

## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diode
- 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

- General purposes

### 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   | TYPE DIFFERENTIATION     | ORDERING CODE              | TYPE MARKING | INTERNAL CONSTRUCTION | REMARKS       |
|--------|--------------------------|----------------------------|--------------|-----------------------|---------------|
| BAV100 | $V_{RRM} = 60\text{ V}$  | BAV100-GS18 or BAV100-GS08 | -            | Single diode          | Tape and reel |
| BAV101 | $V_{RRM} = 120\text{ V}$ | BAV101-GS18 or BAV101-GS08 | -            | Single diode          | Tape and reel |
| BAV102 | $V_{RRM} = 200\text{ V}$ | BAV102-GS18 or BAV102-GS08 | -            | Single diode          | Tape and reel |
| BAV103 | $V_{RRM} = 250\text{ V}$ | BAV103-GS18 or BAV103-GS08 | -            | Single diode          | Tape and reel |

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

| PARAMETER                       | TEST CONDITION     | PART   | SYMBOL    | VALUE | UNIT |
|---------------------------------|--------------------|--------|-----------|-------|------|
| Repetitive peak reverse voltage |                    | BAV100 | $V_{RRM}$ | 60    | V    |
|                                 |                    | BAV101 | $V_{RRM}$ | 120   | V    |
|                                 |                    | BAV102 | $V_{RRM}$ | 200   | V    |
|                                 |                    | BAV103 | $V_{RRM}$ | 250   | V    |
| Reverse voltage                 |                    | BAV100 | $V_R$     | 50    | V    |
|                                 |                    | BAV101 | $V_R$     | 100   | V    |
|                                 |                    | BAV102 | $V_R$     | 150   | V    |
|                                 |                    | BAV103 | $V_R$     | 200   | V    |
| Peak forward surge current      | $t_p = 1\text{ s}$ |        | $I_{FSM}$ | 1     | A    |
| Repetitive peak forward current |                    |        | $I_{FRM}$ | 625   | mA   |
| Forward continuous current      |                    |        | $I_F$     | 250   | mA   |
| Power dissipation               |                    |        | $P_{tot}$ | 500   | mW   |

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

| PARAMETER                                  | TEST CONDITION                        | SYMBOL     | VALUE         | UNIT               |
|--------------------------------------------|---------------------------------------|------------|---------------|--------------------|
| Thermal resistance junction to lead        |                                       | $R_{thJL}$ | 350           | K/W                |
| Thermal resistance junction to ambient air | On PC board<br>50 mm x 50 mm x 1.6 mm | $R_{thJA}$ | 500           | K/W                |
| Junction temperature                       |                                       | $T_j$      | 175           | $^{\circ}\text{C}$ |
| Storage temperature range                  |                                       | $T_{stg}$  | - 65 to + 175 | $^{\circ}\text{C}$ |

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

| PARAMETER                    | TEST CONDITION                                                                  | PART   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
|------------------------------|---------------------------------------------------------------------------------|--------|------------|------|------|------|---------------|
| Forward voltage              | $I_F = 100\text{ mA}$                                                           |        | $V_F$      |      |      | 1    | V             |
| Reverse current              | $V_R = 50\text{ V}$                                                             | BAV100 | $I_R$      |      |      | 100  | nA            |
|                              | $V_R = 100\text{ V}$                                                            | BAV101 | $I_R$      |      |      | 100  | nA            |
|                              | $V_R = 150\text{ V}$                                                            | BAV102 | $I_R$      |      |      | 100  | nA            |
|                              | $V_R = 200\text{ V}$                                                            | BAV103 | $I_R$      |      |      | 100  | nA            |
|                              | $T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 50\text{ V}$                       | BAV100 | $I_R$      |      |      | 15   | $\mu\text{A}$ |
|                              | $T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 100\text{ V}$                      | BAV101 | $I_R$      |      |      | 15   | $\mu\text{A}$ |
|                              | $T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 150\text{ V}$                      | BAV102 | $I_R$      |      |      | 15   | $\mu\text{A}$ |
|                              | $T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 200\text{ V}$                      | BAV103 | $I_R$      |      |      | 15   | $\mu\text{A}$ |
| Breakdown voltage            | $I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ ,<br>$t_p = 0.3\text{ ms}$      | BAV100 | $V_{(BR)}$ | 60   |      |      | V             |
|                              | $I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ ,<br>$t_p = 0.3\text{ ms}$      | BAV101 | $V_{(BR)}$ | 120  |      |      | V             |
|                              | $I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ ,<br>$t_p = 0.3\text{ ms}$      | BAV102 | $V_{(BR)}$ | 200  |      |      | V             |
|                              | $I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ ,<br>$t_p = 0.3\text{ ms}$      | BAV103 | $V_{(BR)}$ | 250  |      |      | V             |
| Diode capacitance            | $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$ ,<br>$V_{HF} = 50\text{ mV}$            |        | $C_D$      |      | 1.5  |      | pF            |
| Differential forward current | $I_F = 10\text{ mA}$                                                            |        | $r_f$      |      | 5    |      | $\Omega$      |
| Reverse recovery time        | $I_F = I_R = 30\text{ mA}$ ,<br>$i_R = 3\text{ mA}$ , $R_L = 100\text{ }\Omega$ |        | $t_{rr}$   |      |      | 50   | ns            |

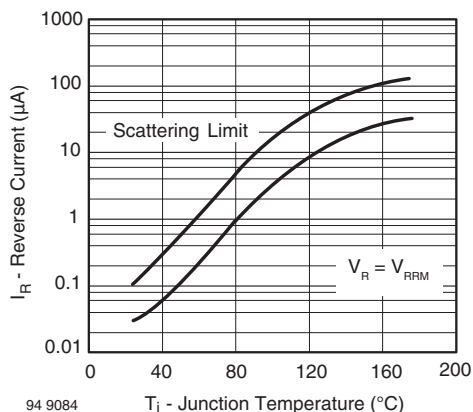
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Fig. 1 - Reverse Current vs. Junction Temperature

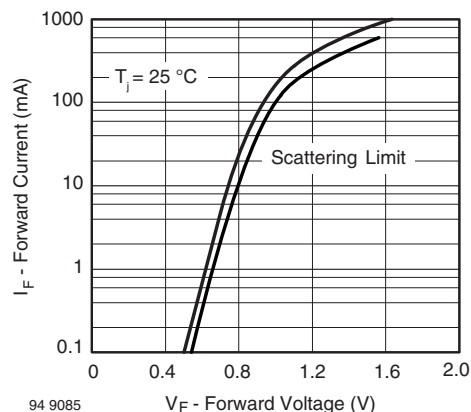


Fig. 2 - Forward Current vs. Forward Voltage

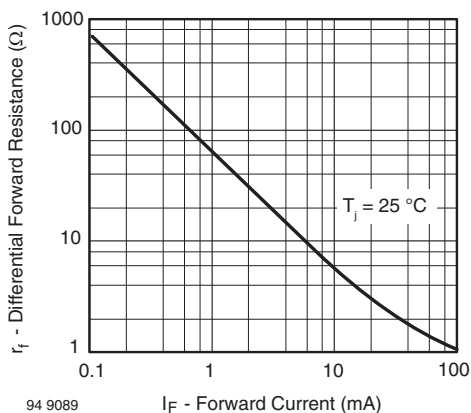
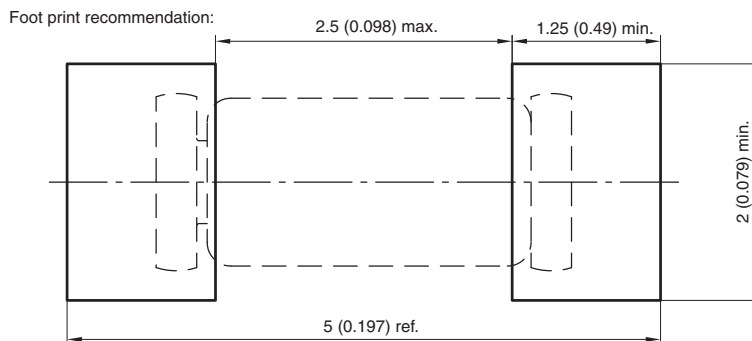
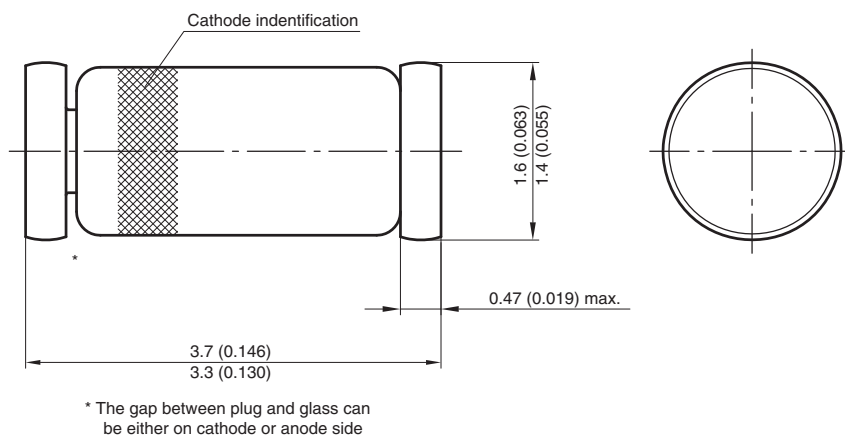


Fig. 3 - Differential Forward Resistance vs. Forward Current

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



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