

Product Qualification Report

SPW11N80C3

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).

SPW11N80C3
PG-TO247-3
MSL: NA; through hole device

qualified before 2012

Electrical Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|--------|--|-----------|---------|----------|--------|
| Parametric Verification | PV | -55°C, +25°C, +150°C | | 4 x 50 | 0 / 200 | PASS |
| High Temperature Reverse Bias JESD22 A108 | HTRB* | Ta ≥ 150°C V _{DS} ≥ 640V | 1000 h | 5 x 77 | 0 / 385 | PASS |
| High Temperature Gate Bias JESD22 A108 | HTGB* | Ta = 150°C V _{GS} = +/-20V | 1000 h | 5 x 77 | 0 / 385 | PASS |
| High Humidity High Temperature Reverse Bias JESD22 A101 | H3TRB* | Ta = 85°C rh = 85% V _{DS} = 80V | 1000 h | 5 x 77 | 0 / 385 | PASS |
| Intermitted Operational Life Test MIL-STD 750 / Meth.1037 | IOL* | Delta T =100K | 15000 cyc | 5 x 77 | 0 / 385 | PASS |
| ESD (HBM) JESD22-A114 | HBM | Class 2 | | | | PASS |
| ESD (CDM) JESD22-C101 | CDM | Class C3 | | | | 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 462 | 0 / 924 | PASS |
| Temperature Cycling JESD22 A104 | TC* | -55°C to +150°C | 1000 cyc | 5 x 77 | 0 / 385 | PASS |
| Autoclave JESD22 A102 | AC* | Ta = 121°C rh = 100% | 96 h | 5 x 77 | 0 / 385 | PASS |
| Wave solder simulation for SMD devices JESD22 A111 | WS* | T=260°C / 1 x 10Sec and Temperature Cycling -55°C - +150°C 100 cycles | | 1 x 77 1 x 45 | 0 / 122 | PASS |

Mechanical Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots | Fail/Qty | Result |
|-------------------------------|-------|-----------------------------------|----------|------|----------|--------|
| Destructive Physical Analysis | DPA | samples from AC or UHA & TC | | 5 | 0 / 5 | PASS |

Notes:

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

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Edition 2016-01-22

Published by

Infineon Technologies AG

81726 München, Germany

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Email: erratum@infineon.com

Document reference

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