

Product Qualification Report

IRS2877AS

Real3™ ToF 3D image sensors for automotive

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 **AEC** 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 **AEC – Q100 Rev H** for **Automotive Applications** and assessed as PASS

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

IRS2877AS
PG-LFBGA-65-1
MSL: 3; 260 °

qualified in 2022

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Electrical Parameter Assessment AEC Q100-009	ED	-40 °C, 25 °C, 85 °C, 125 °C		3 x 10	0 / 30	PASS
High Temperature Operating Life JESD22-A108	HTOL	T _a = 105 °C V _{dd} ≥ V _{dd_max}	1000 h	3 x 77	0 / 231	PASS
Early Life Failure Rate AEC Q100-008	ELFR	T _a = 105 °C V _{dd} ≥ V _{dd_max}	48 h	3 x 800		
Electrostatic Discharge Human Body Model AEC-Q100-002	ESD- HBM	Class 2 2000V to < 4000V		1 x 3	0 / 3	PASS
Electrostatic Discharge Charged Device Model AEC-Q100-011	ESD- CDM	Class C2a 500 V to < 750V		1 x 3	0 / 3	PASS
Latch Up AEC Q100-004	LU	T _a = 125 °C I _{trigger} = 100 mA		1 x 3	0 / 3	PASS
Electromagnetic compatibility SAE J1752/3 – Radiated Emissions	EMC			1 x 1	0 / 1	PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
High Temperature Storage Life JESD22-A103	HTSL	T _a = 125 °C	1000 h	1 x 45	0 / 45	PASS
Pre-conditioning JESD22-A113, J-STD020	PC	Soak acc. MSL 3, 3x reflow, 260 °C		9 x 77 1 x 45	0 / 738	PASS
Temperature Cycling JESD22-A104	TC*	-55 °C to 125 °C	1000 cycles	3 x 77	0 / 231	PASS
Temperature Humidity Bias JESD22-A101	THB*	T _a = 85 °C rh = 85 % V _{dd} ≥ V _{dd_max}	1000 h	3 x 77	0 / 231	PASS
Unbiased Highly Accelerated Stress Test JESD22-A118	UHASt*	T _a = 110 °C rh = 85 %	264 h	3 x 77	0 / 231	PASS
Power Temperature Cycling JESD22-A105	PTC	-40 °C to 105 °C V _{dd} ≥ V _{dd_max}	1000 cycles	1 x 45	0 / 45	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Solderability IEC60068-2-58	SD	4h steam aging, 4h dry bake, 16h dry bake, T = 245+-5°C		1 x 15	0 / 15	PASS
Solder Ball Shear AEC Q100-10	SBS	5 balls from a min. of 10 devices		3 x 10	0 / 10	PASS
Physical Dimensions JESD22-B103	PD	Cpk ≥ 1,67		3 x 10	0 / 10	PASS
Variable Frequency Vibration JESD22-B103B	VFV	Frequency: 8...2000Hz, Axis: X,Y,Z Acceleration peak: 50g (AEC-Q100) Duration of complete sweep and return: 4 min Duration: 16min/axis		1 x 15	0 / 15	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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