Product Qualification Report

SMBTA42

NPN Silicon Darlington Transistor

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).

SMBTA42 **qualified before 2010**
Package: PG-SOT23-3
MSL: 1

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/ss	Fail/Qty	Result
Electrical Distribution	ED	-55°C, +25°C, +150°C		1 x 30	0 / 30	PASS
High Humidity High Temperature Reverse Bias JESD22 A101	H3TRB	T=85°C, RH=85%	1000 h	4 x 60	0 / 240	PASS
High Temperature Reverse Bias JESD22 A108	HTRB	Ta=150°C	1000 h	4 x 60	0 / 240	PASS
Intermittend Operating Life MIL-STD-750 Method 1037	IOL	Tj=175°C Cycle time: 2min	1000 h	4 x 60	0 / 240	PASS

Environmental Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Preconditioning J-STD020 / JESD22 A113	PC	Soak acc.MSL1, 3x reflow, 260°C		4 x 240	0 / 960	PASS
Temperature Cycling JESD22 A104	TC	-55°C to +150°C	1000 cyc	4 x 60	0 / 240	PASS
Autoclave JESD22 A102	AC	Ta=121°C, RH=100%	96 h	4 x 60	0 / 240	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Destructive Physical Analysis	DPA	Random samples from H3TRB & TC		4 / 2	0 / 8	PASS
Physical Dimensions JESD B-100	PD			1 / 30	0 / 30	PASS
Resistance to Solder Heat JESD B-106	RTSH	Solder bath Ts=260°C, dip 3 x 10 sec		1 / 30	0 / 30	PASS
Solderability J-STD-002	SD			1 / 10	0 / 10	PASS

Notes:

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Document reference

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