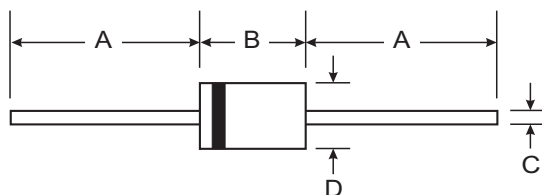


### Features

- 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 @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

| Characteristic                                                                                                  | Symbol                          | SB570       | SB580 | SB590 | SB5100 | Unit             |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|-------|-------|--------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                          | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 70          | 80    | 90    | 100    | V                |
| RMS Reverse Voltage                                                                                             | $V_{R(RMS)}$                    | 49          | 56    | 63    | 70     | V                |
| Average Rectified Output Current @ $T_L = 80^\circ\text{C}$                                                     | $I_O$                           | 5.0         |       |       |        | A                |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$                       | 150         |       |       |        | A                |
| Forward Voltage @ $I_F = 5.0\text{A}$                                                                           | $V_{FM}$                        | 0.80        |       |       |        | V                |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$     | $I_{RM}$                        | 0.5<br>50   |       |       |        | mA               |
| Typical Junction Capacitance (Note 1)                                                                           | $C_j$                           | 400         |       |       |        | pF               |
| Typical Thermal Resistance Junction to Ambient                                                                  | $R_{\theta JA}$                 | 10          |       |       |        | K/W              |
| Operating and Storage Temperature Range                                                                         | $T_j, T_{STG}$                  | -65 to +150 |       |       |        | $^\circ\text{C}$ |

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.

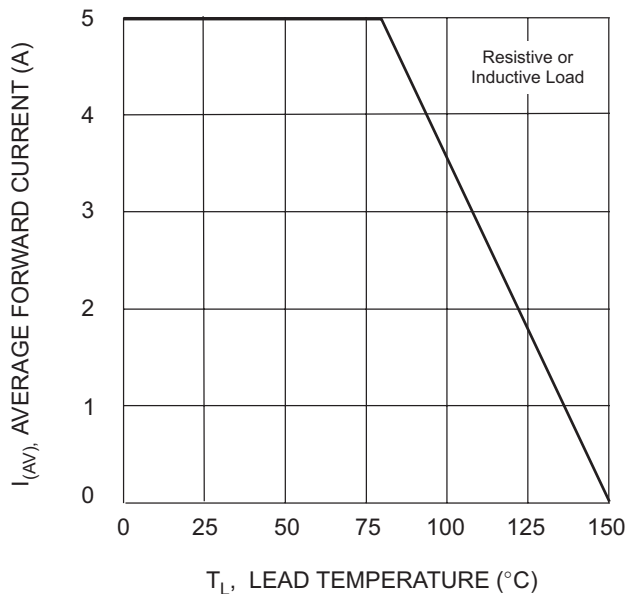


Fig. 1 Forward Current Derating Curve

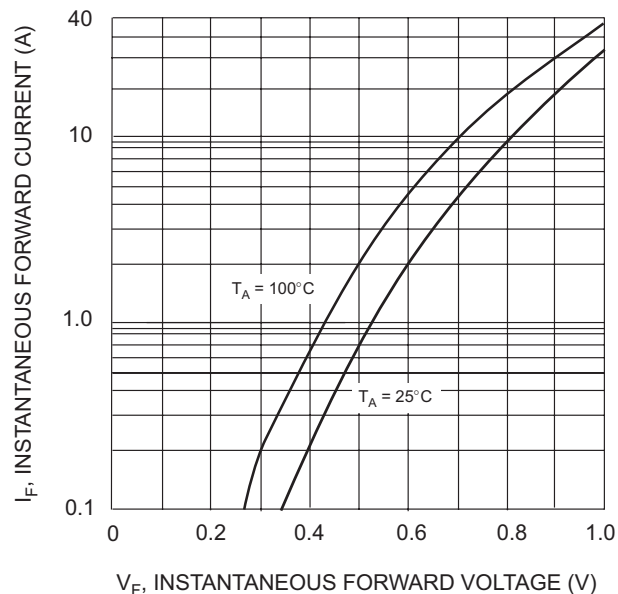


Fig. 2 Typical Forward Characteristics

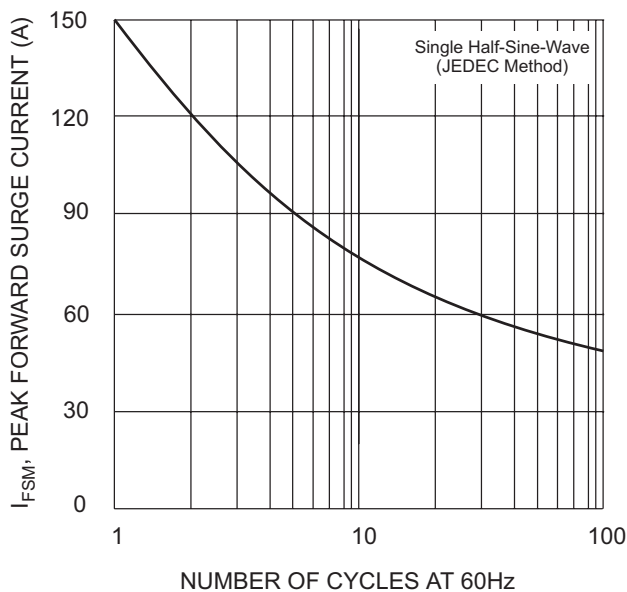


Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

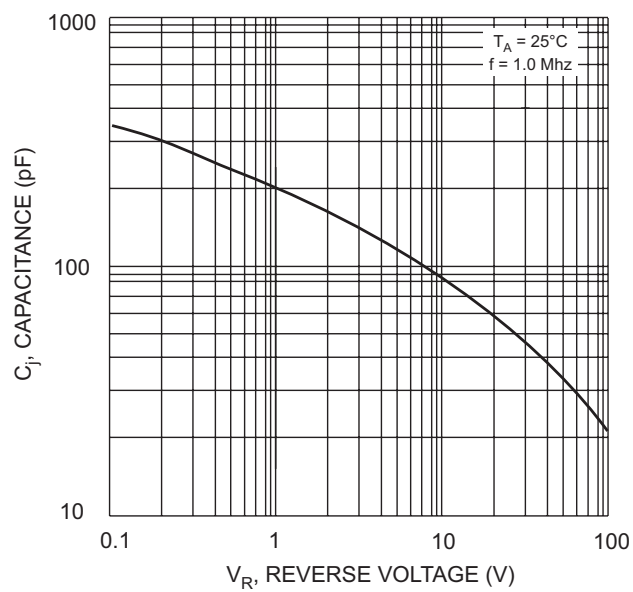


Fig. 4 Typical Junction Capacitance

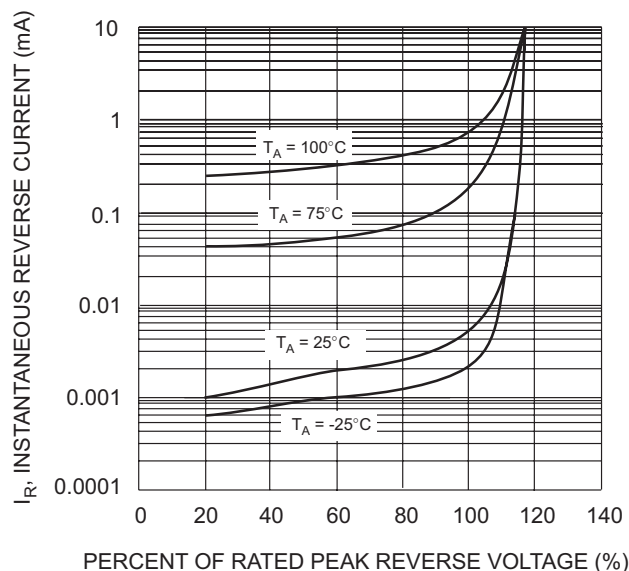


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 3)

| Device   | Packaging | Shipping                  |
|----------|-----------|---------------------------|
| 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>.