

# High Voltage, General Purpose Diode

## BAV102

### Description

A general purpose diode that couples high forward conductance fast switching speed and high blocking voltages in a glass leadless LL-34 surface mount package. Placement of the expansion gap has no relationship to the location of the cathode terminal which is indicated by the first color band.

### ABSOLUTE MAXIMUM RATINGS

( $T_A = 25^\circ\text{C}$  unless otherwise noted) (Note 1)

| Symbol    | Parameter   | Value       | Units            |
|-----------|---|-------------|------------------|
| $W_{IV}$  | Working Inverse Voltage   | 150         | V                |
| $I_O$     | Average Rectified Current   | 200         | mA               |
| $I_F$     | DC Forward Current  | 500         | mA               |
| $i_f$     | Recurrent Peak Forward Current  | 600         | mA               |
| $I_{FSM}$ | Non-repetitive Peak Forward Current<br>Pulse Width = 1.0 s<br>Pulse Width = 1.0 $\mu\text{s}$ | 1.0<br>4.0  | A                |
| $T_{STG}$ | Storage Temperature Range   | -65 to +200 | $^\circ\text{C}$ |
| $T_J$     | Operating Junction Temperature  | -65 to +200 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### THERMAL CHARACTERISTICS

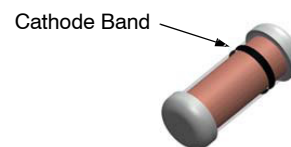
| Symbol          | Parameter  | Value | Units                |
|-----------------|--|-------|----------------------|
| $P_D$           | Power Dissipation                                    | 500   | mW                   |
|                 | Linear Derating Factor from $T_A = 25^\circ\text{C}$ | 3.33  | mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient              | 350   | $^\circ\text{C}$     |

### ELECTRICAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Symbol   | Parameter             | Conditions   | Min | Max  | Units         |
|----------|-----------------------|--|-----|------|---------------|
| $V_R$    | Breakdown Voltage     | $I_R = 100 \mu\text{A}$  | 200 | –    | V             |
| $V_F$    | Forward Voltage       | $I_F = 100 \text{ mA}$   | –   | 1.00 | V             |
|          |                       | $I_F = 200 \text{ mA}$   | –   | 1.25 | V             |
| $I_R$    | Reverse Current       | $V_R = 150 \text{ V}$  | –   | 100  | nA            |
|          |                       | $V_R = 150 \text{ V}, T_A = 150^\circ\text{C}$                       | –   | 100  | $\mu\text{A}$ |
| $C_T$    | Total Capacitance     | $V_R = 0, f = 1.0 \text{ MHz}$                                       | –   | 5.0  | pF            |
| $t_{rr}$ | Reverse Recovery Time | $I_F = I_R = 30 \text{ mA}, I_{RR} = 1 \text{ mA}, R_L = 100 \Omega$ | –   | 50   | ns            |

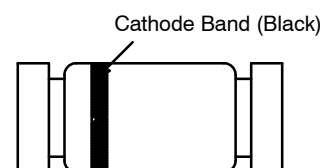
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



MiniMELF / SOD-80  
CASE 100AD

(Color Band Denotes Cathode)

### MARKING DIAGRAM



(1st band denotes cathode terminal and has wider width)

BAV102 = Specific Device Code

### ORDERING INFORMATION

| Device | Package             | Shipping <sup>†</sup>        |
|--------|---------------------|------------------------------|
| BAV102 | SOD-80<br>(Pb-Free) | 2,500 Units /<br>Tape & Reel |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

## TYPICAL PERFORMANCE CHARACTERISTICS

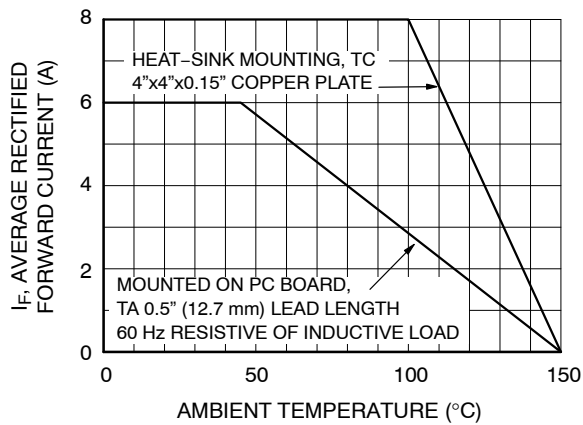


Figure 1. Forward Current Derating Curve

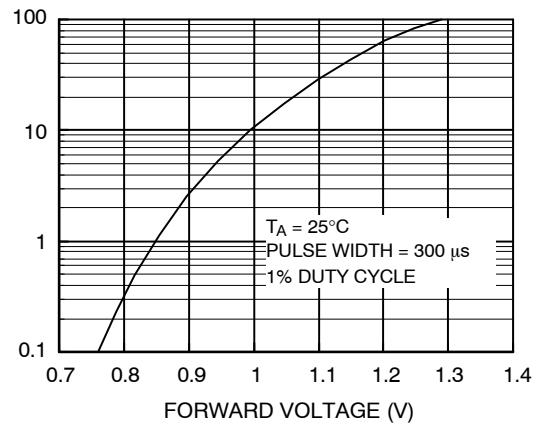


Figure 2. Forward Characteristics

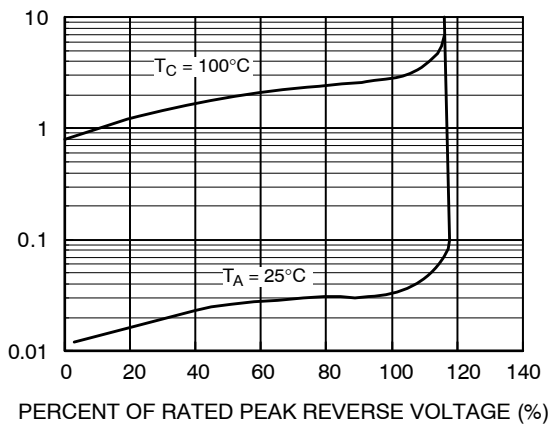


Figure 3. Reverse Characteristics

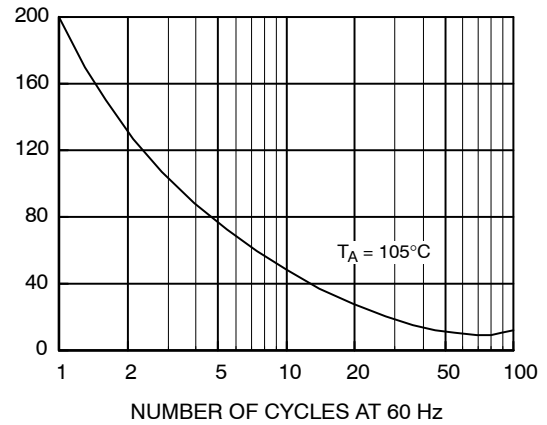


Figure 4. Non-Repetitive Surge Current

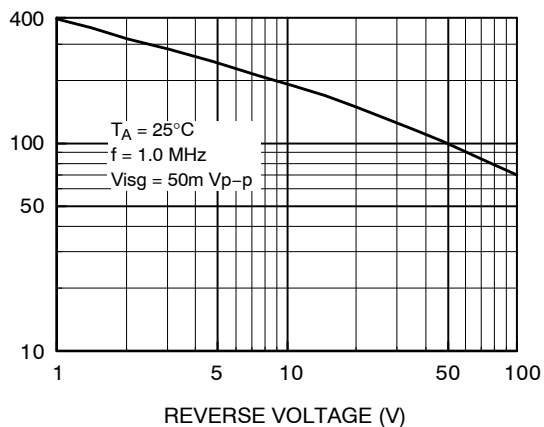
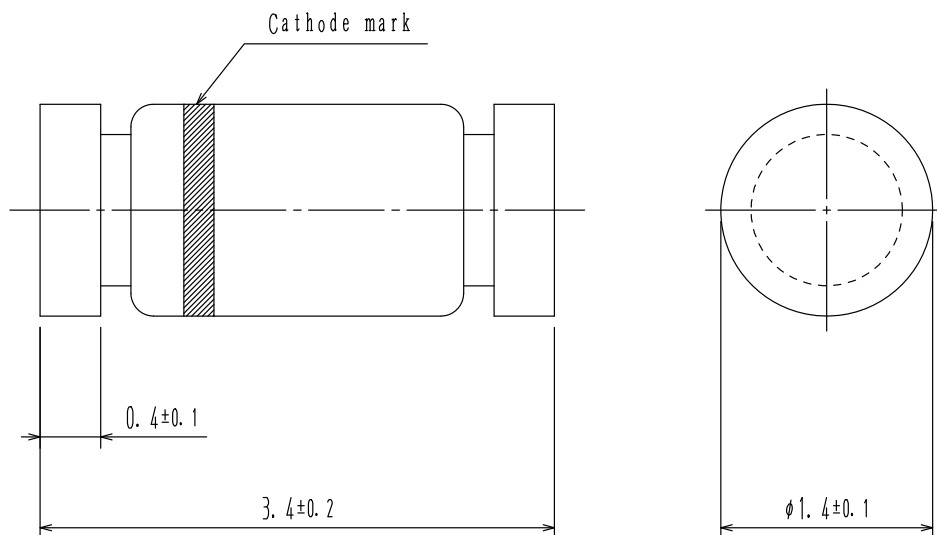


Figure 5. Junction Capacitance

**MiniMELF / SOD-80**  
**CASE 100AD**  
**ISSUE O**

DATE 30 APR 2012



NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-213, VARIATION AC.

B) ALL DIMENSIONS ARE IN MILLIMETERS.

 CORNER RADIUS IS OPTIONAL.

D) DRAWING FILE NAME: SOD80A REV01

|                         |                          |   |
|-------------------------|--------------------------|---|
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| <b>DESCRIPTION:</b>     | <b>MINIMELF / SOD-80</b> | <b>PAGE 1 OF 1</b>  |

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