

### Features

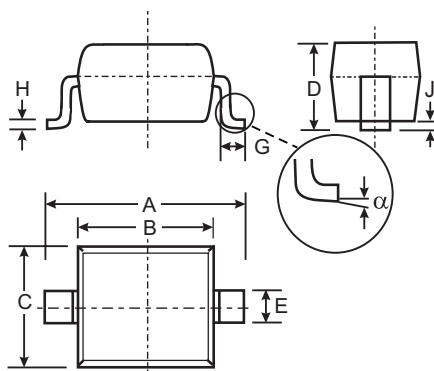
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- **Lead Free By Design/RoHS Compliant (Note 3)**
- "Green" Device (Note 4)

### Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Polarity: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking: Type Code and Cathode Band

Type Code: SF

- Weight: 0.004 grams (approx.)



| SOD-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 2.30         | 2.70 |
| B                    | 1.60         | 1.80 |
| C                    | 1.20         | 1.40 |
| D                    | 1.00         | 1.10 |
| E                    | 0.25         | 0.35 |
| G                    | 0.20         | 0.40 |
| H                    | 0.10         | 0.15 |
| J                    | 0.05 Typical |      |
| $\alpha$             | 0°           | 8°   |
| All Dimensions in mm |              |      |

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

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic  | Symbol          | Value       | Unit               |
|---|-----------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       | 40          | V                  |
| Working Peak Reverse Voltage  | $V_{RWM}$       |             |                    |
| DC Blocking Voltage   | $V_R$           |             |                    |
| RMS Reverse Voltage   | $V_{R(RMS)}$    | 28          | V                  |
| Average Rectified Output Current  | $I_O$           | 0.5         | A                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms single half sine-wave superimposed on rated load<br>(JEDEC Method) | $I_{FSM}$       | 3           | A                  |
| Power Dissipation (Note 1)  | $P_d$           | 235         | mW                 |
| Typical Thermal Resistance Junction to Ambient (Note 1)   | $R_{\theta JA}$ | 426         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range   | $T_j, T_{STG}$  | -40 to +125 | $^\circ\text{C}$   |

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

| Characteristic                     | Symbol      | Min | Typ        | Max        | Unit          | Test Condition  |
|------------------------------------|-------------|-----|------------|------------|---------------|---|
| Reverse Breakdown Voltage (Note 2) | $V_{(BR)R}$ | 40  | —          | —          | V             | $I_R = 1\text{mA}$  |
| Forward Voltage (Note 2)           | $V_F$       | —   | 285<br>480 | 300<br>550 | mV            | $I_F = 10\text{mA}$<br>$I_F = 500\text{mA}$                                   |
| Reverse Current (Note 2)           | $I_R$       | —   | 1.0<br>2.0 | 3<br>5     | $\mu\text{A}$ | $V_R = 10\text{V}$<br>$V_R = 30\text{V}$                                      |
| Total Capacitance                  | $C_T$       | —   | 125<br>20  | —          | pF            | $V_R = 0\text{V}, f = 1.0\text{MHz}$<br>$V_R = 10\text{V}, f = 1.0\text{MHz}$ |

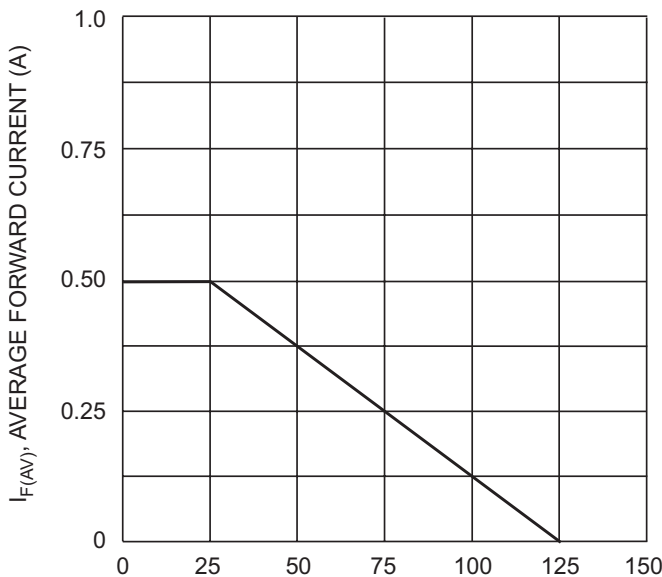
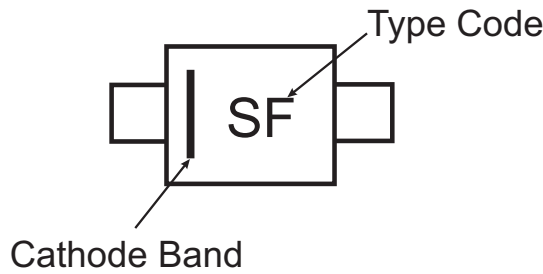
- Note:
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration test pulse used to minimize self-heating effect.
  3. No Purposefully added Lead.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

**Ordering Information** (Note 5)

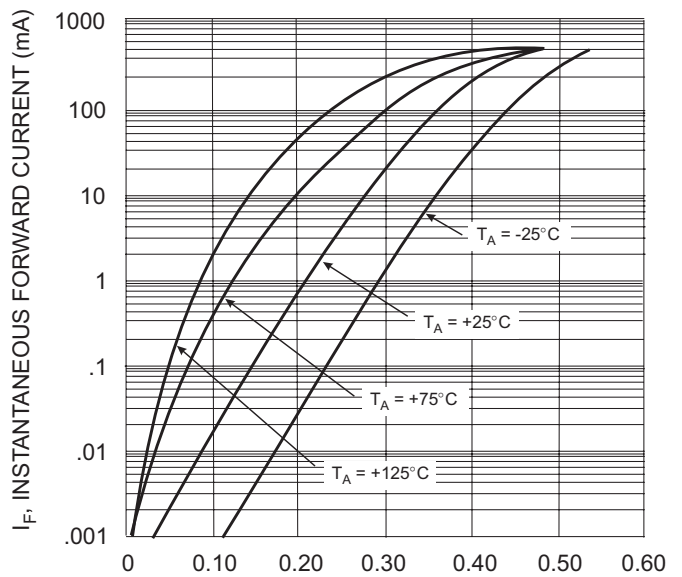
| Device      | Packaging | Shipping           |
|-------------|-----------|--------------------|
| B0540WS-7-F | SOD-323   | 3000/Tape and Reel |

Note: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

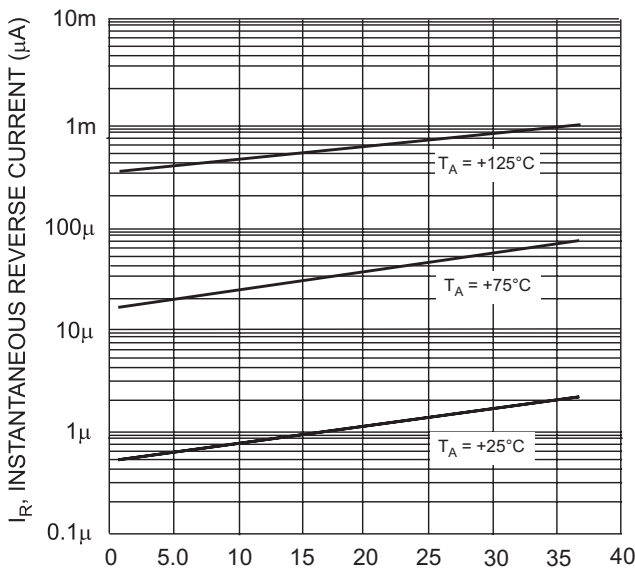
**Marking Information**



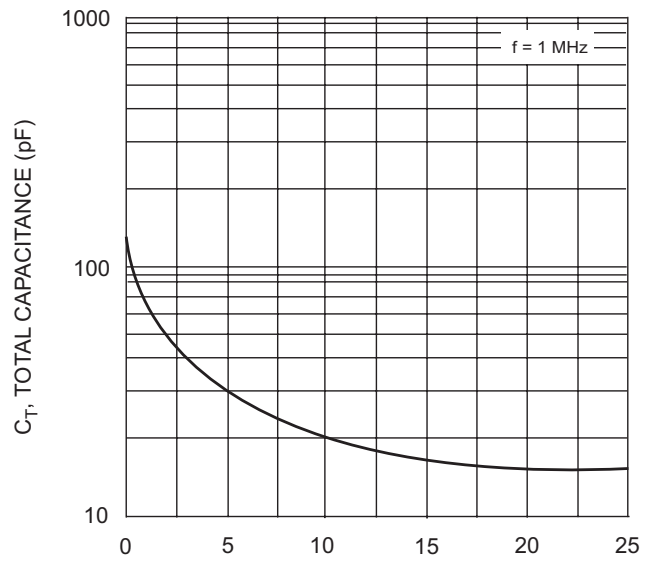
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 3 Typical Reverse Characteristics



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Total Capacitance vs. Reverse Voltage



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