

Product Qualification Report

FP25R12W1T7_B11

Easy1B

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 **IEC standards** 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

Qualified according to **IEC Standard** and assessed as **PASS**

For further information about comparable products, please contact the nearest Infineon Technologies office (www.infineon.com).

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Part of family qualification for:

FPxxR12W1T7_B11

| Test Description | Abbr. | Condition | Devices | Result |
|--|--------------|---|--------------|--------------------|
| High Temperature Reverse Bias IEC 60747-9 *) | HTRB | 1.000 h $V_{CE} = 0,9 \times V_{CES} (DC)$ $V_{CE} = 1.080 V$ $T_{vj} = T_{vj\ op\ max}$ | ≥ 72 dies | PASS |
| High Temperature Reverse Bias IEC 60747-2 *) | HTRB Rec. | 1000 h $V_R = 0,9 \times V_{RRM} (AC)$ $V_R = 1440 V$ $T_{vj} = 150\ ^\circ C$ | ≥ 72 dies | PASS |
| High Temperature Gate Stress IEC 60747-9 *) | HTGS | 1.000 h $V_{GE} = \pm 20 V (DC)$ $T_a = T_{vj\ op\ max}$ | ≥ 72 dies | PASS |
| High Humidity High Temperature Reverse Bias IEC 60749-5 *) | H3TRB | 1.000 h $T_a = 85\ ^\circ C; RH = 85\%$ $V_{CE} = 80 V (DC)$ | ≥ 72 dies | PASS |
| High Voltage High Humidity High Temperature Reverse Bias IEC 60749-5 *) | HV-H3TRB | 1.000 h $T_a = 85\ ^\circ C; RH = 85\%$ $V_{CE} = 960 V (DC)$ | ≥ 72 dies | PASS |
| Power Cycling [sec.] IEC 60749-34 | PC IGBT | 100.000 Cycles $\Delta T_{vj} = 80 K$ $T_{vj\ max} = 150\ ^\circ C$ | ≥ 6 modules | PASS |
| Power Cycling [sec.] IEC 60749-34 | PC Diode | 70.000 Cycles $\Delta T_{vj} = 80 K$ $T_{vj\ max} = 150\ ^\circ C$ | ≥ 6 modules | PASS |
| Thermal Shock Test (two chamber) IEC 60749-25 | TST | 50 Cycles $T_a = -40\ ^\circ C$ to $+125\ ^\circ C$ | ≥ 12 modules | PASS |
| Vibration (Sine Sweep) IEC 60068-2-6 *) | VIB | 5 h each direction (x, y, z) $f = 5 \dots 200\ Hz$ $f1 = 5 \dots 13\ Hz: A = 7,5\ mm\ (const.)$ $f2 = 13 \dots 200\ Hz: a = 50\ m/s^2$ $v = 1\ Octave/min.$ | ≥ 12 modules | PASS |
| ESD-Level (HBM) JESD22-A114 | HBM | $R = 1.5\ k\Omega; C = 100\ pF$ | ≥ 3 modules | Class tbd. tbd. |

Notes:

*) Standards are taken as a reference; slight variations from the standards according to Infineon regulations may occur.

$T_{vj\ op} > 150\ ^\circ C$ is allowed for operation at overload conditions. For detailed information also about lifetime calculations please refer to AN2018-14.

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Document reference

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