# Small Signal Fast Switching Diode

## FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

## DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

## MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.3 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 |
|---|---|---|---|---|
| BAS16D | BAS16D-E3-08 or BAS16D-E3-18<br>BAS16D-HE3-08 or BAS16D-HE3-18 | Single | A6 | 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 |
| Repetitive peak reverse voltage | | $V_{RRM}$ | 100 | V |
| Forward current (continuous) | | $I_F$ | 250 | mA |
| Non-repetitive peak forward current | t = 1 µs | $I_{FSM}$ | 2 | A |
| | t = 1 ms | $I_{FSM}$ | 1 | A |
| | t = 1 s | $I_{FSM}$ | 0.5 | A |
| 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) | | $R_{thJA}$ | 375 | K/W |
| Maximum junction temperature | | $T_j$ | 150 | °C |
| Storage temperature range (1) | | $T_{stg}$ | -65 to +150 | °C |
| Operating temperature range | | $T_{op}$ | -55 to +150 | °C |

**Note**

(1) Valid provided electrodes are kept at ambient temperature

| ELECTRICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Forward voltage | $I_F$ = 150 mA | $V_F$ | | | 1.25 | V |
| | $I_F$ = 50 mA | $V_F$ | | | 1 | V |
| | $I_F$ = 10 mA | $V_F$ | | | 0.855 | V |
| | $I_F$ = 1 mA | $V_F$ | | | 0.715 | V |
| Leakage current | $V_R$ = 75 V | $I_R$ | | | 1000 | nA |
| | $V_R$ = 25 V, $T_j$ = 150 °C | $I_R$ | | | 30 | µA |
| | $V_R$ = 75 V, $T_j$ = 150 °C | $I_R$ | | | 50 | µA |
| Diode capacitance | $V_R$ = 0; f = 1 MHz | $C_D$ | | | 2 | pF |
| Reverse recovery time | $I_F$ = 10 mA, $I_R$ = 10 mA, $i_R$ = 1 mA, $R_L$ = 100 Ω | $t_{rr}$ | | | 6 | ns |

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

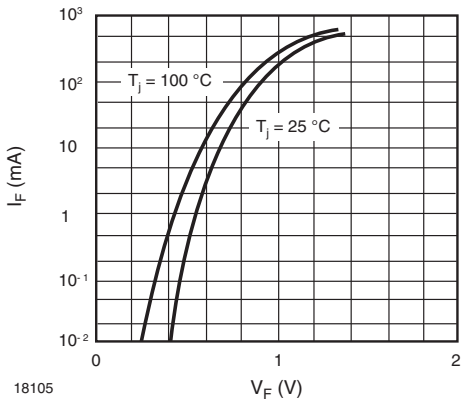



Fig. 1 - Forward Characteristics

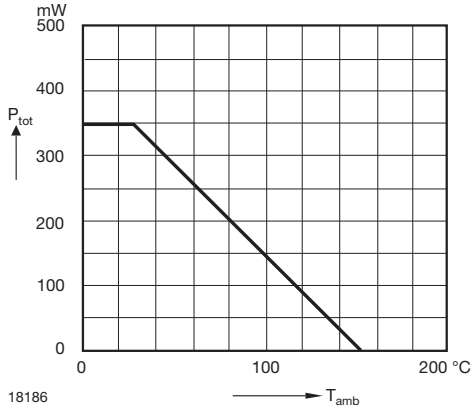



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

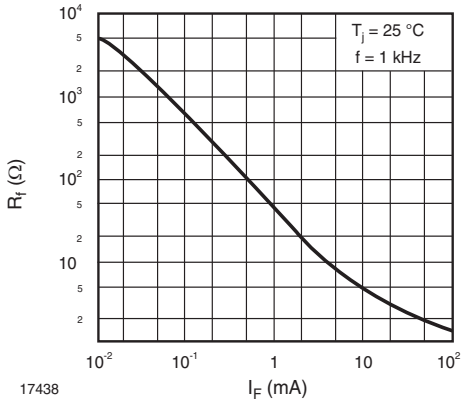



Fig. 2 - Dynamic Forward Resistance vs. Forward Current

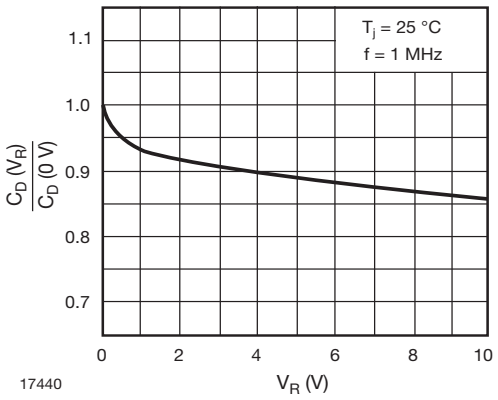



Fig. 4 - Relative Capacitance vs. Reverse Voltage

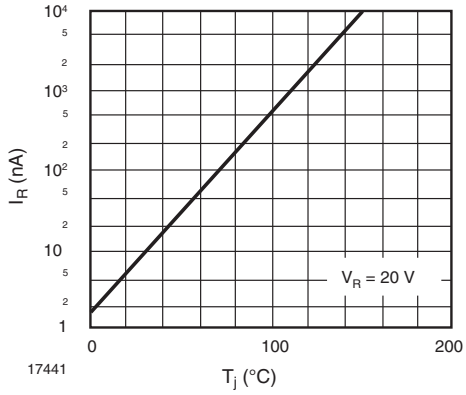



Fig. 5 - Leakage Current vs. Junction Temperature

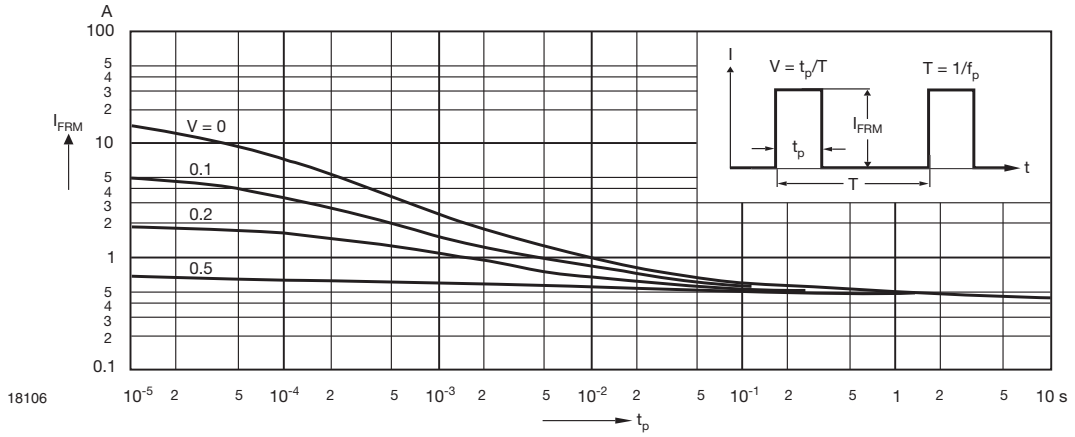
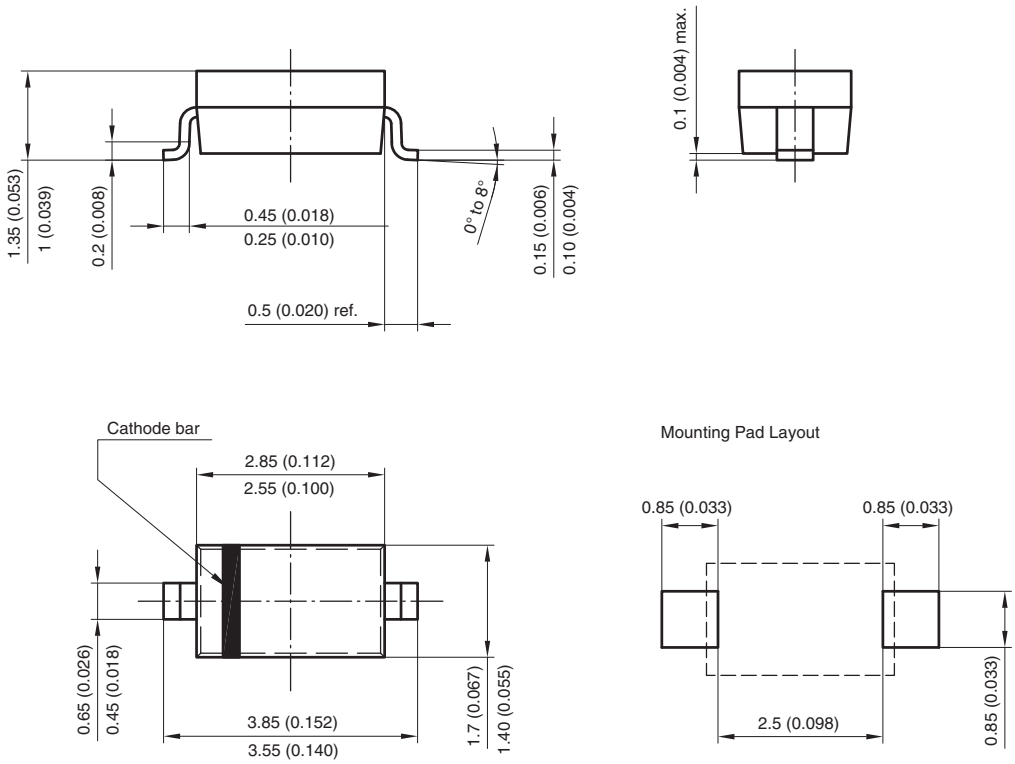



Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**

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