 °C

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Electrical Parameter Assessment JESD86	ED	Ta = -40 °C/ 25 °C/ 85 °C		3 x 10	0 / 30	PASS
High Temperature Operating Life JESD22-A108	HTOL	Tj ≥ 150 °C Vcc ≥ Vcc_{max}	1000 h	3 x 77	0 / 231	PASS
Early Life Failure Rate JESD74, JESD22-A108	ELFR	T_a = 125 °C $V_{cc_} \geq V_{cc_max}$	48 h	3 x 800	0 / 2400	PASS
Electrostatic Discharge Human Body Model ANSI/ESDA/JEDEC JS-001	ESD-HBM	Class 1C <2KV HBM		1 x 3	0 / 3	PASS
Electrostatic Discharge Charged Device Model ANSI/ESDA/JEDEC JS-002	ESD-CDM	Class C3 ≥ 1000 V		1 x 3	0 / 3	PASS
Latch Up JESD78	LU	T_a = 85 °C $I_{trigger}$ = 150 mA		1 x 3	0 / 3	PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Storage Life JESD22-A103	HTSL	T_a = 150 °C	1000 h	3x 25	0 / 75	PASS
Pre-conditioning JESD22-A113, J-STD020	PC	Soak acc. MSL 1, 4x reflow, 260 °C		3 x 75	0 / 225	PASS
Temperature Cycling JESD22-A104	TC*	-40 °C to 125 °C	1000 cycles	3 x 25	0 / 75	PASS
Temperature-Humidity-Bias JESD22-A110	HAST*	T_a = 130 °C rh = 85 % $V_{cc} \geq V_{cc_max}$	192 h	3 x 25	0 / 75	PASS
Unbiased Highly Accelerated Stress Test JESD22-A118	UHAST*	T_a = 130 °C rh = 85 %	96 h	3 x 25	0 / 75	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Physical Dimensions JESD22-B100 and B108	PD			3 x 10	0 / 30	PASS
Solderability IEC60068-2-58	SD			3 x 22	0 / 66	PASS

Notes:
* For SMD devices reliability stress tests performed after preconditioning test (PC) according to JESD22-A113.

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Document reference

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