# Product Qualification Report

# IGD70R500D2S

CoolGaN™

## 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).

# IGD70R500D2S
# PG-TO252-3-37
# MSL: 3; 260°C

**qualified 2025**

**Electrical Stress Test Results:**

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|---|---|---|---|---|---|
| High Temperature Reverse Bias JESD22-A108 (Q101) | HTRB | $T_a$ = 150 °C $V_{DS}$ = 80% of $V_{DS, max}$ | 1000 h | 3 x 77 | 0 / 231 | PASS |
| Positive High Temperature Gate Stress JESD22-A108 | P_HTGF | $T_a$ = 150 °C $I_G = I_{gf\text{-}DC,Max}$ According to data sheet maximum values | 1000 h | 3 x 40 | 0 / 120 | PASS |
| Negative High Temperature Gate Stress JESD22-A108 | N_HTGS | $T_a$ = 150 °C $V_{GS}$ = -10 V | 1000 h | 3 x 40 | 0 / 120 | PASS |
| Intermitted Operational Life Test MIL-STD 750 / Meth.1037 | IOL* | ΔT = 100 K | 15000 cyc | 3 x 77 | 0 / 231 | PASS |
| Electrostatic Discharge Human Body Model ANSI/ESDA/JEDEC-JS-001 | ESD-HBM | Class 2 ( 2000 V to < 4000 V ) | | | 0 / 3 | PASS |
| Electrostatic Discharge Charged Device Model ANSI/ESDA/JEDEC -JS-002 | ESD-CDM | Class C3 ( 1000 V or greater ) | | | 0 / 3 | PASS |
| Parametric Verification JESD86 | PV | $T_a$ = -55 °C / 25 °C / 150 °C | | 3 x 25 | 0 / 75 | PASS |

**Environmental Stress Test Results:**

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|---|---|---|---|---|---|
| Pre-conditioning J-STD020 / JESD22 A113 | PC | MSL 3 | | 3 | 0 | PASS |
| Highly Accelerated Stress Test JESD22 A110 | HAST* | $T_a$ =130 °C r.h. = 85% $V_{DS}$ ≥ 100 V | 96 h | 3 x 77 | 0 / 231 | PASS |
| Temperature Cycling JESD22 A104 | TC* | -55 °C to +150 °C | 1000 cyc | 3 x 77 | 0 / 231 | PASS |

**Mechanical Stress Test Results:**

| Test Description | Abbr. | Condition | Duration | Lots/SS | Fail/Qty | Result |
|---|---|---|---|---|---|---|
| Destructive Physical Analysis | DPA | samples from TC, HAST, HTRB | | | 0 / 10 | PASS |

**Notes:**
* For SMD devices, a preconditioning (PC) according to JESD22-A113 was performed prior to selected reliability stress tests.

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**Published by**

**Infineon Technologies AG**

**81726 München, Germany**

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**Document reference**
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