

## Small Signal Schottky Diode



### 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### APPLICATIONS

- Applications where a very low forward voltage is required

### PARTS TABLE

| PART  | ORDERING CODE            | INTERNAL CONSTRUCTION | REMARKS       |
|-------|--------------------------|-----------------------|---------------|
| BAS86 | BAS86-GS18 or BAS86-GS08 | Single diode          | Tape and reel |

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

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

#### Note

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

### THERMAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , 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                       |                | $T_{amb}$  | - 65 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                                                                                | $I_R = 10\text{ }\mu\text{A}$ (pulsed)                                                | $V_{(BR)}$ | 50   |      |      | V             |
| Leakage current                                                                                          | $V_R = 40\text{ V}$                                                                   | $I_R$      |      |      | 5    | $\mu\text{A}$ |
| Forward voltage                                                                                          | Pulse test $t_p < 300\text{ }\mu\text{s}$ ,<br>$I_F = 0.1\text{ mA}$ , $\delta < 2\%$ | $V_F$      |      | 200  | 300  | mV            |
|                                                                                                          | Pulse test $t_p < 300\text{ }\mu\text{s}$ ,<br>$I_F = 1\text{ mA}$ , $\delta < 2\%$   | $V_F$      |      | 275  | 380  | mV            |
|                                                                                                          | Pulse test $t_p < 300\text{ }\mu\text{s}$ ,<br>$I_F = 10\text{ mA}$ , $\delta < 2\%$  | $V_F$      |      | 365  | 450  | mV            |
|                                                                                                          | Pulse test $t_p < 300\text{ }\mu\text{s}$ ,<br>$I_F = 30\text{ mA}$ , $\delta < 2\%$  | $V_F$      |      | 460  | 600  | mV            |
|                                                                                                          | Pulse test $t_p < 300\text{ }\mu\text{s}$ ,<br>$I_F = 100\text{ mA}$ , $\delta < 2\%$ | $V_F$      |      | 700  | 900  | mV            |
| Diode capacitance                                                                                        | $V_R = 1\text{ V}$ , $f = 1\text{ MHz}$                                               | $C_D$      |      |      | 8    | pF            |
| Reverse recovery time                                                                                    | $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ ,<br>$i_R = 1\text{ mA}$                  | $t_{rr}$   |      |      | 5    | ns            |

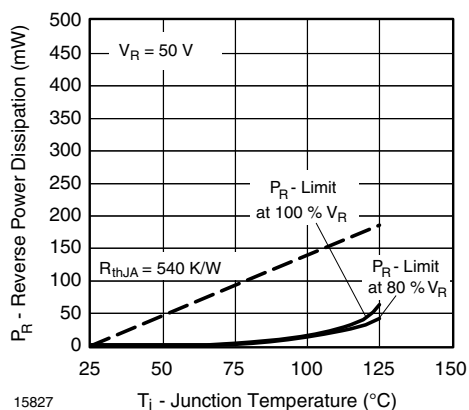
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

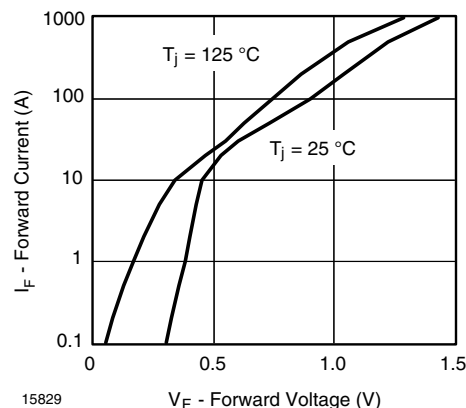


Fig. 3 - Forward Current vs. Forward Voltage

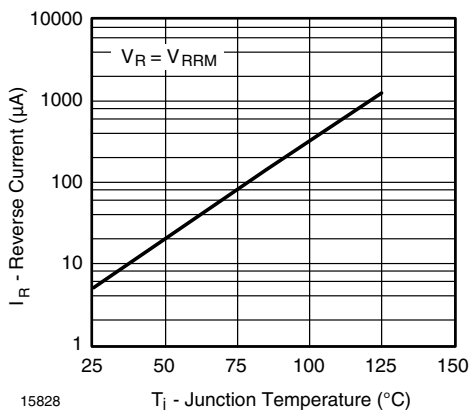


Fig. 2 - Reverse Current vs. Junction Temperature

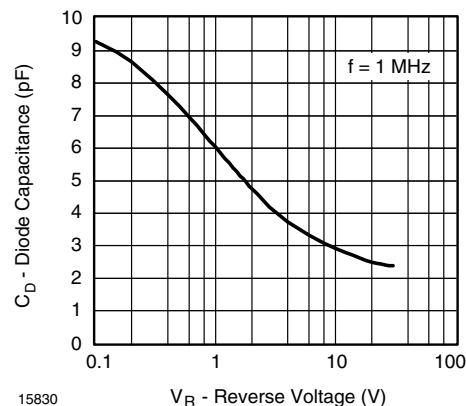
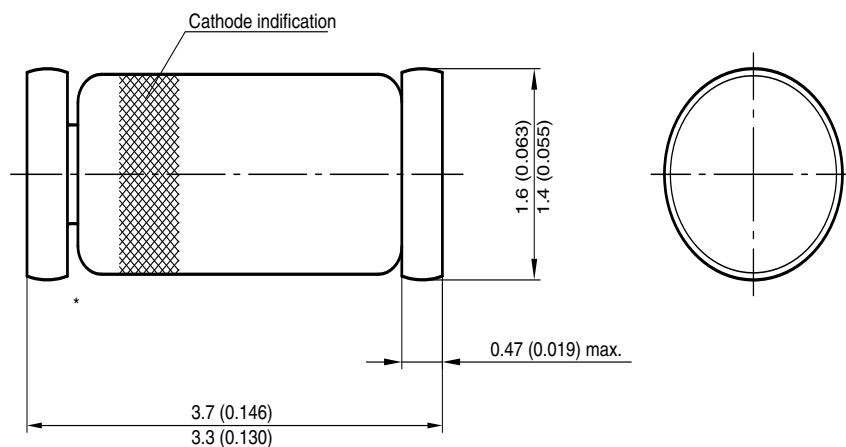
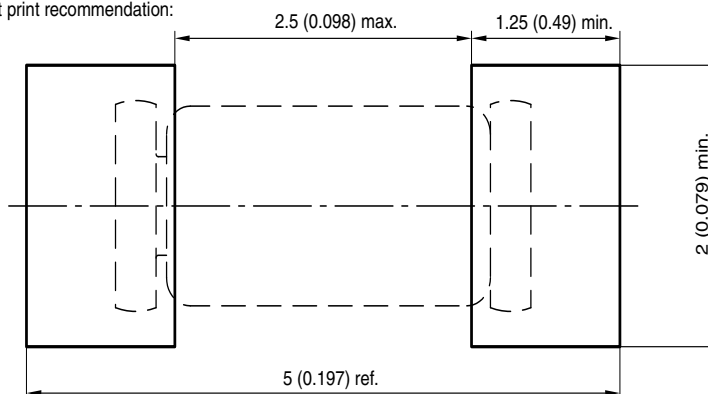


Fig. 4 - Diode Capacitance vs. Reverse Voltage

**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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