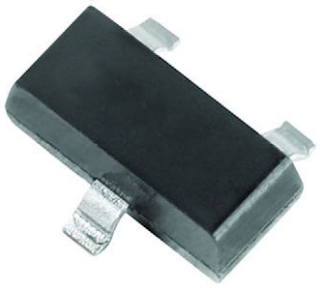
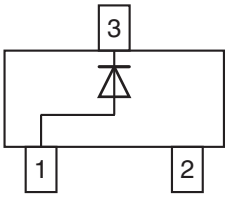
# Small Signal Switching Diode






## FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- AEC-Q101 qualified available (part number on request)
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

**DESIGN SUPPORT TOOLS** click logo to get started

3D Models Available

## MECHANICAL DATA

**Case:** SOT-23

**Weight:** approx. 8.1 mg

**Packaging codes / options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

**PARTS TABLE**

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
|---|---|---|---|---|
| IMBD4448-G | IMBD4448-G3-08 or IMBD4448-G3-18 | Single | AJ | Tape and reel |

**ABSOLUTE MAXIMUM RATINGS** ($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Reverse voltage | | $V_R$ | 75 | V |
| Peak reverse voltage | | $V_{RM}$ | 100 | V |
| Rectified current (average) half wave rectification with resistive load (1) | f ≥ 50 Hz | $I_{F(AV)}$ | 150 | mA |
| Surge forward current | t < 1 s and $T_j$ = 25 °C | $I_{FSM}$ | 500 | mA |
| Power dissipation (1) | | $P_{tot}$ | 350 | mW |

**THERMAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Thermal resistance junction to ambient air (1) | | $R_{thJA}$ | 450 | K/W |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |
| Operating temperature range | | $T_{op}$ | -55 to +150 | °C |

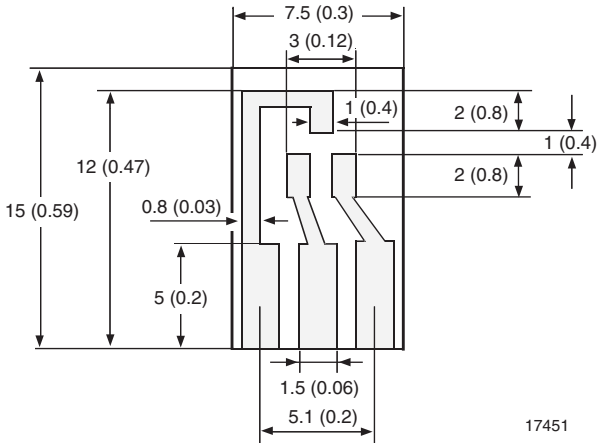
**Note**

(1) Device on fiberglass substrate, see layout on next page

| ELECTRICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Forward voltage | $I_F$ = 5 mA | $V_F$ | 0.62 | | 0.72 | V |
| | $I_F$ = 100 mA | $V_F$ | | | 1 | V |
| Leakage current | $V_R$ = 70 V | $I_R$ | | | 2500 | nA |
| | $V_R$ = 70 V, $T_j$ = 150 °C | $I_R$ | | | 50 | µA |
| | $V_R$ = 25 V, $T_j$ = 150 °C | $I_R$ | | | 30 | µA |
| Diode capacitance | $V_F$ = $V_R$ = 0 V | $C_D$ | | | 4 | pF |
| Reverse recovery time | $I_F$ = 10 mA, $i_R$ = 1 mA, $V_R$ = 6 V, $R_L$ = 100 Ω | $t_{rr}$ | | | 4 | ns |

## LAYOUT FOR $R_{thJA}$ TEST

Thickness:
Fiberglass 1.5 mm (0.059 in.)
Copper leads 0.3 mm (0.012 in.)




## TYPICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified)

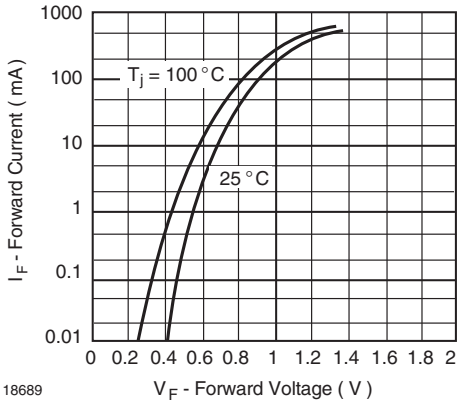



Fig. 1 - Forward Current vs. Forward Voltage

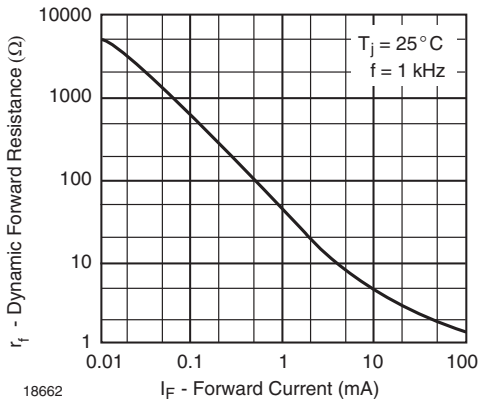



Fig. 2 - Dynamic Forward Resistance vs. Forward Current

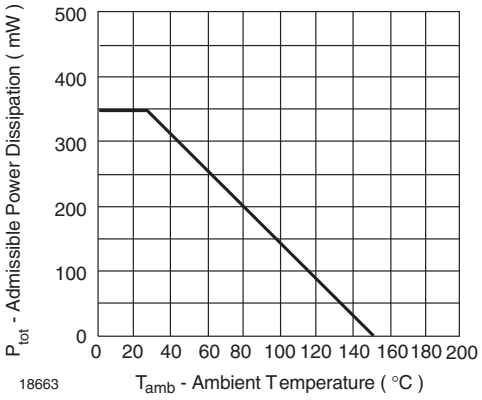



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

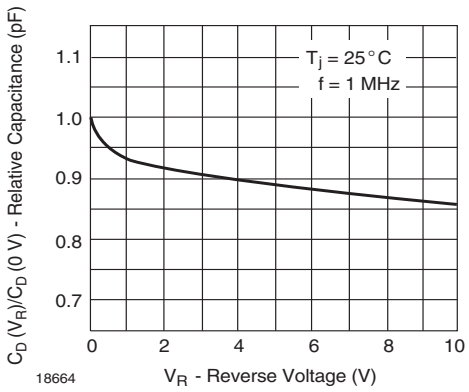



Fig. 4 - Relative Capacitance vs. Reverse Voltage

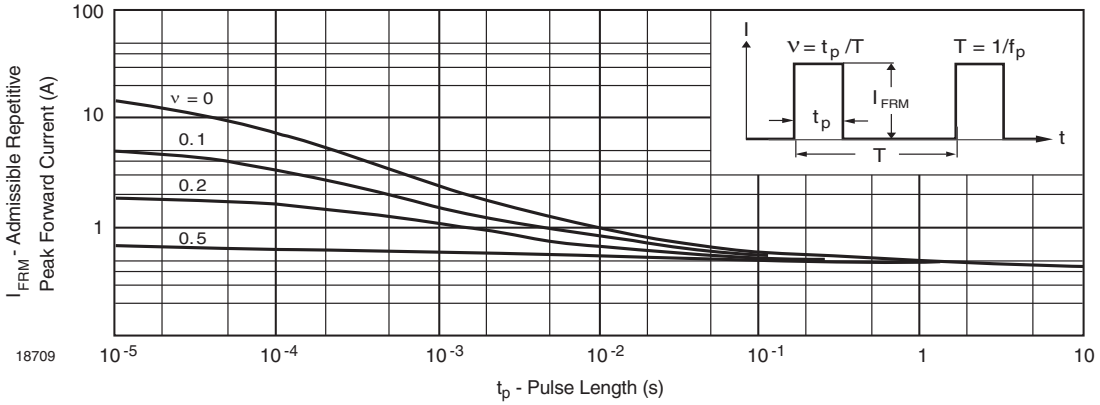
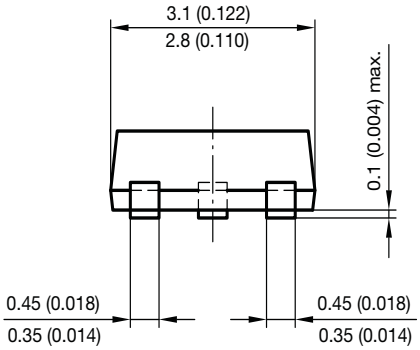
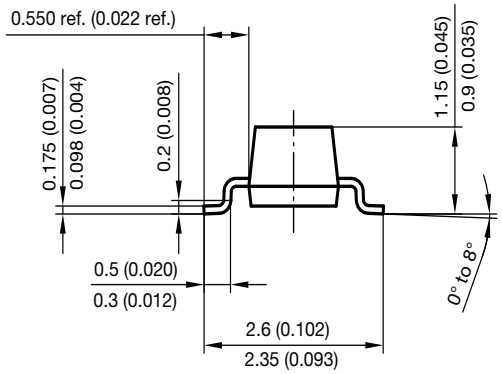
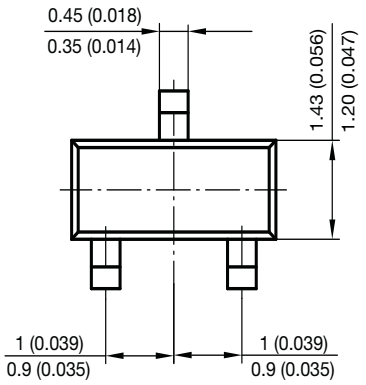



Fig. 5 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

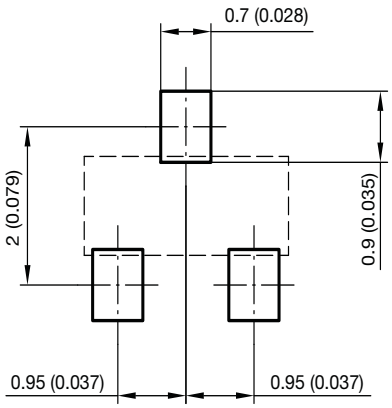
**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**




Foot print recommendation:

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