

Small Signal Schottky Diode



LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: MiniMELF (SOD-80)

Weight: approx. 31 mg

Cathode band color: black

Packaging codes/options:

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

08/2.5K per 7" reel (8 mm tape), 12.5K/box

FEATURES

- For general purpose applications
- This diode features low turn-on voltage. The devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Applications where a very low forward voltage is required

PARTS TABLE

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | REMARKS |
|---------|--------------------------|-----------------------|---------------|
| BAS86-M | BAS85-M-18 or BAS86-M-08 | Single | Tape and reel |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|--|-----------|-------|------|
| Continuous reverse voltage | | V_R | 50 | V |
| Forward continuous current ⁽¹⁾ | | I_F | 200 | mA |
| Repetitive peak forward current ⁽¹⁾ | $t_p \leq 1\text{ s}, \delta \leq 0.5$ | I_{FRM} | 500 | mA |
| Power dissipation ⁽¹⁾ | | P_{tot} | 200 | mW |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

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} | 300 | K/W |
| Junction temperature | | T_J | 125 | $^{\circ}\text{C}$ |
| Ambient operating temperature range | | T_{amb} | -65 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_S | -65 to +150 | $^{\circ}\text{C}$ |

Note

⁽¹⁾ Valid provided that 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 |
|---------------------------|--|------------|------|------|------|---------------|
| Reverse breakdown voltage | $I_R = 10\text{ }\mu\text{A}$ (pulsed) | $V_{(BR)}$ | 50 | | | V |
| Leakage current | $V_R = 40\text{ V}$ | I_R | | | 5 | μA |
| Forward voltage | Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 0.1\text{ mA}$, $\delta < 2\%$ | V_F | | 200 | 300 | mV |
| | Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 1\text{ mA}$, $\delta < 2\%$ | V_F | | 275 | 380 | mV |
| | Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 10\text{ mA}$, $\delta < 2\%$ | V_F | | 365 | 450 | mV |
| | Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 30\text{ mA}$, $\delta < 2\%$ | V_F | | 460 | 600 | mV |
| | Pulse test $t_p < 300\text{ }\mu\text{s}$, $I_F = 100\text{ mA}$, $\delta < 2\%$ | V_F | | 700 | 900 | mV |
| Diode capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | C_D | | | 8 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}$, $I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$ | t_{rr} | | | 5 | ns |

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

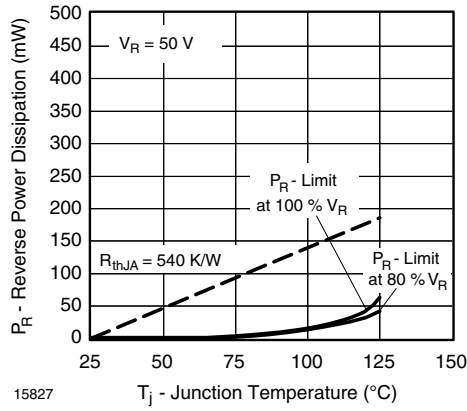


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

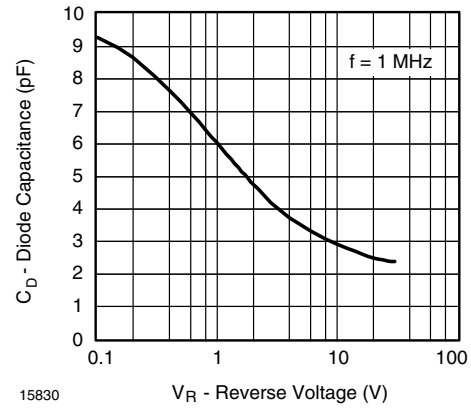


Fig. 4 - Diode Capacitance vs. Reverse Voltage

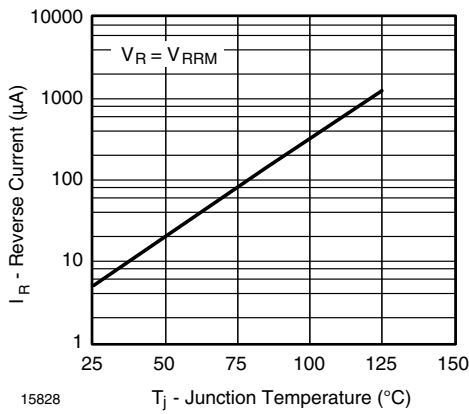


Fig. 2 - Reverse Current vs. Junction Temperature

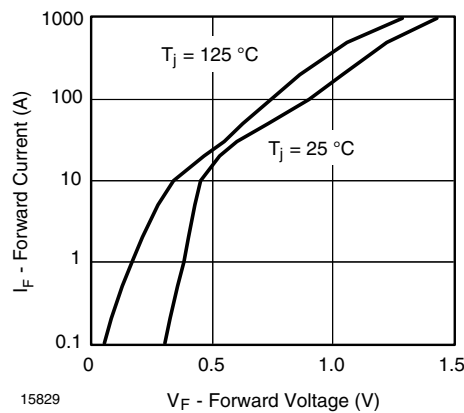
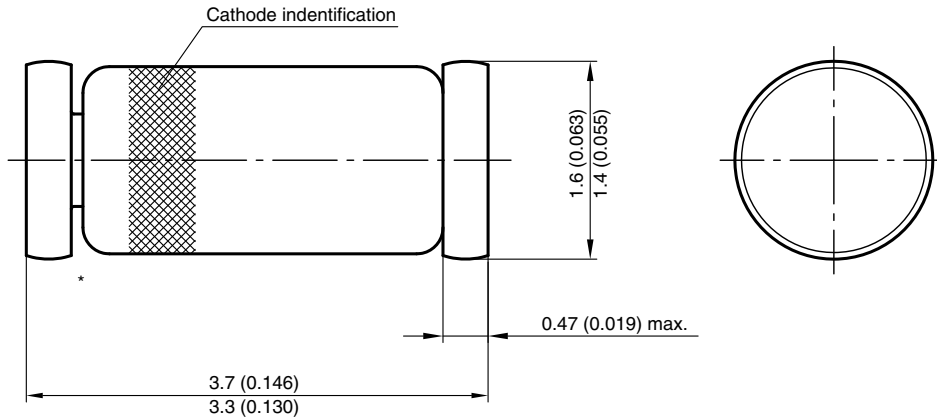


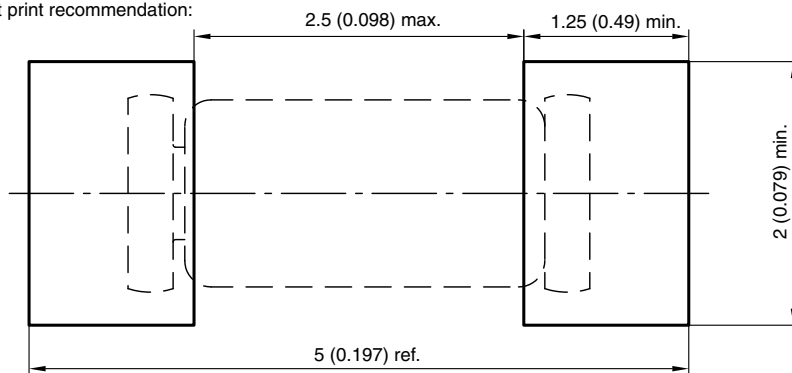
Fig. 3 - Forward Current vs. Forward Voltage

PACKAGE DIMENSIONS in millimeters (inches): **MiniMELF (SOD-80)**



* The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



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