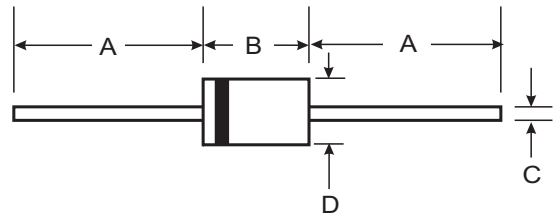


### Features

- 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<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	SB120	SB130	SB140	SB150	SB160	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	30	40	50	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>						
DC Blocking Voltage	V <sub>R</sub>						
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current (Note 1)	I <sub>O</sub>	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 <sub>FSM</sub>	40					A
Forward Voltage (Note 2)	V <sub>FM</sub>	0.50			0.70		V
Peak Reverse Current	I <sub>RM</sub>	0.5					mA
@ T <sub>A</sub> = 25°C							
at Rated DC Blocking Voltage (Note 2)		10			5.0		
Typical Thermal Resistance Junction to Lead (Note 1)	R <sub>θJL</sub>	15					°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	50					°C/W
Operating Temperature Range	T <sub>j</sub>	-65 to +125			-65 to +150		°C
Storage Temperature Range	T <sub>STG</sub>	-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.

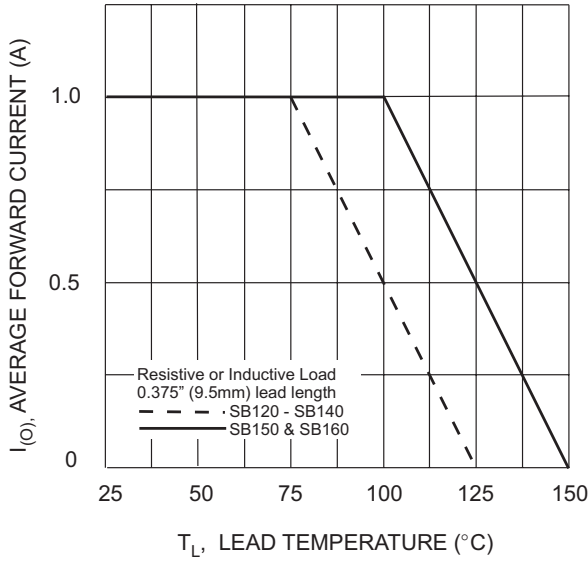


Fig. 1 Forward Current Derating Curve

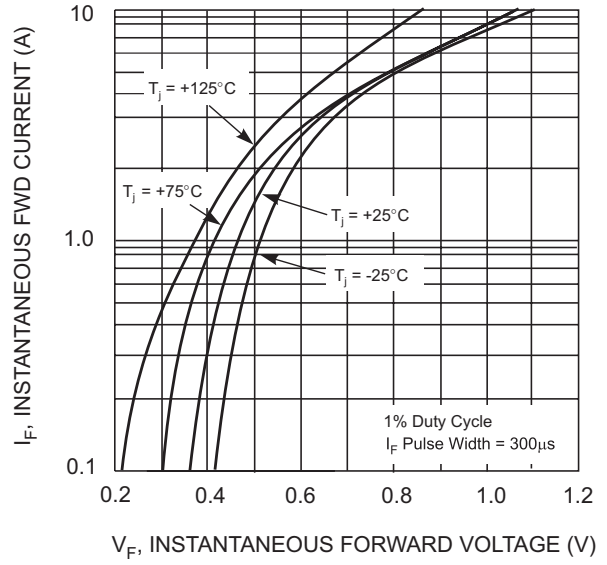


Fig. 2 Typical Forward Characteristics - SB120 thru SB140

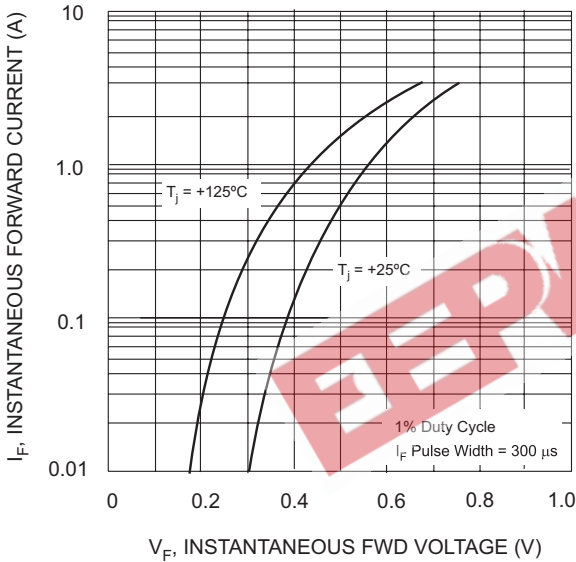


Fig. 3 Typ. Forward Characteristics - SB150 thru SB160

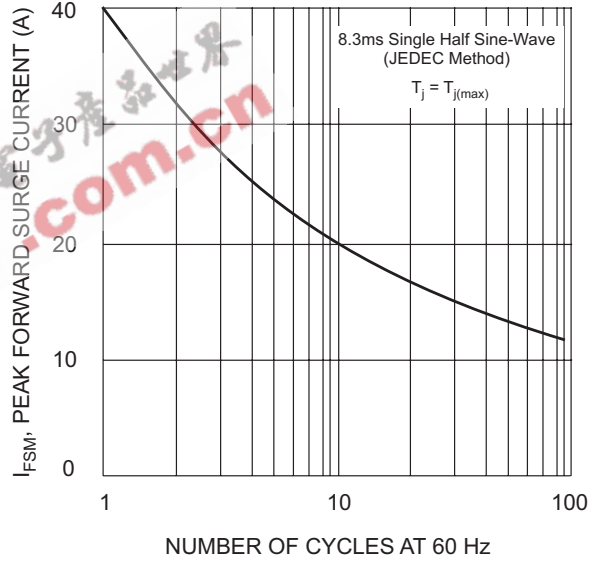


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

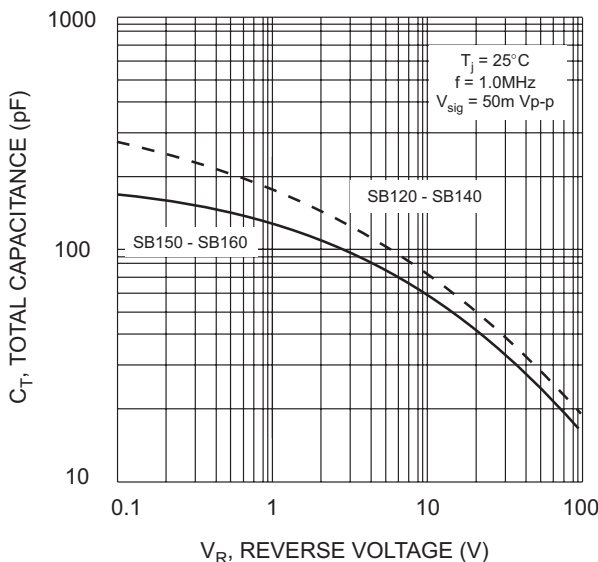


Fig. 5 Typical Total Capacitance

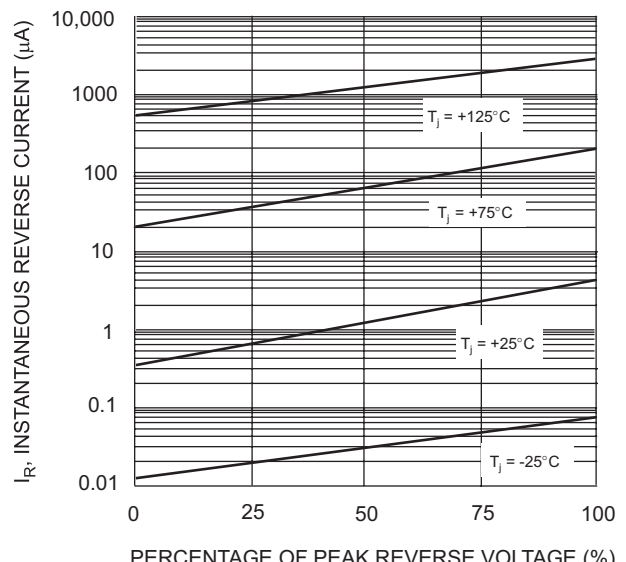


Fig. 6 Typical Reverse Characteristics, SB120 thru SB140

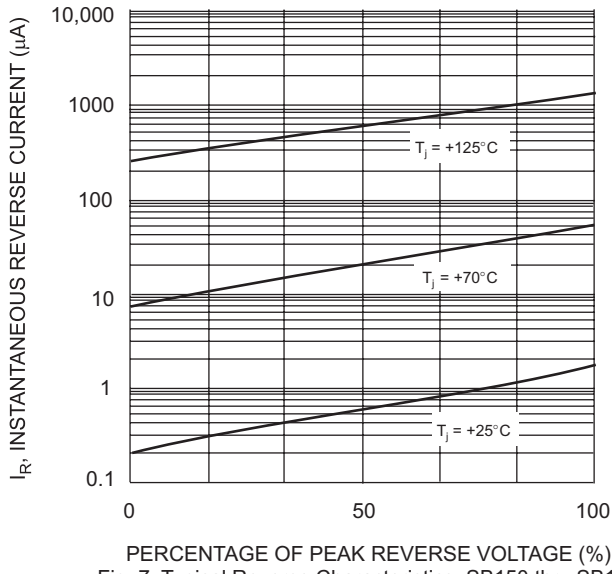


Fig. 7 Typical Reverse Characteristics, SB150 thru SB160

**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>