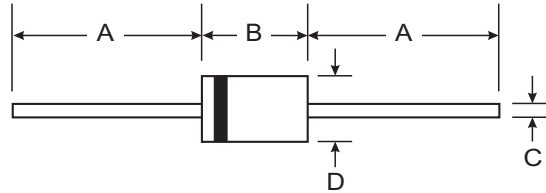


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability
- Surge Overload Rating to 150A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 2)**



### Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Ordering Information: See Last Page
- Marking: Type Number
- Weight: 1.1 grams (approximate)

| DO-201AD             |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A                    | 25.40 | —    |
| B                    | 7.20  | 9.50 |
| C                    | 1.20  | 1.30 |
| D                    | 4.80  | 5.30 |
| All Dimensions in mm |       |      |

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

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

| Characteristic  | Symbol   | SB570       | SB580 | SB590 | SB5100 | Unit |
|---|--|-------------|-------|-------|--------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                          | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 70          | 80    | 90    | 100    | V    |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub>                                    | 49          | 56    | 63    | 70     | V    |
| Average Rectified Output Current @ T <sub>L</sub> = 80°C  | I <sub>O</sub>   | 5.0         |       |       |        | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 150         |       |       |        | A    |
| Forward Voltage @ I <sub>F</sub> = 5.0A   | V <sub>FM</sub>  | 0.80        |       |       |        | V    |
| Peak Reverse Current @ T <sub>A</sub> = 25°C<br>at Rated DC Blocking Voltage @ T <sub>A</sub> = 100°C           | I <sub>RM</sub>  | 0.5<br>50   |       |       |        | mA   |
| Typical Junction Capacitance (Note 1)   | C <sub>j</sub>   | 400         |       |       |        | pF   |
| Typical Thermal Resistance Junction to Ambient  | R <sub>θJA</sub>                                       | 10          |       |       |        | K/W  |
| Operating and Storage Temperature Range   | T <sub>j</sub> , T <sub>STG</sub>                      | -65 to +150 |       |       |        | °C   |

- Notes: 1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.  
2. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

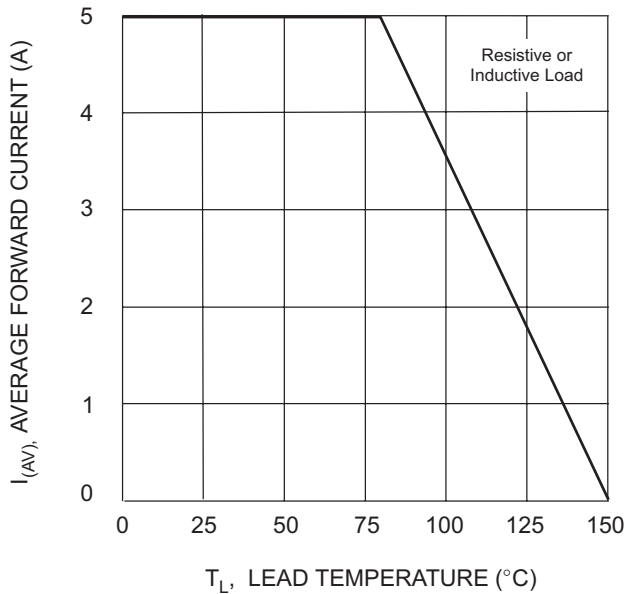


Fig. 1 Forward Current Derating Curve

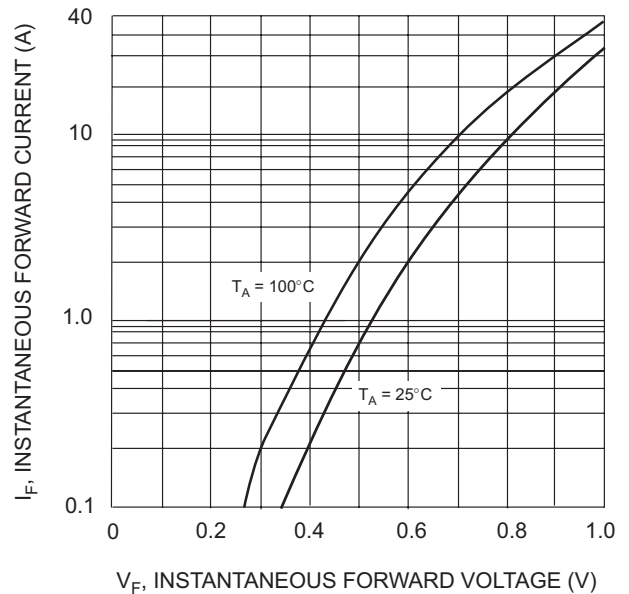


Fig. 2 Typical Forward Characteristics

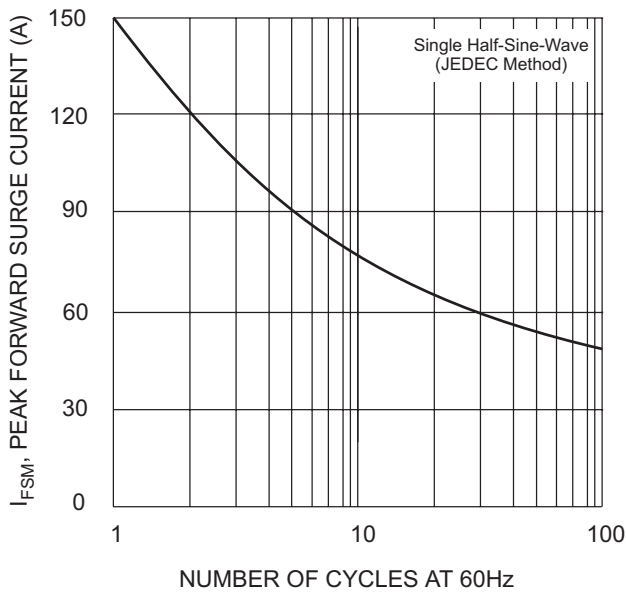


Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

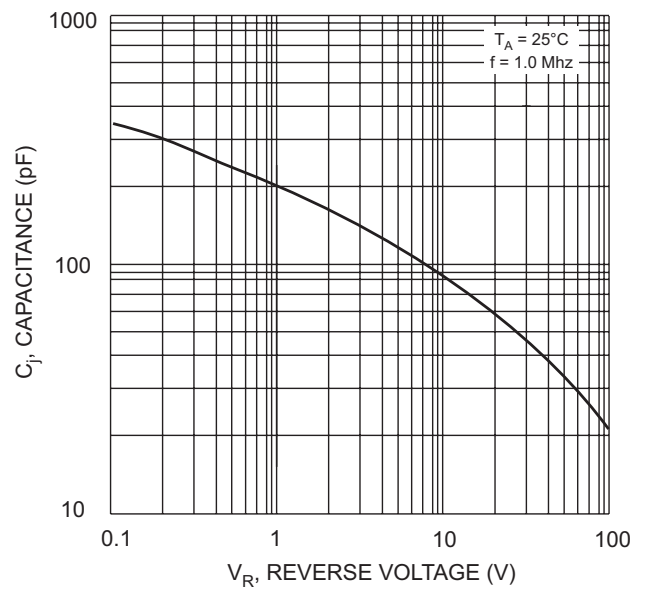


Fig. 4 Typical Junction Capacitance

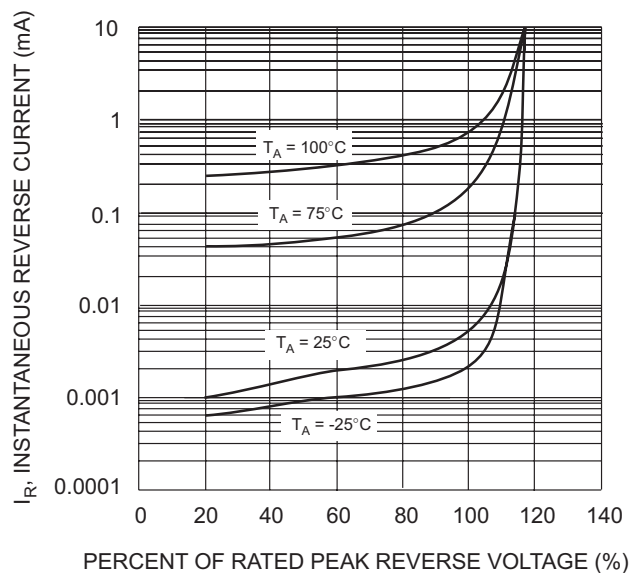


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 3)

| <b>Device</b> | <b>Packaging</b> | <b>Shipping</b>           |
|---------------|------------------|---------------------------|
| SB570-B       | DO-201AD         | 500/Bulk                  |
| SB570-T       | DO-201AD         | 1.2K/Tape & Reel, 13-inch |
| SB580-B       | DO-201AD         | 500/Bulk                  |
| SB580-T       | DO-201AD         | 1.2K/Tape & Reel, 13-inch |
| SB590-B       | DO-201AD         | 500/Bulk                  |
| SB590-T       | DO-201AD         | 1.2K/Tape & Reel, 13-inch |
| SB5100-B      | DO-201AD         | 500/Bulk                  |
| SB5100-T      | DO-201AD         | 1.2K/Tape & Reel, 13-inch |

Notes: 3. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.