# Small Signal Schottky Diode

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

3D Models Available

## MECHANICAL DATA

**Case:** MiniMELF (SOD-80)

**Weight:** approx. 31 mg

**Cathode band color:** black

**Packaging codes/options:**

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/2.5K 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
- This diode is also available in a DO-35 case with type designation BAT86
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

## APPLICATIONS

- Applications where a very low forward voltage is required

**PARTS TABLE**

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | REMARKS |
|---|---|---|---|
| BAS86 | BAS86-GS18 or BAS86-GS08 | Single | Tape and reel |

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Continuous reserve voltage | | $V_R$ | 50 | V |
| Forward continuous current (1) | | $I_F$ | 200 | mA |
| Repetitive peak forward current (1) | $t_p$ < 1 s, δ ≤ 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 °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 | °C |
| Ambient operating temperature range | | $T_{amb}$ | -65 to +125 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |

**Note**

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

| **ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Reserve breakdown voltage | $I_R$ = 10 µA (pulsed) | $V_{(BR)}$ | 50 | | | V |
| Leakage current | $V_R$ = 40 V | $I_R$ | | | 5 | µA |
| Forward voltage | Pulse test $t_p$ < 300 µs, $I_F$ = 0.1 mA, δ < 2 % | $V_F$ | | 200 | 300 | mV |
| | Pulse test $t_p$ < 300 µs, $I_F$ = 1 mA, δ < 2 % | $V_F$ | | 275 | 380 | mV |
| | Pulse test $t_p$ < 300 µs, $I_F$ = 10 mA, δ < 2 % | $V_F$ | | 365 | 450 | mV |
| | Pulse test $t_p$ < 300 µs, $I_F$ = 30 mA, δ < 2 % | $V_F$ | | 460 | 600 | mV |
| | Pulse test $t_p$ < 300 µs, $I_F$ = 100 mA, δ < 2 % | $V_F$ | | 700 | 900 | mV |
| Diode capacitance | $V_R$ = 1 V, f = 1 MHz | $C_D$ | | | 8 | pF |
| Reserve recovery time | $I_F$ = 10 mA, $I_R$ = 10 mA, $i_R$ = 1 mA | $t_{rr}$ | | | 5 | ns |

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

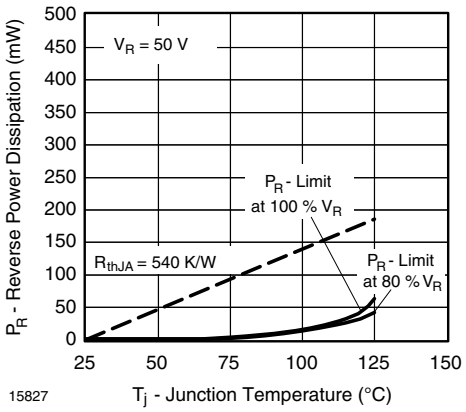



Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

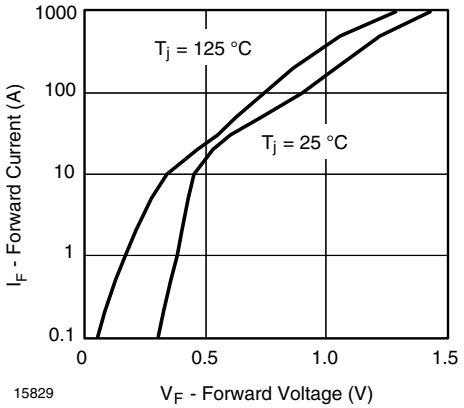



Fig. 3 - Forward Current vs. Forward Voltage

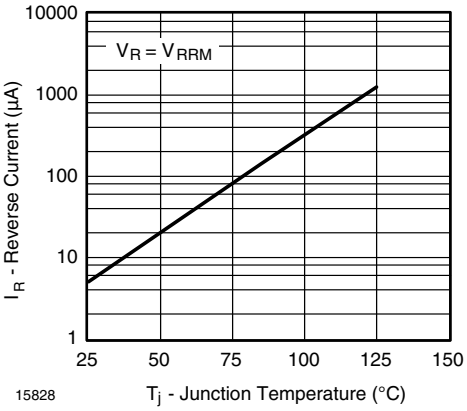



Fig. 2 - Reverse Current vs. Junction Temperature

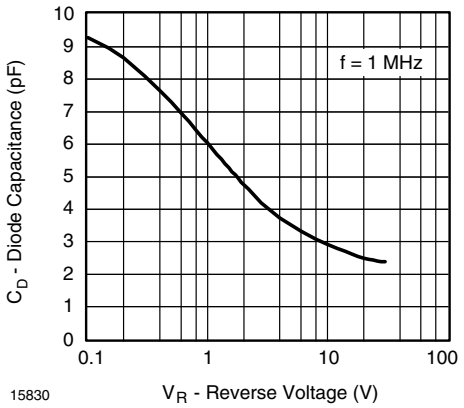
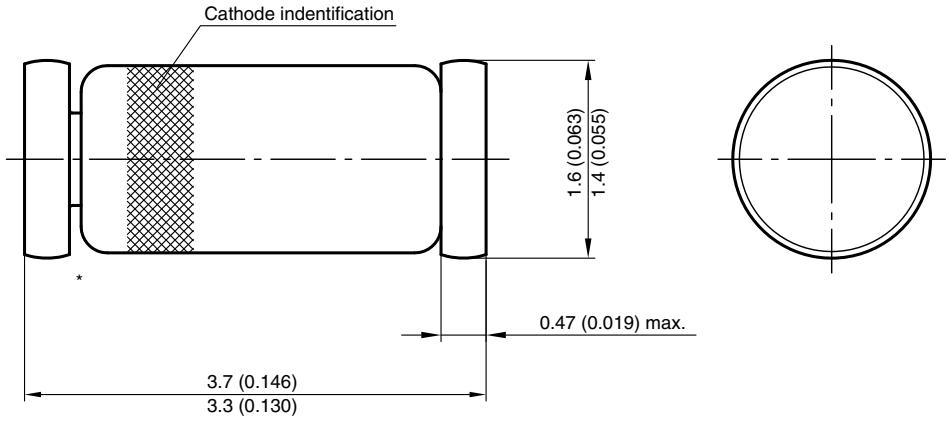


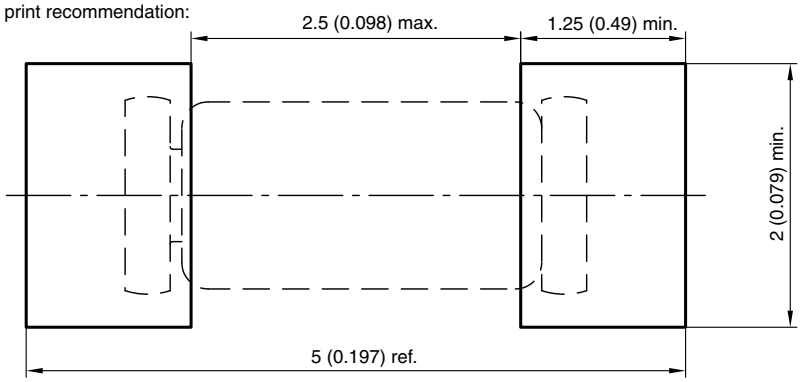

Fig. 4 - Diode Capacitance vs. Reverse Voltage

**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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