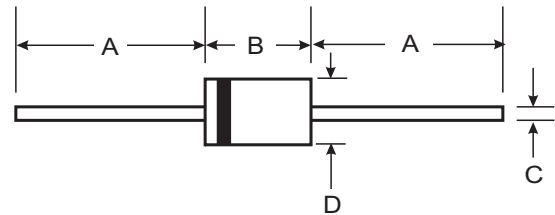


Features

- Schottky Barrier Chip
- 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 40A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 3)**



Mechanical Data

- Case: DO-41 Plastic
- 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 Plastic | | |
|----------------------|-------|-------|
| Dim | Min | Max |
| A | 25.40 | — |
| B | 4.06 | 5.21 |
| C | 0.71 | 0.864 |
| D | 2.00 | 2.72 |
| 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 | SB120 | SB130 | SB140 | SB150 | SB160 | Unit |
|---|---------------------|-------------|-------|-------|-------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | | | | |
| DC Blocking Voltage | V _R | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 14 | 21 | 28 | 35 | 42 | V |
| Average Rectified Output Current (Note 1) | I _O | 1.0 | | | | | A |
| (See Figure 1) | | | | | | | |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 40 | | | | | A |
| Forward Voltage (Note 2) | V _{FM} | 0.50 | | 0.70 | | V | |
| Peak Reverse Current | I _{RM} | 0.5 | | | | | mA |
| @ T _A = 25°C | | | | | | | |
| at Rated DC Blocking Voltage (Note 2) | | 10 | | 5.0 | | | |
| Typical Thermal Resistance Junction to Lead (Note 1) | R _{θJL} | 15 | | | | | °C/W |
| Typical Thermal Resistance Junction to Ambient | R _{θJA} | 50 | | | | | °C/W |
| Operating Temperature Range | T _J | -65 to +125 | | | -65 to +150 | | °C |
| Storage Temperature Range | T _{STG} | -65 to +150 | | | | | |

- Notes: 1. Measured at ambient temperature at a distance of 9.5mm from the case.
2. Short duration test pulse used to minimize self-heating effect.
3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

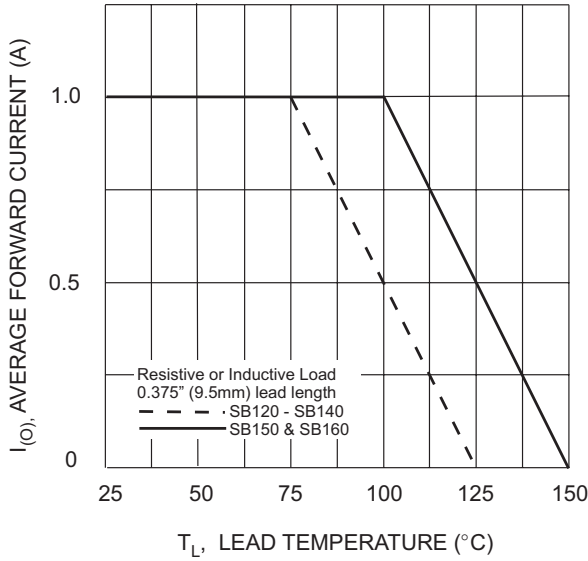


Fig. 1 Forward Current Derating Curve

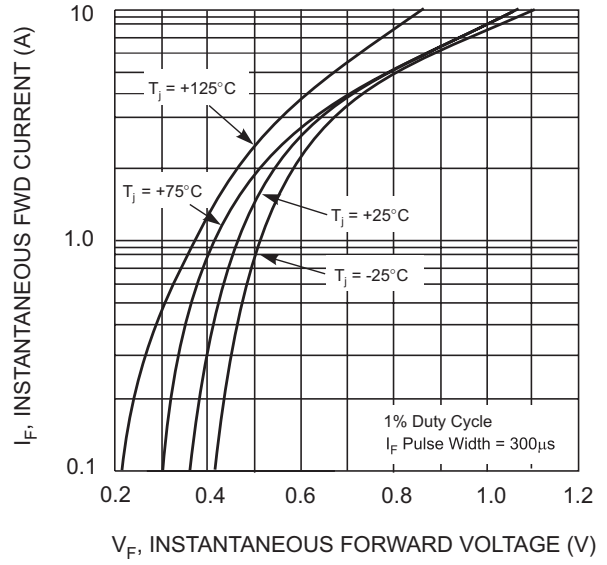


Fig. 2 Typical Forward Characteristics - SB120 thru SB140

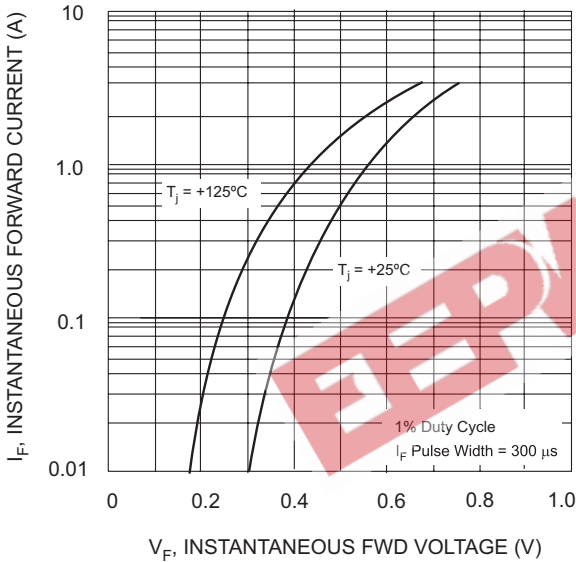


Fig. 3 Typ. Forward Characteristics - SB150 thru SB160

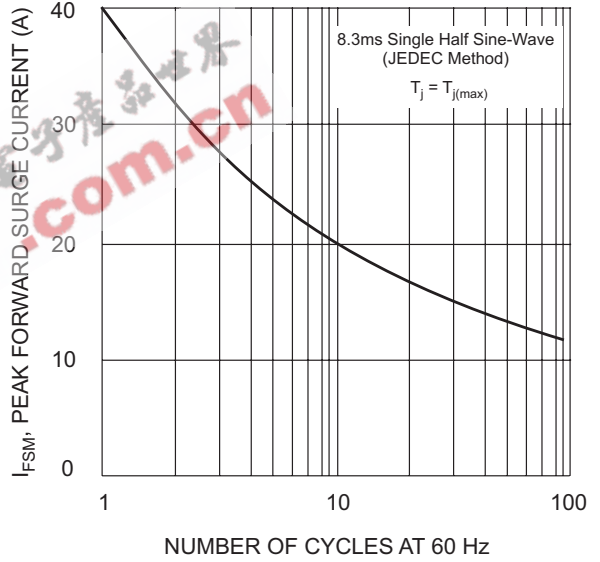


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

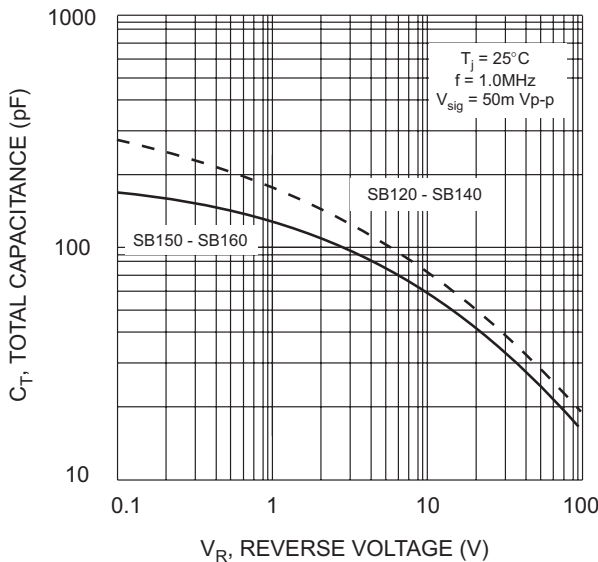


Fig. 5 Typical Total Capacitance

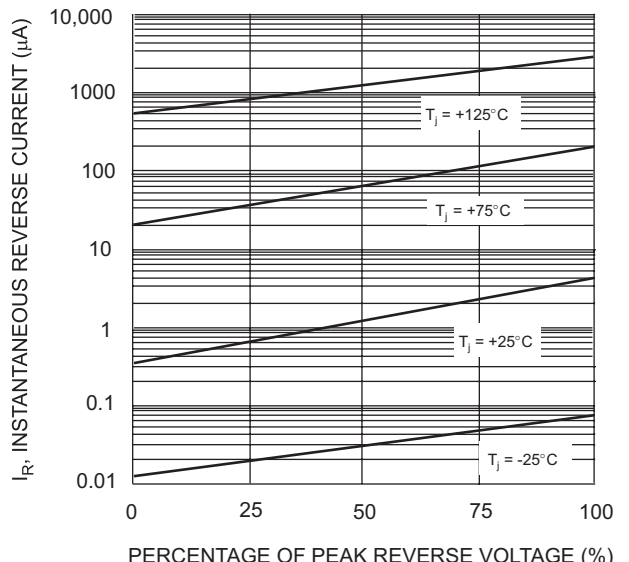


Fig. 6 Typical Reverse Characteristics, SB120 thru SB140

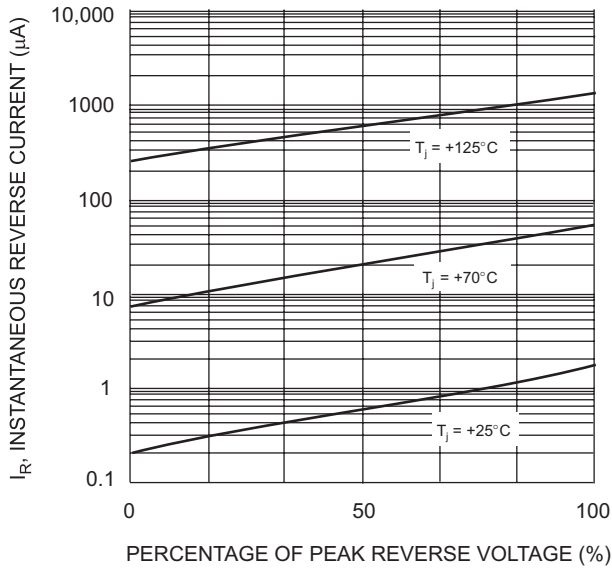


Fig. 7 Typical Reverse Characteristics, SB150 thru SB160

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|---------|---------------|-------------------------|
| SB120-A | DO-41 Plastic | 5K/Ammo Pack |
| SB120-B | DO-41 Plastic | 1K/Bulk |
| SB120-T | DO-41 Plastic | 5K/Tape & Reel, 13-inch |
| SB130-A | DO-41 Plastic | 5K/Ammo Pack |
| SB130-B | DO-41 Plastic | 1K/Bulk |
| SB130-T | DO-41 Plastic | 5K/Tape & Reel, 13-inch |
| SB140-A | DO-41 Plastic | 5K/Ammo Pack |
| SB140-B | DO-41 Plastic | 1K/Bulk |
| SB140-T | DO-41 Plastic | 5K/Tape & Reel, 13-inch |
| SB150-A | DO-41 Plastic | 5K/Ammo Pack |
| SB150-B | DO-41 Plastic | 1K/Bulk |
| SB150-T | DO-41 Plastic | 5K/Tape & Reel, 13-inch |
| SB160-A | DO-41 Plastic | 5K/Ammo Pack |
| SB160-B | DO-41 Plastic | 1K/Bulk |
| SB160-T | DO-41 Plastic | 5K/Tape & Reel, 13-inch |

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