

Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified
- 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



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 | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS |
| BAS16D | BAS16D-E3-08 or BAS16D-E3-18 | Single diode | A6 | Tape and reel |
| | BAS16D-HE3-08 or BAS16D-HE3-18 | | | |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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 | $t = 1\text{ }\mu\text{s}$ | I_{FSM} | 2 | A |
| | $t = 1\text{ ms}$ | I_{FSM} | 1 | A |
| | $t = 1\text{ s}$ | I_{FSM} | 0.5 | A |
| Power dissipation ⁽¹⁾ | | P_{tot} | 350 | mW |

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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 | $^{\circ}\text{C}$ |
| Storage temperature range ⁽¹⁾ | | T_{stg} | - 65 to + 150 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | - 55 to + 150 | $^{\circ}\text{C}$ |

Note

⁽¹⁾ Valid provided electrodes are kept at ambient temperature

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

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Characteristics



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

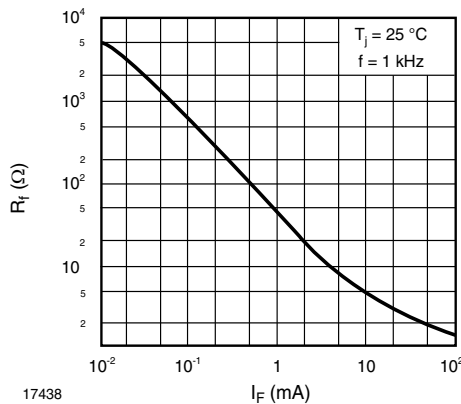


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

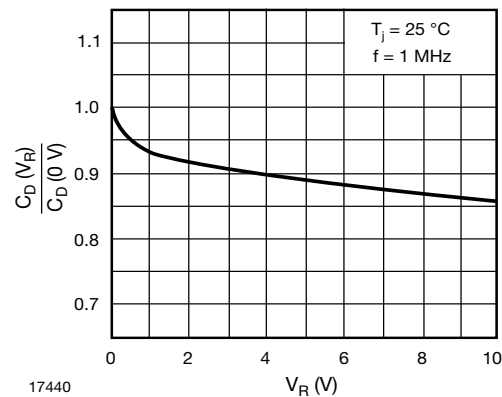


Fig. 4 - Relative Capacitance vs. Reverse Voltage



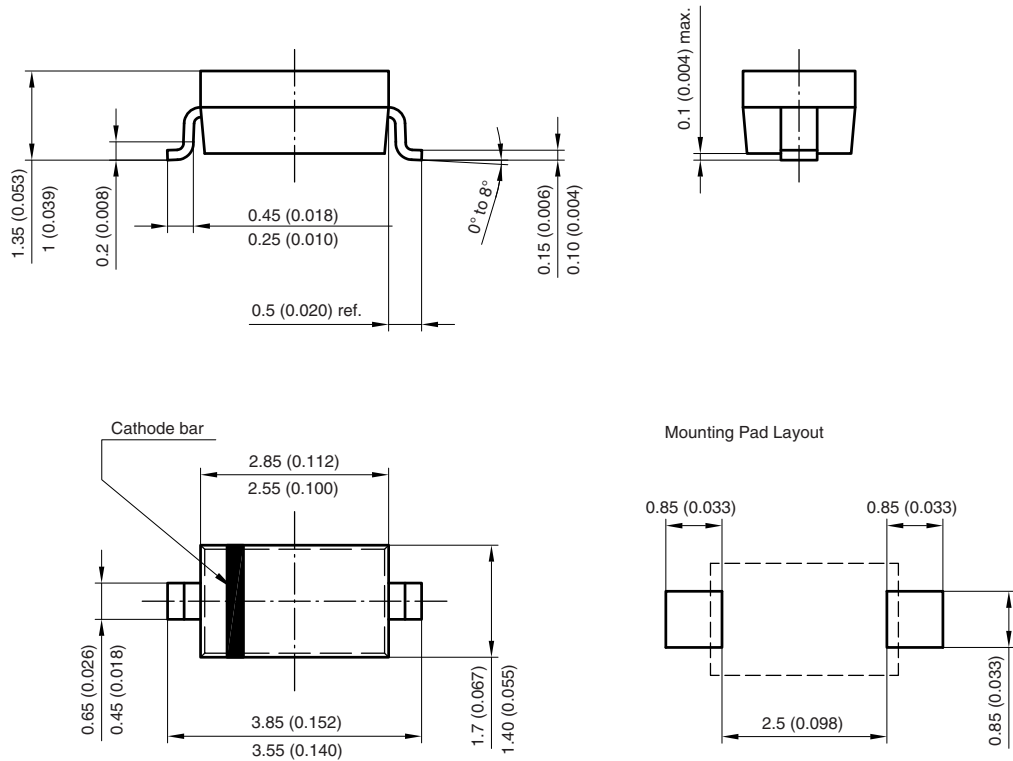
Fig. 5 - Leakage Current vs. Junction Temperature



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



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



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