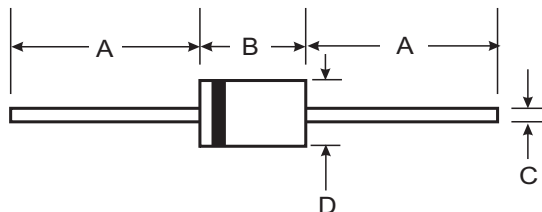


Features

- 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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	35	42	V
Average Rectified Output Current (Note 1) (See Figure 1)	I_O	1.0					A
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) @ $I_F = 1.0A$	V_{FM}	0.50			0.70		V
Peak Reverse Current at Rated DC Blocking Voltage (Note 2) @ $T_A = 25^{\circ}C$ @ $T_A = 100^{\circ}C$	I_{RM}	0.5					mA
		10			5.0		
Typical Thermal Resistance Junction to Lead (Note 1)	$R_{\theta JL}$	15					$^{\circ}C/W$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	50					$^{\circ}C/W$
Operating Temperature Range	T_j	-65 to +125			-65 to +150		$^{\circ}C$
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.

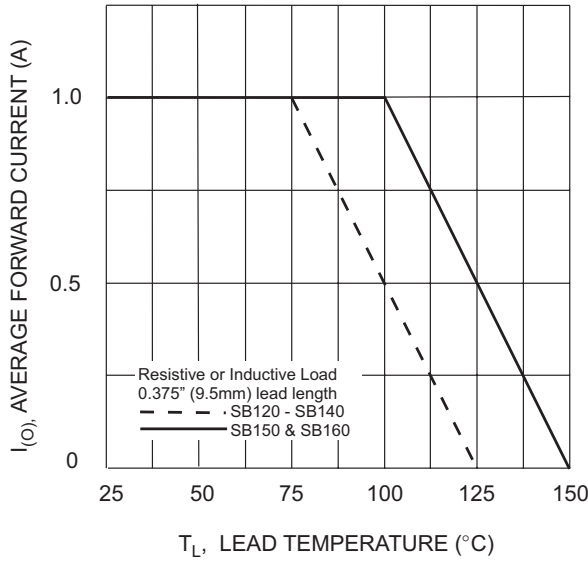


Fig. 1 Forward Current Derating Curve

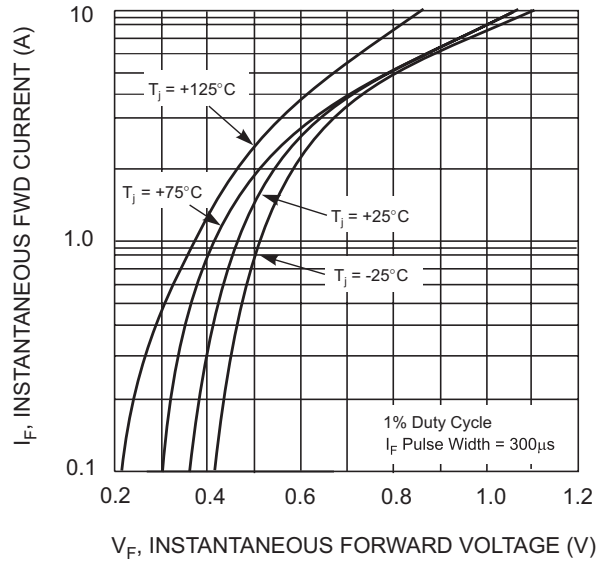


Fig. 2 Typical Forward Characteristics - SB120 thru SB140

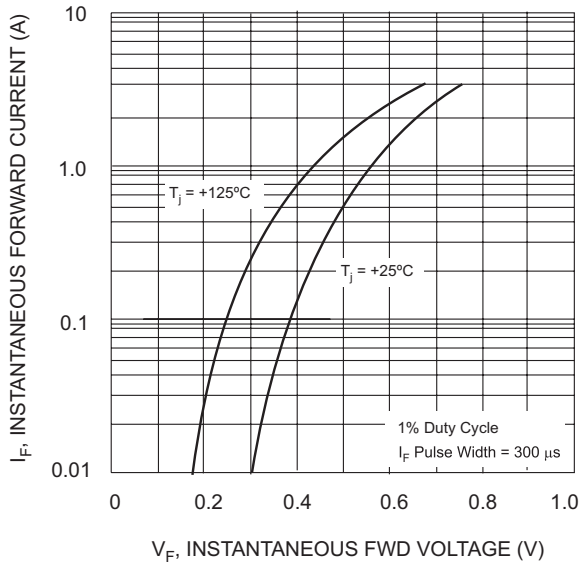


Fig. 3 Typ. Forward Characteristics - SB150 thru SB160

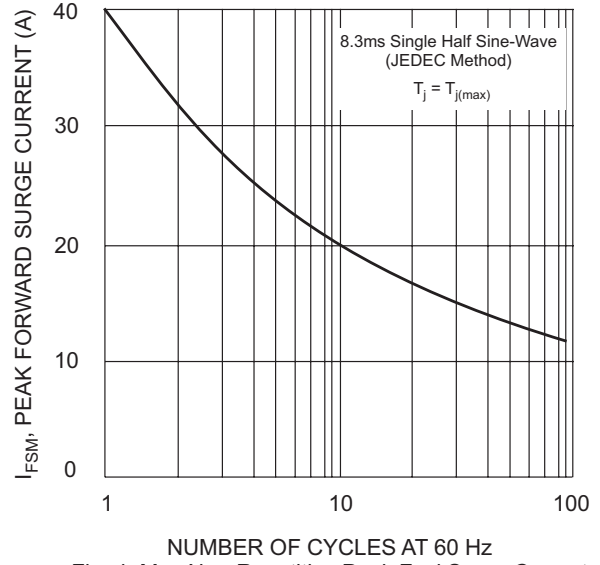


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

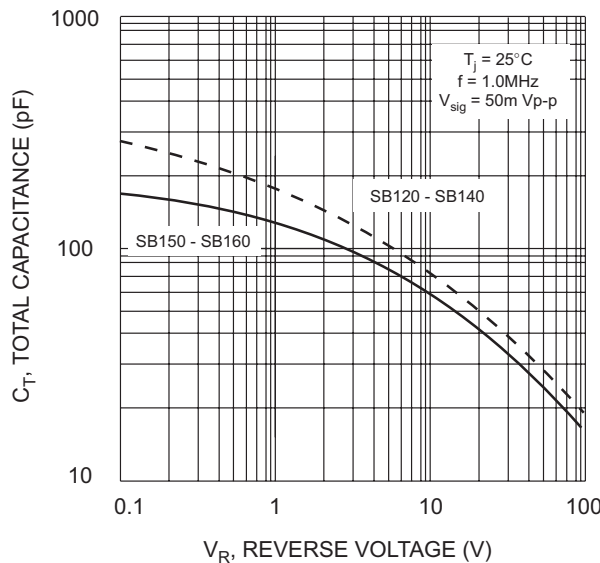


Fig. 5 Typical Total Capacitance

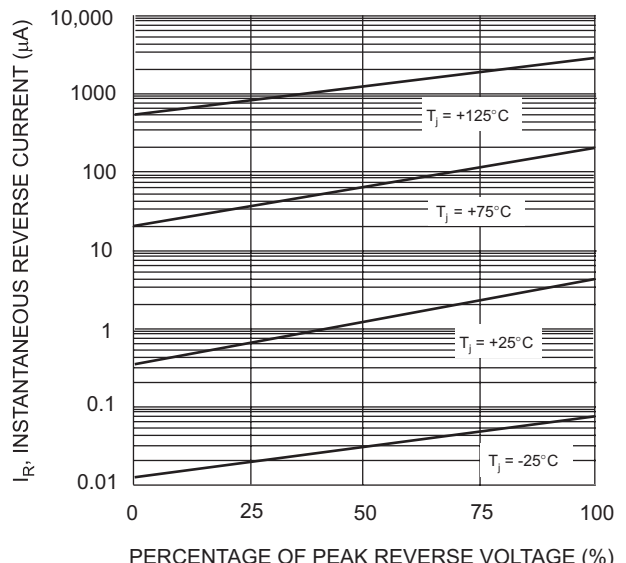
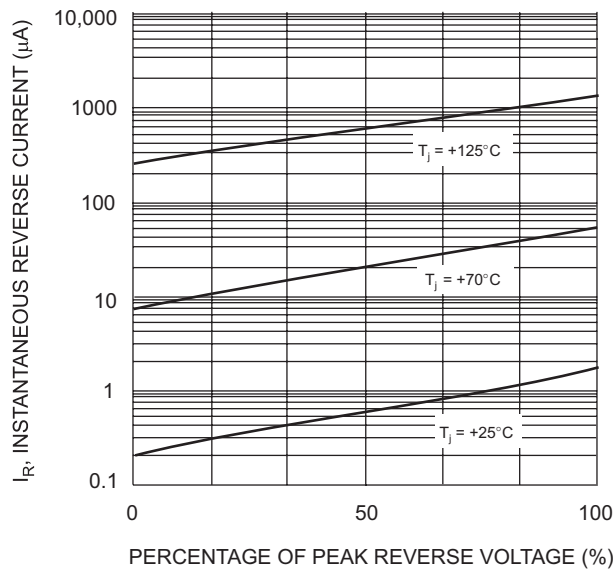


Fig. 6 Typical Reverse Characteristics, SB120 thru SB140



PERCENTAGE OF PEAK REVERSE VOLTAGE (%)
 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>