

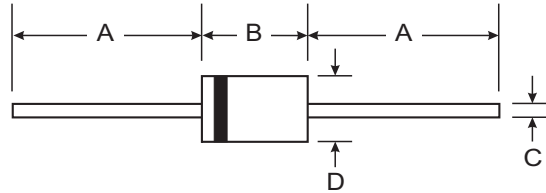


**THE DATASHEET OF
SB590-T**



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°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 Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} 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°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 = 5.0A | V _{FM} | 0.80 | | | | V |
| Peak Reverse Current @ T _A = 25°C at Rated DC Blocking Voltage @ T _A = 100°C | I _{RM} | 0.5 50 | | | | mA |
| Typical Junction Capacitance (Note 1) | C _j | 400 | | | | pF |
| Typical Thermal Resistance Junction to Ambient | R _{θJA} | 10 | | | | K/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -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.

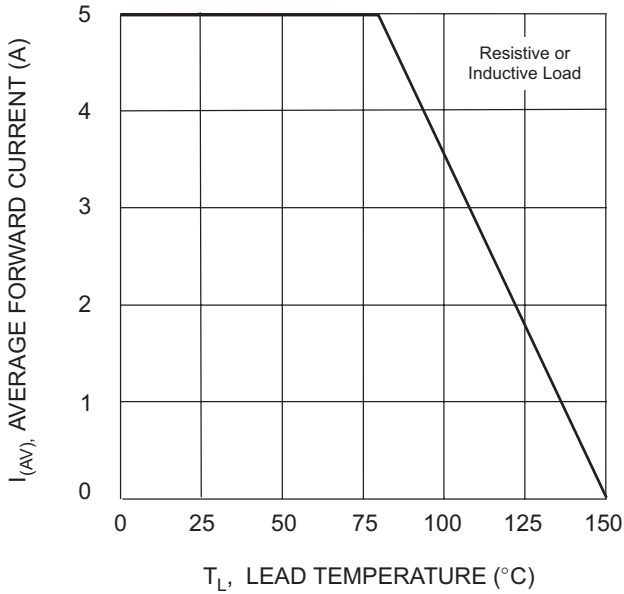


Fig. 1 Forward Current Derating Curve

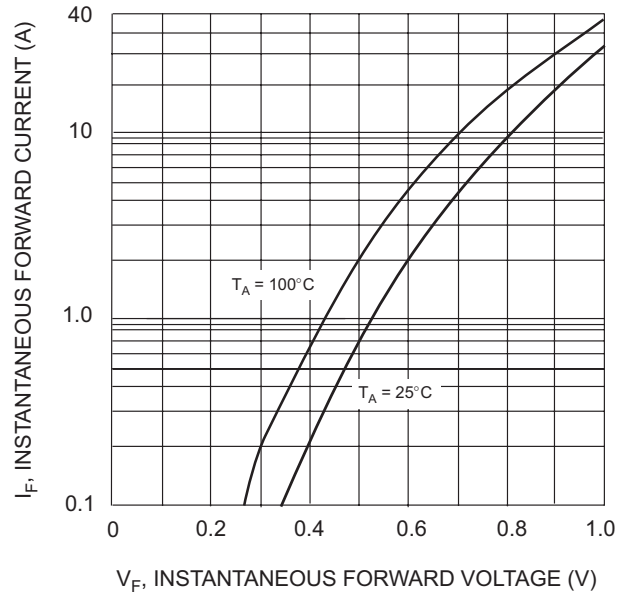


Fig. 2 Typical Forward Characteristics

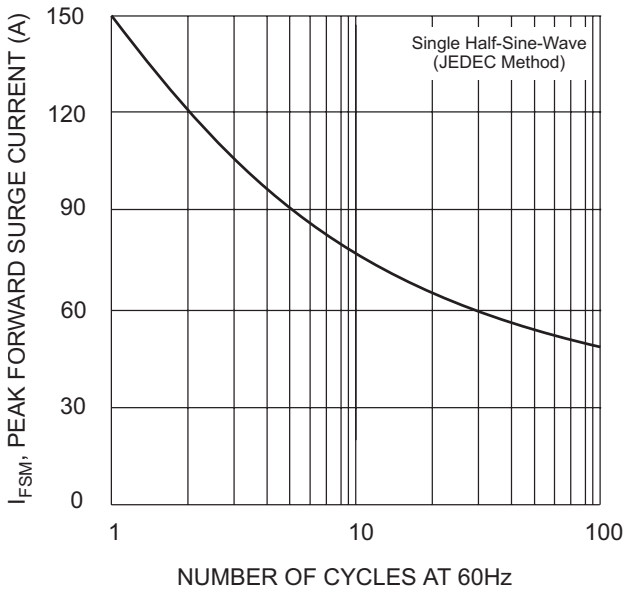


Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

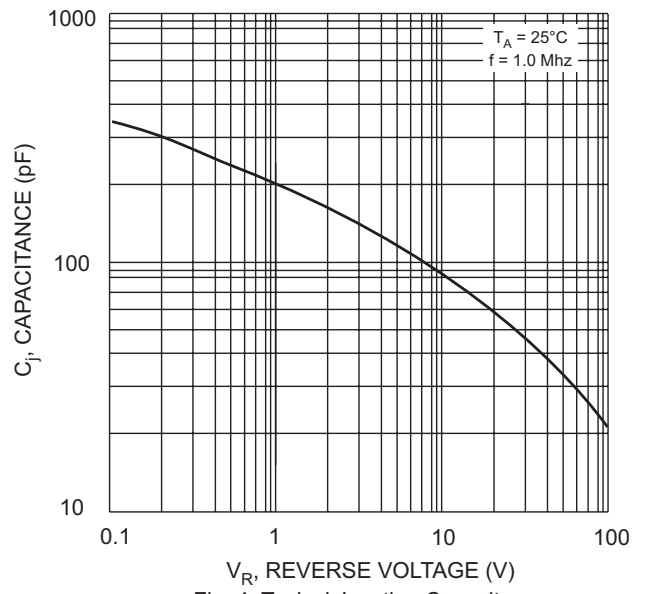


Fig. 4 Typical Junction Capacitance

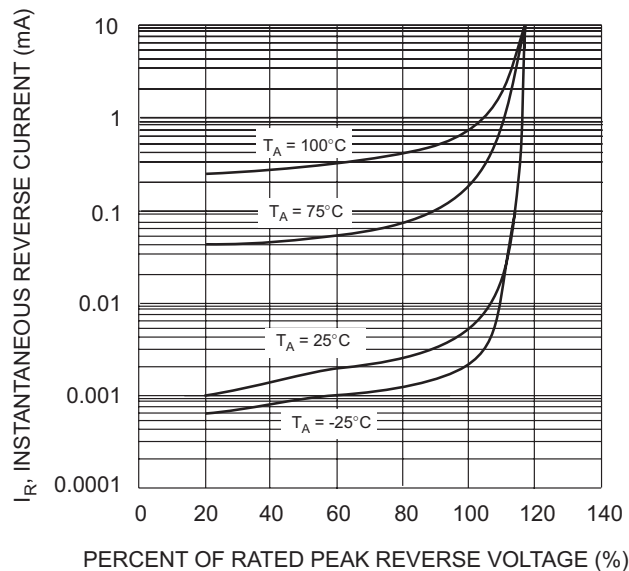


Fig. 5 Typical Reverse Characteristics



Ordering Information (Note 3)

| 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>.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View SB590-T on WIN SOURCE](#)
-  [Diodes Incorporated Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management