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 (Notes 1 & 2)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

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 (e3)
- Polarity: Cathode Band
- Mounting Position: Any
- Marking: Type Number
- Weight: 0.3 grams (Approximate)

Ordering Information (Note 3)

Device	Packaging	Shipping
SB120-A	DO-41 (Plastic)	5K/Ammo Pack
SB120-B	DO-41 (Plastic)	1K/Bulk
SB120-T (Note 4)	DO-41 (Plastic)	5K/Tape & Reel, 13-inch
SB130-A	DO-41 (Plastic)	5K/Ammo Pack
SB130-B (Note 4)	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:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. For packaging details, visit our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.
4. Not recommended for new design.

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 5) (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 6) @ I_F = 1.0A	V_{FM}	0.50			0.70		V
Peak Reverse Current @ T_A = +25°C	I_{RM}	0.5					mA
at Rated DC Blocking Voltage (Note 6) @ T_A = +100°C		10			5.0		
Typical Thermal Resistance Junction to Lead (Note 5)	$R_{\theta JL}$	15					°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	50					°C/W
Operating Temperature Range	T_J	-65 to +125			-65 to +150		°C
Storage Temperature Range	T_{STG}	-65 to +150					

Notes: 5. Measured at ambient temperature at a distance of 9.5mm from the case.
6. Short duration pulse test used to minimize self-heating effect.

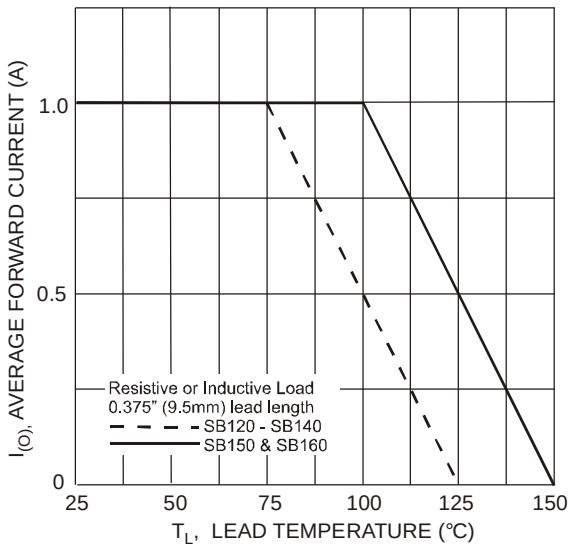


Fig. 1 Forward Current Derating Curve

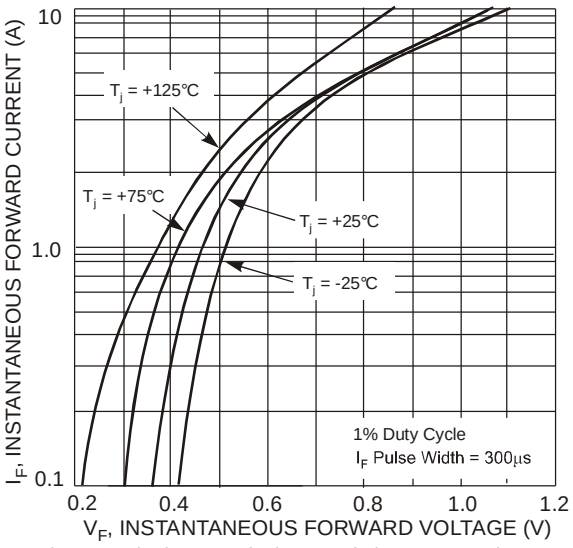


Fig. 2 Typical Forward Characteristics - SB120 thru SB140

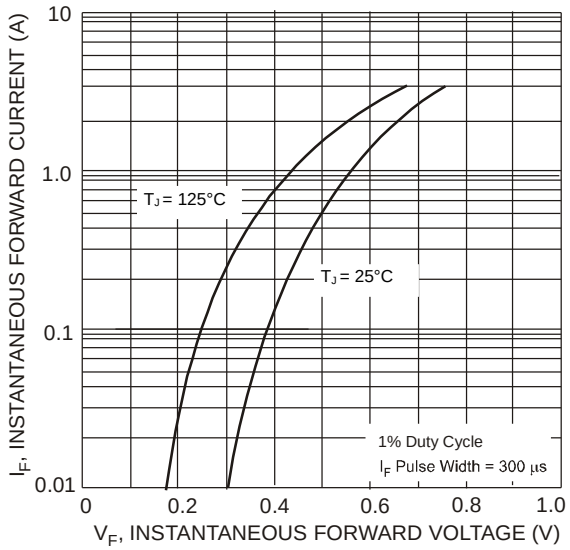


Fig. 3 Typical Forward Characteristics - SB150 thru SB160

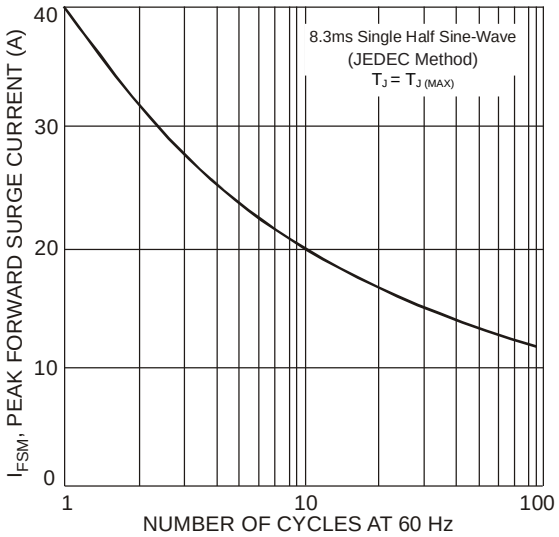


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

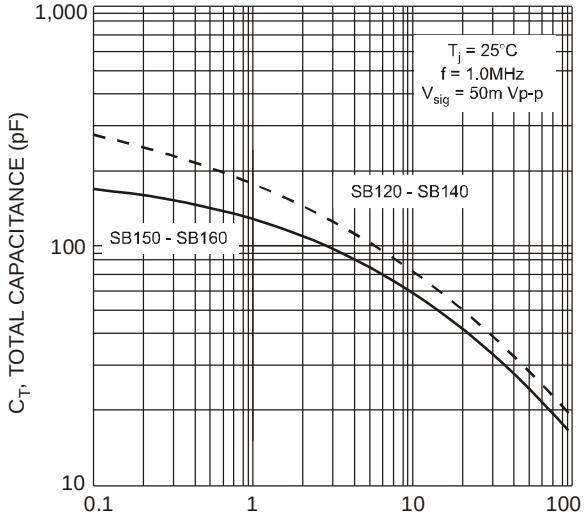


Fig. 5 Typical Total Capacitance

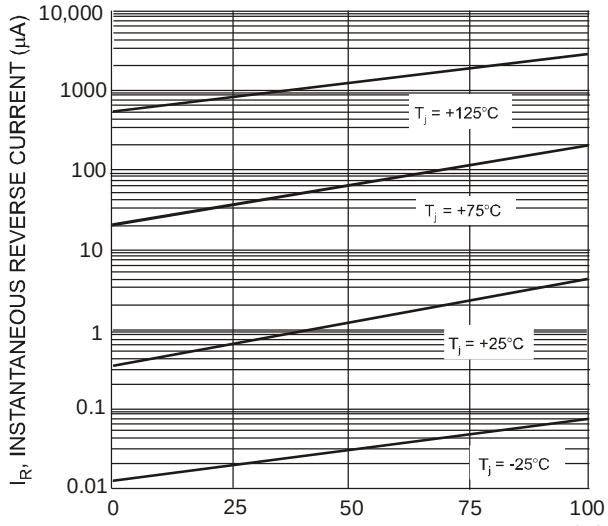


Fig. 6 Typical Reverse Characteristics, SB120 thru SB140

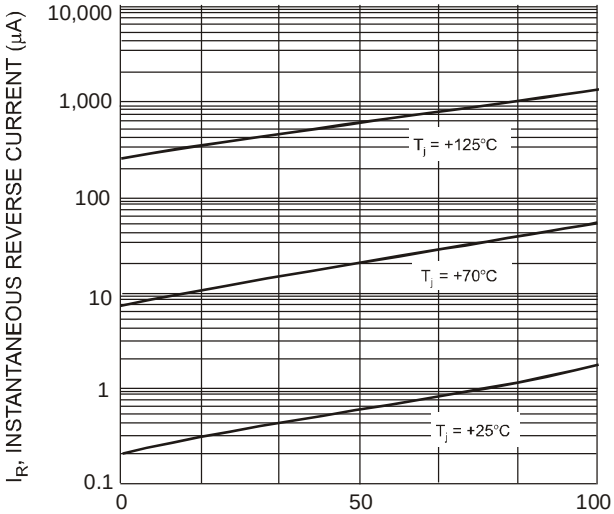
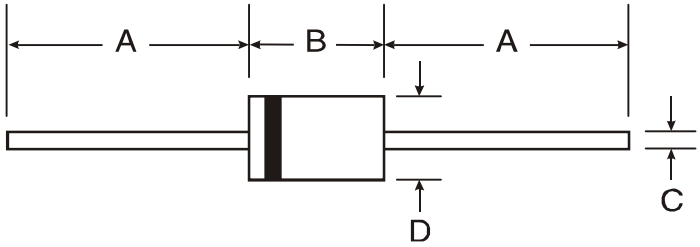


Fig. 7 Typical Reverse Characteristics, SB150 thru SB160

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

DO-41 (Plastic)



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		