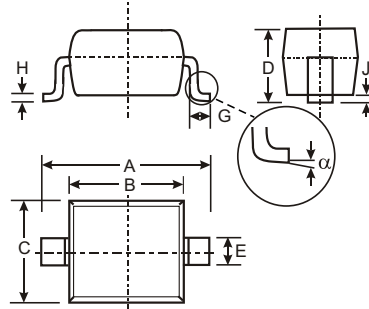


### Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Lead Free/RoHS Compliant (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Marking: See Page 2
- Type Code: T4, T6
- Ordering Information: See Page 2
- Weight: 0.004 grams (approximate)



| SOD-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 2.30         | 2.70 |
| B                    | 1.60         | 1.80 |
| C                    | 1.20         | 1.40 |
| D                    | 1.05 Typical |      |
| E                    | 0.25         | 0.35 |
| G                    | 0.20         | 0.40 |
| H                    | 0.10         | 0.15 |
| J                    | 0.05 Typical |      |
|                      | 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 @ $t = 1.0\text{ s}$<br>@ $t = 1.0\text{ s}$ | $I_{FSM}$                       | 2.0<br>1.0  | A                  |
| Power Dissipation (Note 1)                                                             | $P_d$                           | 200         | mW                 |
| Thermal Resistance Junction to Ambient Air (Note 1)                                    | $R_{JA}$                        | 625         | $^\circ\text{C/W}$ |
| 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     | $V_{(BR)R}$ | 75  |                               | V                 | $I_R = 1.0\text{ A}$                                                                                                                       |
| Forward Voltage               | $V_{FM}$    |     | 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 2) | $I_{RM}$    |     | 1.0<br>50<br>30<br>25         | A<br>A<br>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>$I_{rr} = 0.1 \times I_R, R_L = 100$                                                                       |

- Note: 1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
 2. Short duration test pulse used to minimize self-heating effect.  
 3. No purposefully added lead.

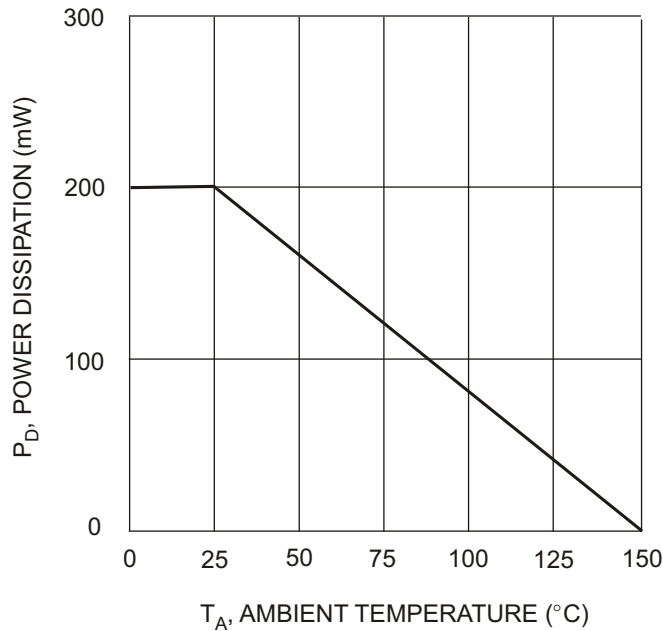


Fig. 1 Power Derating Curve

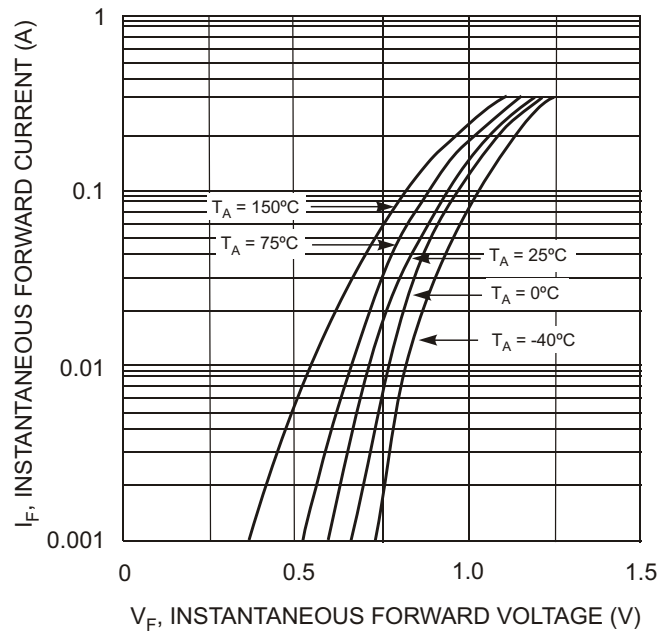


Fig. 2 Forward Characteristics

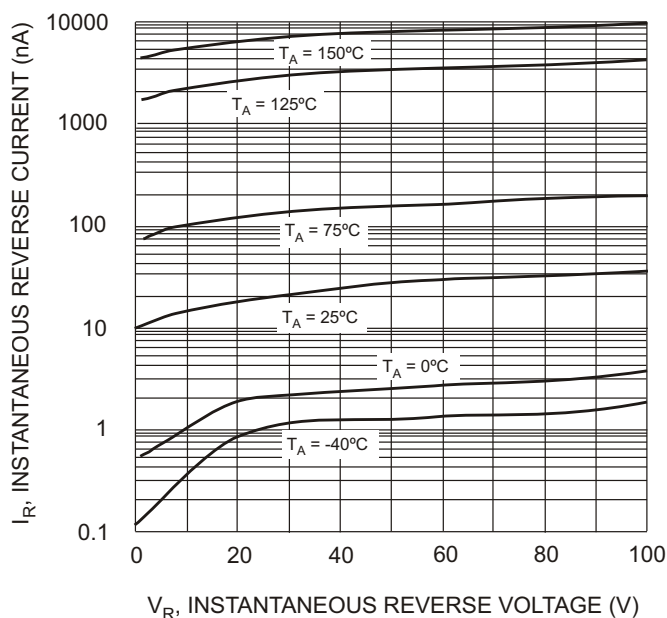


Fig. 3 Typical Reverse Characteristics

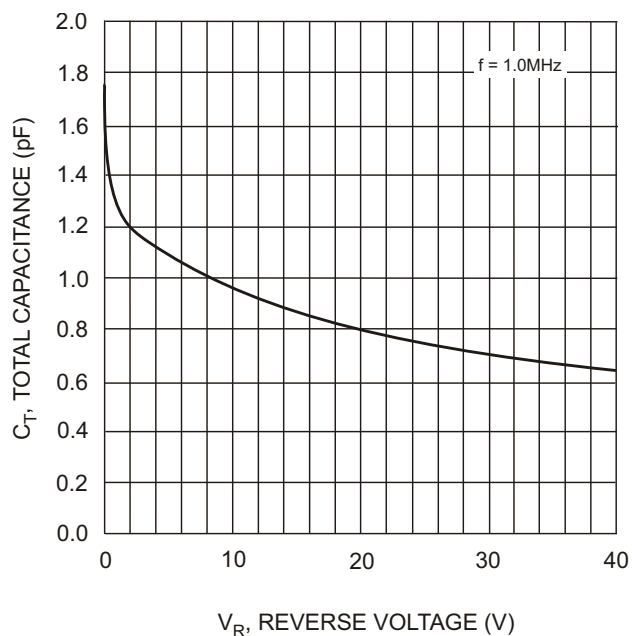


Fig. 4 Typical Capacitance vs. Reverse Voltage

## Ordering Information (Note 4)

| Device       | Packaging | Shipping         |
|--------------|-----------|------------------|
| 1N4148WS-7-F | SOD-323   | 3000/Tape & Reel |
| BAV16WS-7-F  | SOD-323   | 3000/Tape & Reel |

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



XX = Product Type Marking Code, See Page 1

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