

Product Qualification Report

IMW65R072M1H

SILICON CARBIDE MOSFET

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).

qualified 2020

IMW65R072M1H
PG-TO247-3
MSL: not applicable

Electrical Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|--------|--|------------|---------|----------|--------|
| High Temperature Reverse Bias JESD22 A108 | HTRB* | Ta = 175°C ** V _R = 80% V _{R,max} | 1000 h | 3 x 77 | 0 / 231 | PASS |
| High Humidity High Temperature Reverse Bias JESD22 A101 | H3TRB* | Ta = 85°C RH = 85% V _R = 80% V _{R,max} | 1000 h | 3 x 77 | 0 / 231 | PASS |
| Highly Accelerated Stress Test JESD22 A110 | HAST* | Ta = 130°C RH = 85% V _R = 100V | 96 h | 3 x 77 | 0 / 231 | PASS |
| High Temperature Gate stress JESD22 A108 | HTGS* | Ta = 175°C V _{GS} = ±20 V | 1000 h | 3 x 77 | 0 / 231 | PASS |
| Intermittent Operational Life Test MIL-STD 750 / Meth.1037 | IOL* | Delta T = 100K | 15000 cyc. | 3 x 77 | 0 / 231 | PASS |
| ESD (HBM) JESD22-A114 | HBM | 1B (500 V to < 1000 V) | | | | PASS |
| ESD (CDM) JESD22-C101 | CDM | C3 (> 1000 V) | | | | PASS |

Environmental Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots | Fail/Qty | Result |
|--|--------|------------------------|-----------|--------|----------|--------|
| Temperature Cycling JESD22 A104 | TC* | -55°C to +150°C | 1000 cyc. | 3 x 77 | 0 / 231 | PASS |
| Unbiased Highly Accelerated Stress Test JESD22 A118 | UHASt* | Ta = 130°C RH = 85% | 96 h | 3 x 77 | 0 / 231 | PASS |

Mechanical Stress Test Results:

| Test Description | Abbr. | Condition | Duration | Lots | Fail/Qty | Result |
|-------------------------------|-------|----------------------------|----------|------|----------|--------|
| Destructive Physical Analysis | DPA | samples from UHASt & TC | | 3 | 0 / 3 | PASS |

Notes:

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

** Specifically used stress temperature is according to product capability documented in the product datasheet

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Document reference

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