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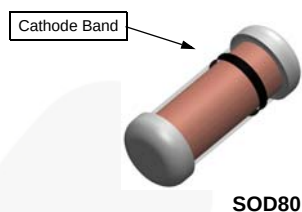
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# BAV102

## High Voltage, General Purpose Diode



### 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<sup>(1)</sup>

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| 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 | Pulse Width = 1.0 s             | 1.0         | A                |
|           |                                     | Pulse Width = 1.0 $\mu\text{s}$ | 4.0         | A                |
| $T_{STG}$ | Storage Temperature Range           |                                 | -65 to +200 | $^\circ\text{C}$ |
| $T_J$     | Operating Junction Temperature      |                                 | -65 to +200 | $^\circ\text{C}$ |

#### Note:

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   | $^\circ\text{C/W}$   |

**Electrical Characteristics**Values are at  $T_C = 25^\circ\text{C}$  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     | $V_R = 0, f = 1.0\ \text{MHz}$                                            |      | 5.00 | pF            |
| $t_{rr}$ | Reverse Recovery Time | $I_F = I_R = 30\ \text{mA}, I_{RR} = 1\ \text{mA}$<br>$R_L = 100\ \Omega$ |      | 50   | ns            |

## Typical Performance Characteristics

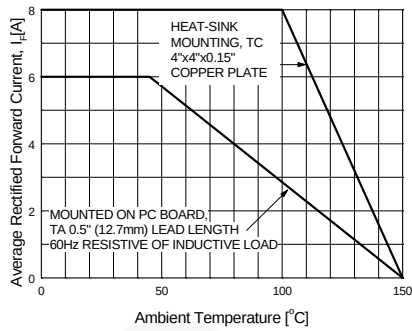


Figure 1. Forward Current Derating Curve

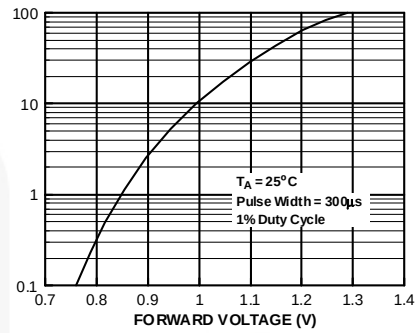


Figure 2. Forward Characteristics

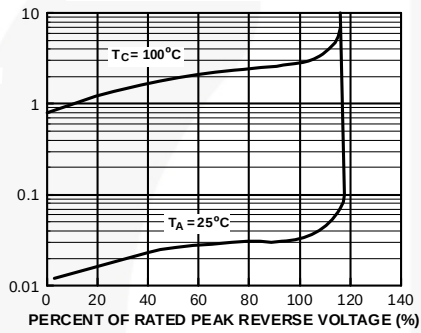


Figure 3. Reverse Characteristics

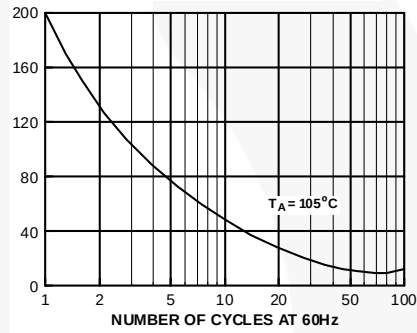


Figure 4. Non-Repetitive Surge Current

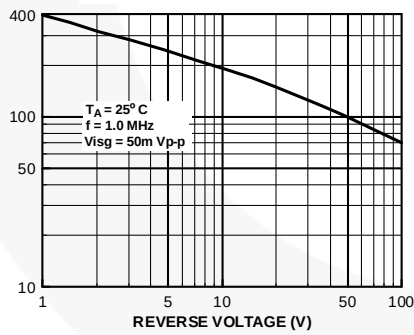
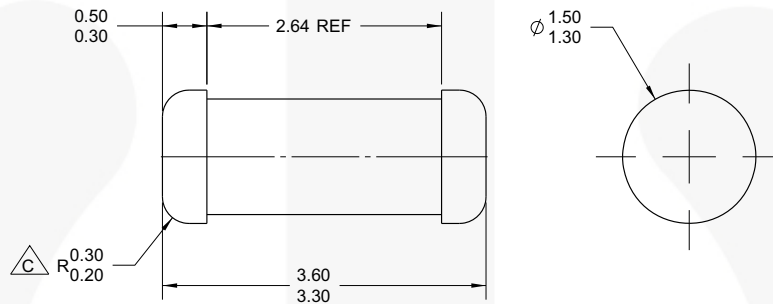


Figure 5. Junction Capacitance

## Physical Dimensions

## SOD-80



NOTES: UNLESS OTHERWISE SPECIFIED

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

B) ALL DIMENSIONS ARE IN MILLIMETERS.

 $\triangle C$  CORNER RADIUS IS OPTIONAL.

D) DRAWING FILE NAME: SOD80A REV01

**Figure 6. 2-TERMINAL, SOD-80, JEDEC DO-213AC, MINI-MELF**

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|  | MicroPak™                                      | STEALTH™                                                                          | UHC®                                                                                |
| Fairchild®                                                                        | MicroPak2™                                     | SuperFET™                                                                         | Ultra FRFET™                                                                        |
| Fairchild Semiconductor®                                                          | MillerDrive™                                   | SuperSOT™-3                                                                       | UniFET™                                                                             |
| FACT Quiet Series™                                                                | MotionMax™                                     | SuperSOT™-6                                                                       | VCX™                                                                                |
| FACT®                                                                             | mWSaver™                                       | SuperSOT™-8                                                                       | VisualMax™                                                                          |
| FAST®                                                                             | OptoHiT™                                       | SupreMOS®                                                                         | VoltagePlus™                                                                        |
| FastvCore™                                                                        | OPTOLOGIC®                                     | SyncFET™                                                                          | XS™                                                                                 |
| FETBench™                                                                         | OPTOPLANAR®                                    |                                                                                   |                                                                                     |

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