

## Small Signal Schottky Diode



### 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 guarding 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
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


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### LINKS TO ADDITIONAL RESOURCES



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

| PARAMETER                                      | TEST CONDITION                         | SYMBOL    | VALUE | UNIT |
|--|--|-----------|-------|------|
| Repetitive peak reverse voltage                |  | $V_{RRM}$ | 100   | V    |
| Forward continuous current <sup>(1)</sup>      |  | $I_F$     | 150   | mA   |
| Repetitive peak forward current <sup>(1)</sup> | $t_p < 1\text{ s}, \delta < 0.5$       | $I_{FRM}$ | 350   | mA   |
| Surge forward current <sup>(1)</sup>           | $t_p = 10\text{ ms}$                   | $I_{FSM}$ | 750   | mA   |
| Power dissipation <sup>(1)</sup>               | $T_{amb} = 80\text{ }^{\circ}\text{C}$ | $P_{tot}$ | 200   | mW   |

**Note**
<sup>(1)</sup> 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 <sup>(1)</sup> |                | $R_{thJA}$ | 300         | K/W                |
| Junction temperature                                      |                | $T_j$      | 125         | $^{\circ}\text{C}$ |
| Ambient operating temperature range                       |                | $T_{amb}$  | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range                                 |                | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |

**Note**
<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |            |      |      |      |               |
|--|--|------------|------|------|------|---------------|
| PARAMETER  | TEST CONDITION   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
| Reverse breakdown voltage  | $I_R = 100\text{ }\mu\text{A}$ (pulsed)                | $V_{(BR)}$ | 100  |      |      | V             |
| Leakage current <sup>(1)</sup>   | $V_R = 1.5\text{ V}$                                   | $I_R$      |      |      | 0.5  | $\mu\text{A}$ |
|  | $V_R = 1.5\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$ | $I_R$      |      |      | 5    | $\mu\text{A}$ |
|  | $V_R = 10\text{ V}$                                    | $I_R$      |      |      | 0.8  | $\mu\text{A}$ |
|  | $V_R = 10\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$  | $I_R$      |      |      | 7.5  | $\mu\text{A}$ |
|  | $V_R = 50\text{ V}$                                    | $I_R$      |      |      | 2    | $\mu\text{A}$ |
|  | $V_R = 50\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$  | $I_R$      |      |      | 15   | $\mu\text{A}$ |
|  | $V_R = 75\text{ V}$                                    | $I_R$      |      |      | 5    | $\mu\text{A}$ |
| Forward voltage <sup>(1)</sup>   | $I_F = 0.1\text{ mA}$                                  | $V_F$      |      |      | 250  | mV            |
|  | $I_F = 10\text{ mA}$                                   | $V_F$      |      |      | 450  | mV            |
|  | $I_F = 250\text{ mA}$                                  | $V_F$      |      |      | 1000 | mV            |
| Diode capacitance  | $V_R = 0\text{ V}, f = 1\text{ MHz}$                   | $C_D$      |      | 10   |      | pF            |
|  | $V_R = 1\text{ V}, f = 1\text{ MHz}$                   | $C_D$      |      | 6    |      | pF            |

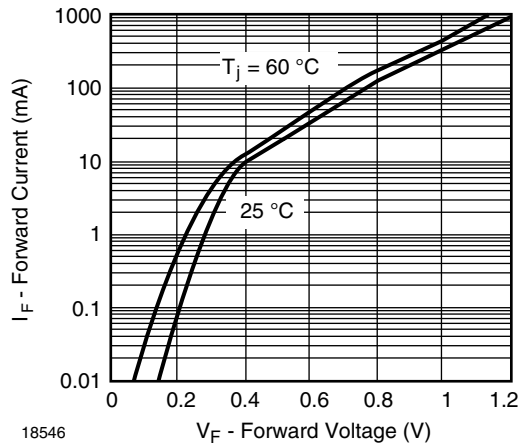
**Note**
<sup>(1)</sup> Pulse test  $t_p < 300\text{ }\mu\text{s}$ ,  $\delta < 2\%$ 
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Instantaneous Forward Characteristics

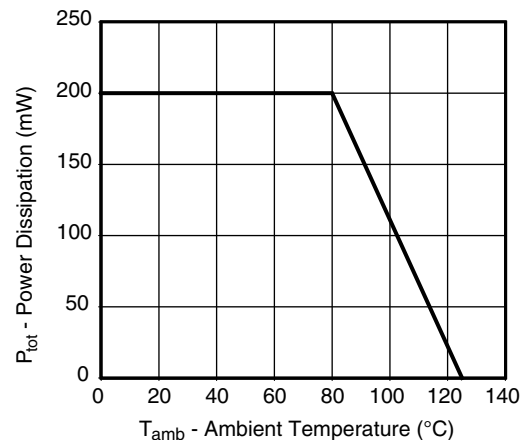


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

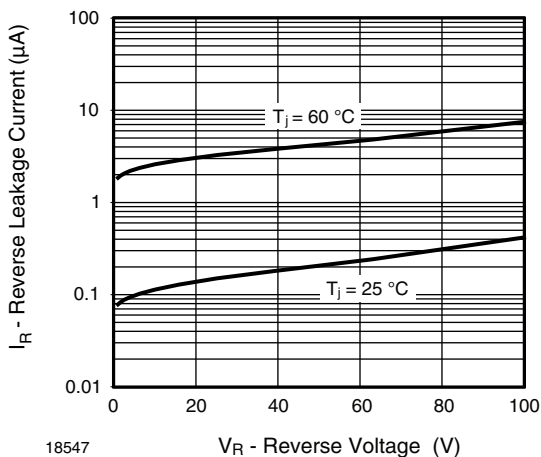
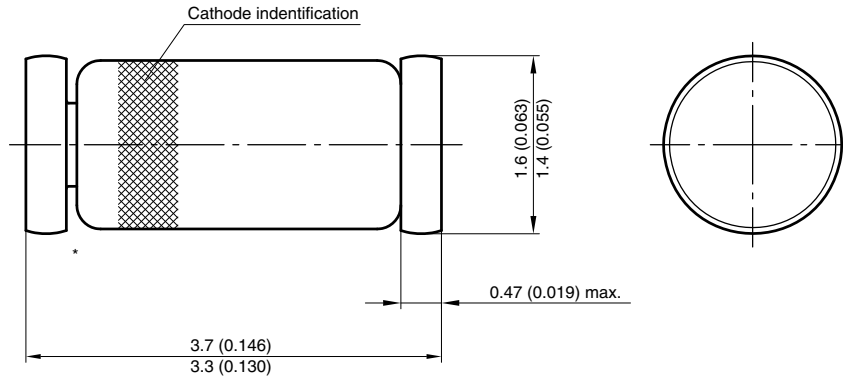
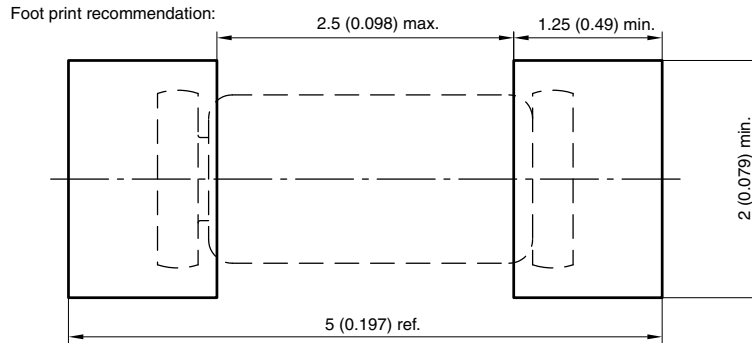


Fig. 2 - Typical Reverse Characteristics

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



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



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