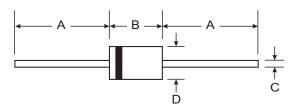




## **5.0A SCHOTTKY BARRIER RECTIFIER**

### **Features**

- Epitaxial Construction
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- 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 4)



## **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
- Mounting Position: Any
- Ordering Information: See Last Page
- Marking: Type Number
- Weight: 1.1 grams (approximate)

| DO-201AD             |       |      |  |  |  |
|----------------------|-------|------|--|--|--|
| Dim                  | Min   | Max  |  |  |  |
| Α                    | 25.40 | _    |  |  |  |
| В                    | 7.20  | 9.50 |  |  |  |
| С                    | 1.20  | 1.30 |  |  |  |
| D                    | 4.80  | 5.30 |  |  |  |
| All Dimensions in mm |       |      |  |  |  |

## Maximum Ratings and Electrical Characteristics @ TA = 25°C unless otherwise specified

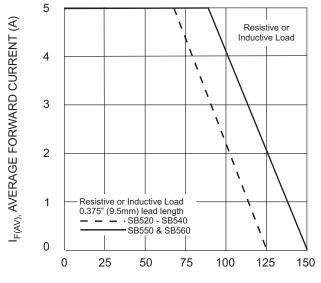
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic  |  | SB520       | SB530       | SB540 | SB550  | SB560  | 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> | 20          | 30          | 40    | 50     | 60     | V      |  |
| RMS Reverse Voltage   |  | 14          | 21          | 28    | 35     | 42     | V      |  |
| Average Rectified Output Current (See Figure 1) (Note 1)  |  | 5.0         |             |       |        |        | Α      |  |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>single half sine-wave superimposed on rated load<br>(JEDEC Method) |  | 150         |             |       |        |        | А      |  |
| Forward Voltage (Note 2) @ I <sub>F</sub> = 5.0A  | V <sub>FM</sub>  | 0.55 0.67   |             | 67    | V      |        |        |  |
| Peak Reverse Current @ T <sub>A</sub> = 25°C  |  | 0.5         |             |       |        |        | mA     |  |
| at Rated DC Blocking Voltage (Note 2) @ T <sub>A</sub> = 100°C  | I <sub>RM</sub>  | 50          |             |       | 25     |        | ] IIIA |  |
| Typical Thermal Resistance Junction to Ambient (Note 1) (Note 3)  |  | 25          |             |       |        |        | °C/W   |  |
|   |  | 8           |             |       |        |        |        |  |
| Operating Temperature Range   |  |             | -65 to +125 |       | -65 to | +150   |        |  |
| Storage Temperature Range   |  | -65 to +150 |             |       |        | ⊢ °C ∥ |        |  |

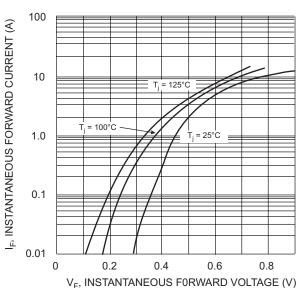
Notes:

- 1. Measured at ambient temperature at a distance of 9.5mm from case.
- 2. Short duration test pulse used to minimize self-heating effect.
- 3. Thermal resistance junction to lead vertical P.C.B. mounted, 0.375" (9.5mm) lead length.
- 4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.





 $T_L$ , LEAD TEMPERATURE (°C) Fig. 1 Forward Current Derating Curve



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (V) Fig. 3 Typical Forward Characteristics, SB550 & SB560

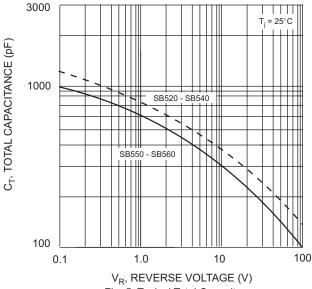
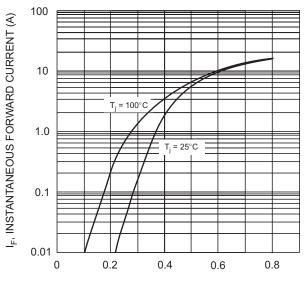
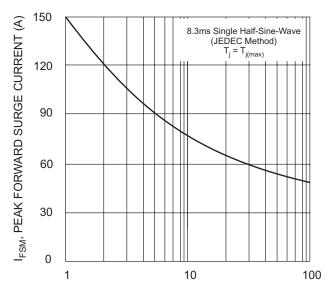


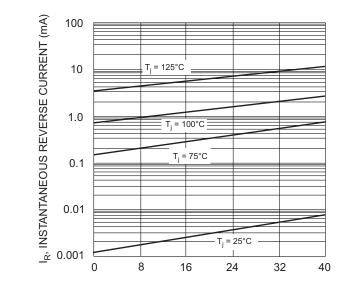
Fig. 5 Typical Total Capacitance



 $V_{\rm F}$ , INSTANTANEOUS FORWARD VOLTAGE (V) Fig. 2 Typical Forward Characteristics, SB520 - SB540

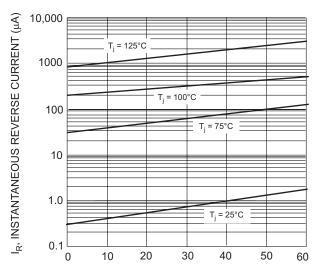


NUMBER OF CYCLES AT 60Hz Fig. 4 Max Non-Repetitive Peak Fwd Surge Current



 $\rm V_R$ , INSTANTANEOUS, REVERSE VOLTAGE (V) Fig. 6 Typical Reverse Characteristics, SB520 - SB540





 $\rm V_R$ , INSTANTANEOUS REVERSE VOLTAGE (V) Fig. 7 Typical Reverse Characteristics, SB550 & SB560

# Ordering Information (Note 5)

| Device  | Packaging | Shipping                  |  |
|---------|-----------|---------------------------|--|
| SB520-A | DO-201AD  | 1K/Ammo                   |  |
| SB520-B | DO-201AD  | 500/Bulk                  |  |
| SB520-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |  |
| SB530-A | DO-201AD  | 1K/Ammo                   |  |
| SB530-B | DO-201AD  | 500/Bulk                  |  |
| SB530-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |  |
| SB540-A | DO-201AD  | 1K/Ammo                   |  |
| SB540-B | DO-201AD  | 500/Bulk                  |  |
| SB540-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |  |
| SB550-A | DO-201AD  | 1K/Ammo                   |  |
| SB550-B | DO-201AD  | 500/Bulk                  |  |
| SB550-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |  |
| SB560-A | DO-201AD  | 1K/Ammo                   |  |
| SB560-B | DO-201AD  | 500/Bulk                  |  |
| SB560-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |  |

Notes: 5. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02008.pdf

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