# Small Signal Schottky Diode

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

3D Models Available

## FEATURES

- For general purpose applications
- This diode features low turn-on voltage and high break-down voltage. This device is protected by a PN junction guardring against excessive voltage, such as electrostatic discharges
- This diode is also available in the DO-35 (DO-204AH) case with type designation BAT46 and in the SOD-123 case with type designation BAT46W-V
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb e2 RoHS COMPLIANT

## 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

**PARTS TABLE**

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
|---|---|---|---|---|
| LL46 | LL46-GS18 or LL46-GS08 | Single | - | Tape and reel |

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

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Repetitive peak reverse voltage | | $V_{RRM}$ | 100 | V |
| Forward continuous current (1) | | $I_F$ | 150 | mA |
| Repetitive peak forward current (1) | $t_p$ < 1 s, δ < 0.5 | $I_{FRM}$ | 350 | mA |
| Surge forward current (1) | $t_p$ = 10 ms | $I_{FSM}$ | 750 | mA |
| Power dissipation (1) | $T_{amb}$ = 80 °C | $P_{tot}$ | 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 | | $T_{amb}$ | -55 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** |
| Reverse breakdown voltage | $I_R$ = 100 µA (pulsed) | $V_{(BR)}$ | 100 | | | V |
| Leakage current (1) | $V_R$ = 1.5 V | $I_R$ | | | 0.5 | µA |
| | $V_R$ = 1.5 V, $T_j$ = 60 °C | $I_R$ | | | 5 | µA |
| | $V_R$ = 10 V | $I_R$ | | | 0.8 | µA |
| | $V_R$ = 10 V, $T_j$ = 60 °C | $I_R$ | | | 7.5 | µA |
| | $V_R$ = 50 V | $I_R$ | | | 2 | µA |
| | $V_R$ = 50 V, $T_j$ = 60 °C | $I_R$ | | | 15 | µA |
| | $V_R$ = 75 V | $I_R$ | | | 5 | µA |
| | $V_R$ = 75 V, $T_j$ = 60 °C | $I_R$ | | | 20 | µA |
| Forward voltage (1) | $I_F$ = 0.1 mA | $V_F$ | | | 250 | mV |
| | $I_F$ = 10 mA | $V_F$ | | | 450 | mV |
| | $I_F$ = 250 mA | $V_F$ | | | 1000 | mV |
| Diode capacitance | $V_R$ = 0 V, f = 1 MHz | $C_D$ | | 10 | | pF |
| | $V_R$ = 1 V, f = 1 MHz | $C_D$ | | 6 | | pF |

**Note**

(1) Pulse test $t_p$ < 300 µs, δ < 2 %

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

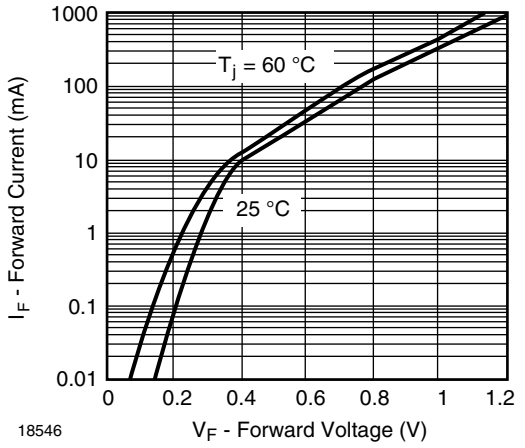



Fig. 1 - Typical Instantaneous Forward Characteristics

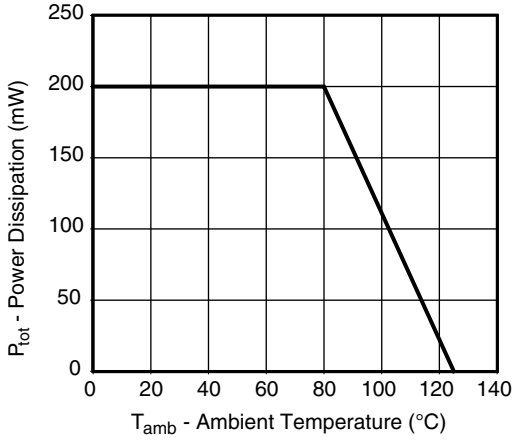



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

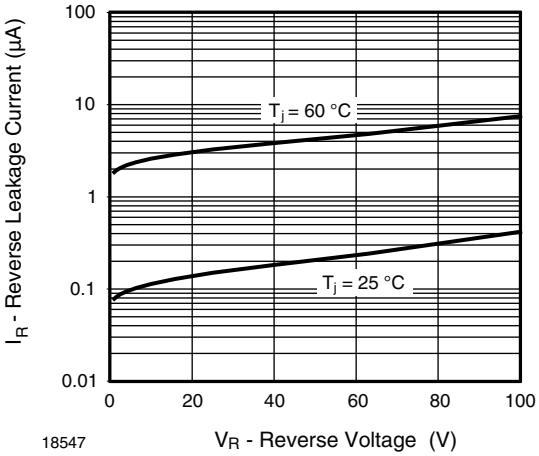
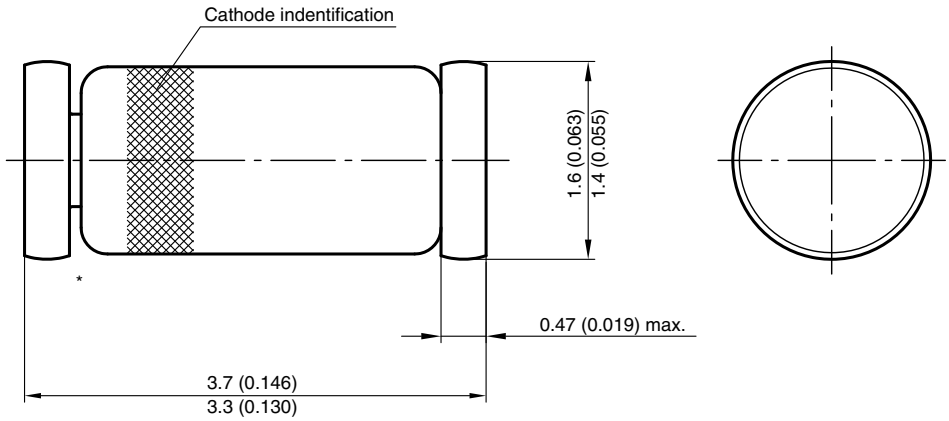


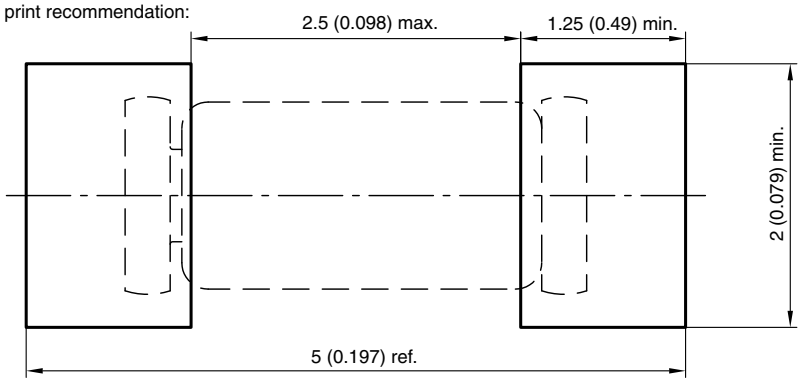

Fig. 2 - Typical Reverse Characteristics

**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:




Document no.:6.560-5005.01-4
Rev. 8 - Date: 07.June.2006
96 12070

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