Product Qualification Report

IPA50R399CP

CoolMOS™

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).

IPA50R399CP
PG-TO220-3
MSL: NA; through hole device

qualified 2006

Electrical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots/SS	Fail/Qty	Result
Parametric Verification	PV	-55°C, +25°C, +150°C		6 x 30	0 / 180	PASS
High Temperature Reverse Bias JESD22 A108	HTRB*	Ta ≥ 150°C V_{DS} ≥ 400V	1000 h	7 x 77	0 / 539	PASS
High Temperature Gate Bias JESD22 A108	HTGB*	Ta = 150°C V_{GS} = +/-20V	1000 h	7 x 77	0 / 539	PASS
High Humidity High Temp. Reverse Bias JESD22 A101	H3TRB*	Ta = 85°C rh = 85% V_{DS} = 80V	1000 h	8 x 77	0 / 616	PASS
Intermitted Operational Life Test MIL-STD 750 / Meth.1037	IOL*	Delta T =100K	15000 cyc	4 x 77	0 / 308	PASS
ESD (HBM) JESD22-A114	HBM	Class 1C 1000V to < 2000V				PASS
ESD (CDM) JESD22-C101	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		2 x 385 1 x 462	0 / 1232	PASS
Temperature Cycling JESD22 A104	TC*	-55°C to +150°C	1000 cyc	8 x 77	0 / 616	PASS
Autoclave JESD22 A102	AC*	Ta = 121°C rh = 100%	96 h	8 x 77	0 / 616	PASS
Wave solder simulation for SMD devices JESD22 A111	WS*	T=260°C / 1 x 10sec and Temperature Cycling -55°C to +150°C; 100 cyc.		1 x 30 1 x 45	0 / 75	PASS

Mechanical Stress Test Results:

Test Description	Abbr.	Condition	Duration	Lots	Fail/Qty	Result
Destructive Physical Analysis	DPA	samples from AC & TC		8	0 / 8	PASS

Notes:

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

Trademarks
All referenced product or service names and trademarks are the property of their respective owners.

Edition 2016-01-22

Published by

Infineon Technologies AG

81726 München, Germany

© 2018 Infineon Technologies AG. All Rights Reserved.

Do you have a question about this document?

Email: erratum@infineon.com

Document reference

n.a.

IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

For further information on the product, technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies office (**www.infineon.com**).

WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.