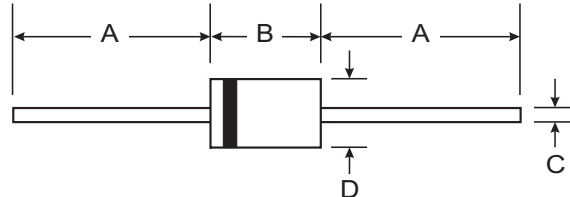


### Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 25A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead Free Finish, RoHS Compliant (Note 3)**



### Mechanical Data

- Case: DO-41
- 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: 0.3 grams (approximate)

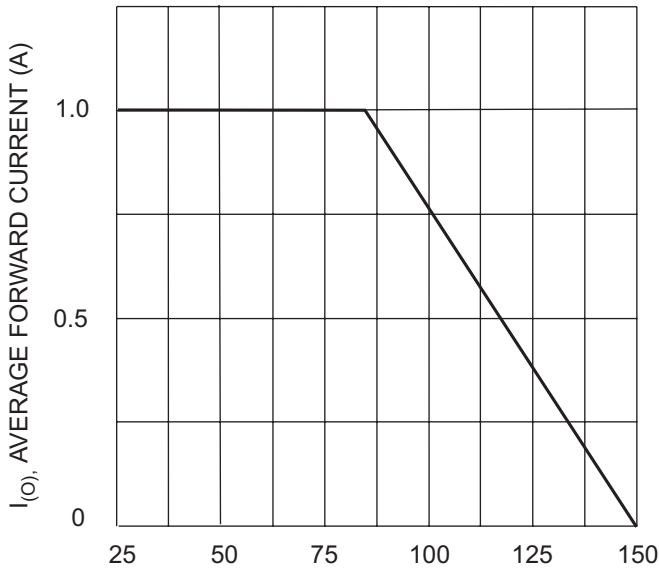
| DO-41                |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 25.4 | —    |
| B                    | 4.1  | 5.2  |
| C                    | 0.71 | 0.86 |
| D                    | 2.0  | 2.7  |
| All Dimensions in mm |      |      |

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

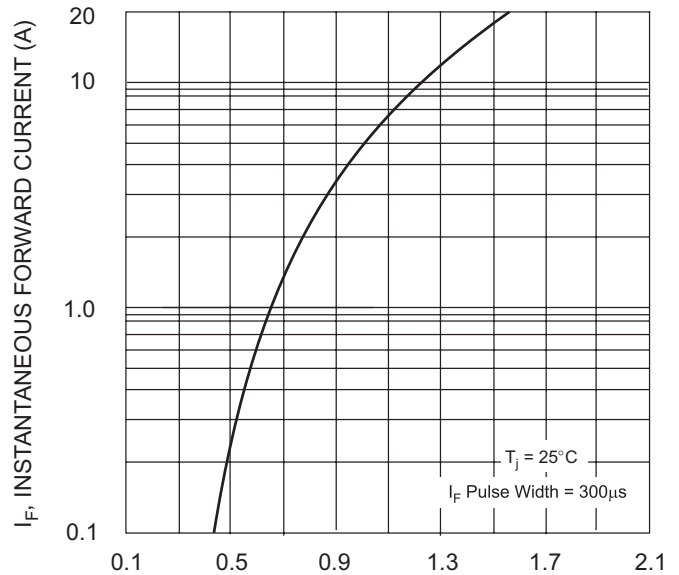
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic  | Symbol   | SB170       | SB180 | SB190 | SB1100 | 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>T</sub> = 85°C  | I <sub>O</sub>   | 1.0         |       |       |        | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 25          |       |       |        | A    |
| Forward Voltage @ I <sub>F</sub> = 1.0A @ T <sub>A</sub> = 25°C   | V <sub>FM</sub>  | 0.80        |       |       |        | V    |
| Peak Reverse Current at Rated DC Blocking Voltage @ T <sub>A</sub> = 25°C @ T <sub>A</sub> = 100°C              | I <sub>RM</sub>  | 0.5<br>10   |       |       |        | mA   |
| Typical Junction Capacitance (Note 2)   | C <sub>j</sub>   | 80          |       |       |        | pF   |
| Typical Thermal Resistance Junction to Lead   | R <sub>θJL</sub>                                       | 15          |       |       |        | K/W  |
| Typical Thermal Resistance Junction to Ambient (Note 1)   | R <sub>θJA</sub>                                       | 50          |       |       |        | K/W  |
| Operating and Storage Temperature Range   | T <sub>j</sub> , T <sub>STG</sub>                      | -65 to +125 |       |       |        | °C   |

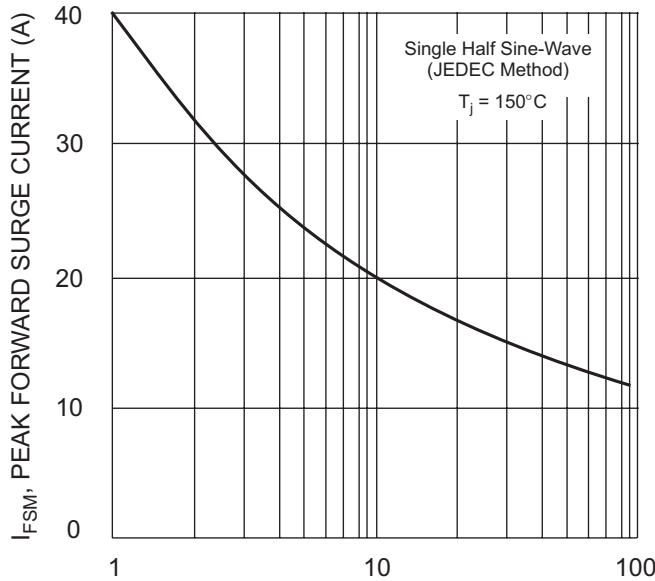
- Notes: 1. Valid provided that leads are kept at ambient temperature at a distance of 9.5mm from the case.  
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.  
3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.



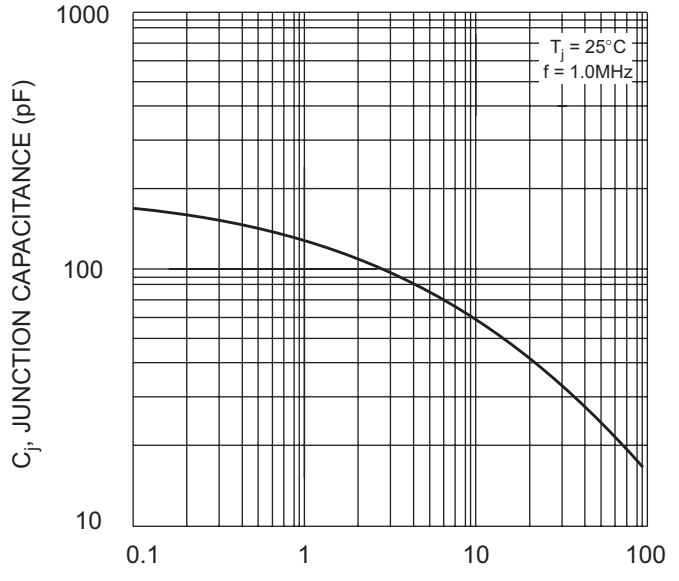
$T_L$ , LEAD TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



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



NUMBER OF CYCLES AT 60 Hz  
Fig. 3 Max Non-Repetitive Peak Fwd Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 4 Typical Junction Capacitance

**Ordering Information** (Note 4)

| Device   | Packaging | Shipping                |
|----------|-----------|-------------------------|
| SB170-A  | DO-41     | 5K/Ammo Pack            |
| SB170-B  | DO-41     | 1K/Bulk                 |
| SB170-T  | DO-41     | 5K/Tape & Reel, 13-inch |
| SB180-A  | DO-41     | 5K/Ammo Pack            |
| SB180-B  | DO-41     | 1K/Bulk                 |
| SB180-T  | DO-41     | 5K/Tape & Reel, 13-inch |
| SB190-A  | DO-41     | 5K/Ammo Pack            |
| SB190-B  | DO-41     | 1K/Bulk                 |
| SB190-T  | DO-41     | 5K/Tape & Reel, 13-inch |
| SB1100-A | DO-41     | 5K/Ammo Pack            |
| SB1100-B | DO-41     | 1K/Bulk                 |
| SB1100-T | DO-41     | 5K/Tape & Reel, 13-inch |

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>