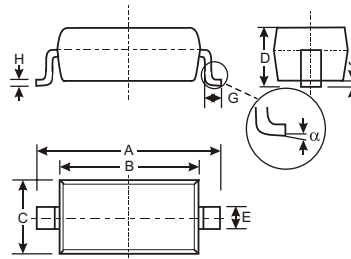


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- Also Available in Lead Free Version

### Mechanical Data

- Case: SOD-123, Molded Plastic
- Case Material: UL Flammability Rating Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please See Ordering Information, Note 4, on Page 2
- Polarity: Cathode Band
- Marking: Date Code and Type Code, See Page 3  
Type Code: T6, T4
- Weight: 0.01 grams (approx.)
- Weight: 0.01 grams (approx.)
- Ordering Information: See Page 2



| SOD-123              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 3.55         | 3.85 |
| B                    | 2.55         | 2.85 |
| C                    | 1.40         | 1.70 |
| D                    | —            | 1.35 |
| E                    | 0.55 Typical |      |
| G                    | 0.25         | —    |
| H                    | 0.11 Typical |      |
| J                    | —            | 0.10 |
| $\alpha$             | 0°           | 8°   |
| All Dimensions in mm |              |      |

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic  | Symbol                          | Value       | Unit                      |
|---|---------------------------------|-------------|---------------------------|
| Non-Repetitive Peak Reverse Voltage   | $V_{RM}$                        | 100         | V                         |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage  | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 75          | V                         |
| RMS Reverse Voltage   | $V_{R(RMS)}$                    | 53          | V                         |
| Forward Continuous Current  | $I_{FM}$                        | 300         | mA                        |
| Average Rectified Output Current  | $I_O$                           | 150         | mA                        |
| Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$<br>@ $t = 1.0\text{s}$ | $I_{FSM}$                       | 2.0<br>1.0  | A                         |
| Power Dissipation (Note 2)  | $P_d$                           | 400         | mW                        |
| Thermal Resistance Junction to Ambient Air (Note 2)                                     | $R_{\theta JA}$                 | 315         | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range   | $T_j, T_{STG}$                  | -65 to +150 | $^\circ\text{C}$          |

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                     | Symbol      | Min | Max                           | Unit  | Test Condition   |
|------------------------------------|-------------|-----|-------------------------------|---|--|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | 75  | —                             | V   | $I_R = 1.0\mu\text{A}$   |
| Forward Voltage (Note 1)           | $V_{FM}$    | —   | 0.715<br>0.855<br>1.0<br>1.25 | V   | $I_F = 1.0\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 50\text{mA}$<br>$I_F = 150\text{mA}$   |
| Peak Reverse Current (Note 1)      | $I_{RM}$    | —   | 1.0<br>50<br>30<br>25         | $\mu\text{A}$<br>$\mu\text{A}$<br>$\mu\text{A}$<br>nA | $V_R = 75\text{V}$<br>$V_R = 75\text{V}, T_j = 150^\circ\text{C}$<br>$V_R = 25\text{V}, T_j = 150^\circ\text{C}$<br>$V_R = 20\text{V}$ |
| Total Capacitance                  | $C_T$       | —   | 2.0                           | pF  | $V_R = 0, f = 1.0\text{MHz}$   |
| Reverse Recovery Time              | $t_{rr}$    | —   | 4.0                           | ns  | $I_F = I_R = 10\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$  |

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. Part mounted on FR-4 PC board with minimum recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

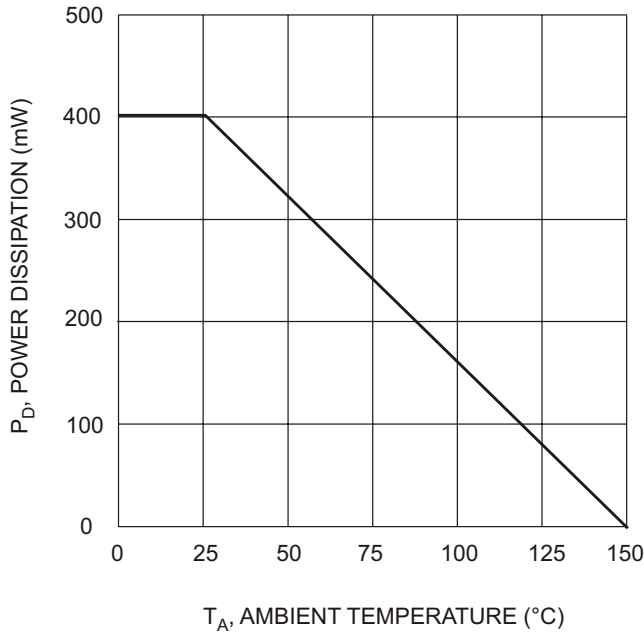


Fig. 1 Power Derating Curve

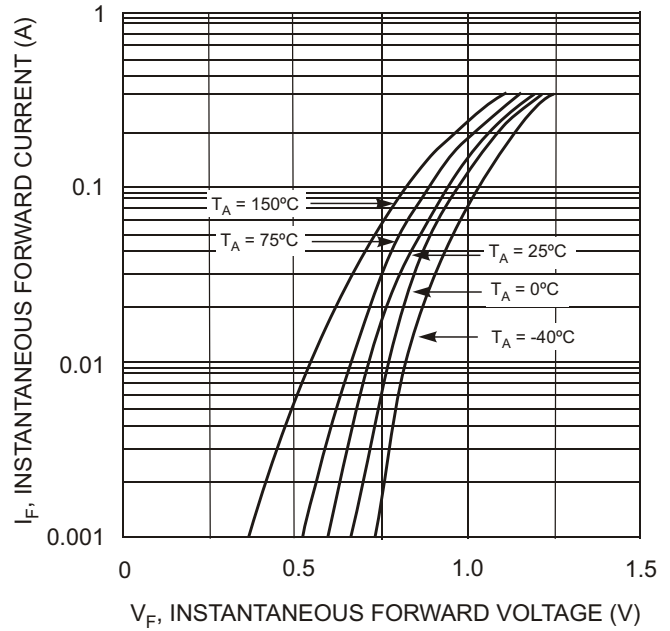


Fig. 2 Forward Characteristics

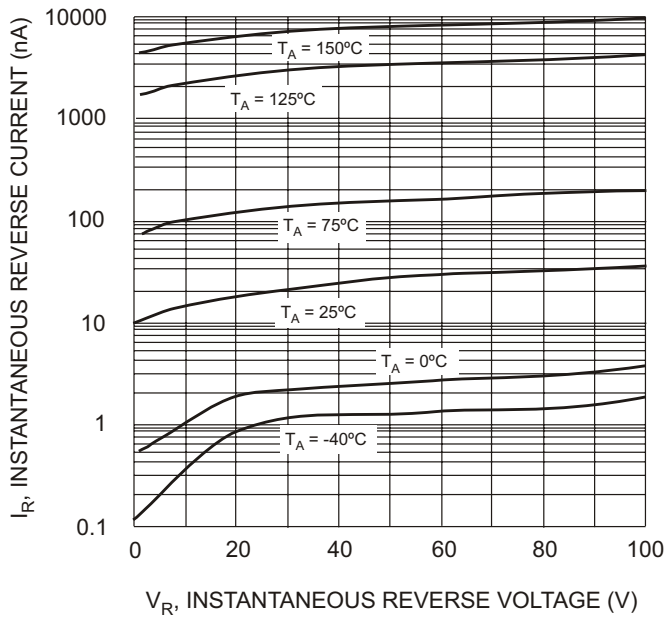


Fig. 3 Typical Reverse Characteristics

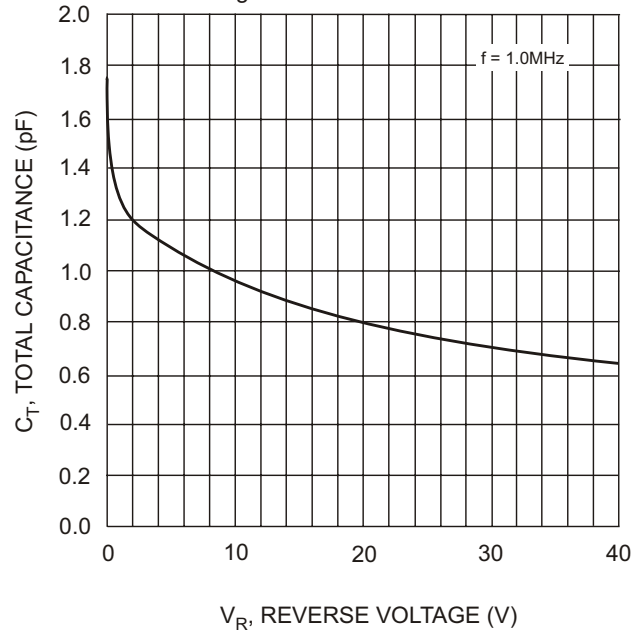


Fig. 4 Typical Capacitance vs. Reverse Voltage

**Ordering Information** (Note 3)

| Device    | Packaging | Shipping         |
|-----------|-----------|------------------|
| BAV16W-7  | SOD-123   | 3000/Tape & Reel |
| 1N4148W-7 | SOD-123   | 3000/Tape & Reel |

- Notes:
3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  4. For Lead Free version (with Lead Free terminal finish) part number, please add "-F" suffix to part number above.  
Example: 1N4148W-7-F.

**Marking Information**



XX = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

|              |             |             |              |             |             |             |             |             |             |             |             |             |
|--------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Year</b>  | <b>1998</b> | <b>1999</b> | <b>2000</b>  | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
| <b>Code</b>  | J           | K           | L            | M           | N           | P           | R           | S           | T           | U           | V           | W           |
| <b>Month</b> | <b>Jan</b>  | <b>Feb</b>  | <b>March</b> | <b>Apr</b>  | <b>May</b>  | <b>Jun</b>  | <b>Jul</b>  | <b>Aug</b>  | <b>Sep</b>  | <b>Oct</b>  | <b>Nov</b>  | <b>Dec</b>  |
| <b>Code</b>  | 1           | 2           | 3            | 4           | 5           | 6           | 7           | 8           | 9           | O           | N           | D           |