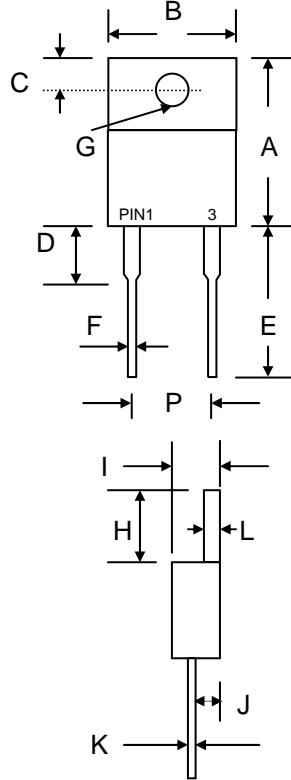


### Features

- Schottky Barrier Chip
- Guard Ring for Transient Protection
- Low Forward Voltage Drop
- Low Power Loss, High Efficiency
- High Surge Current Capability
- Epoxy Meets UL 94V-0 Classification
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

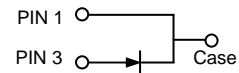
### Mechanical Data

- Case: TO-220A, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 1.9 grams (approx.)
- Mounting Position: Any
- Mounting Torque: 0.6 N.m Max.
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**



TO-220A		
Dim	Min	Max
A	13.90	15.90
B	9.80	10.70
C	2.54	3.43
D	3.56	4.56
E	12.70	14.73
F	0.51	0.96
G	3.55 Ø	4.09 Ø
H	5.75	6.85
I	4.16	5.00
J	2.03	2.92
K	0.30	0.65
L	1.14	1.40
P	4.83	5.33

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	SB 1020	SB 1030	SB 1040	SB 1045	SB 1050	SB 1060	SB 1080	SB 10100	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	45	50	60	80	100	V	
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	32	35	42	56	70	V	
Average Rectified Output Current @T <sub>C</sub> = 100°C	I <sub>O</sub>	10								A	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	150								A	
Forward Voltage @I <sub>F</sub> = 10A	V <sub>FM</sub>	0.55			0.75		0.85			V	
Peak Reverse Current @T <sub>J</sub> = 25°C At Rated DC Blocking Voltage @T <sub>J</sub> = 100°C	I <sub>RM</sub>	0.2				20					mA
Typical Junction Capacitance (Note 1)	C <sub>J</sub>	450				350					pF
Thermal Resistance Junction to Ambient Thermal Resistance Junction to Case	R <sub>JA</sub> R <sub>JC</sub>	73				2.0					°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150								°C	

Note: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

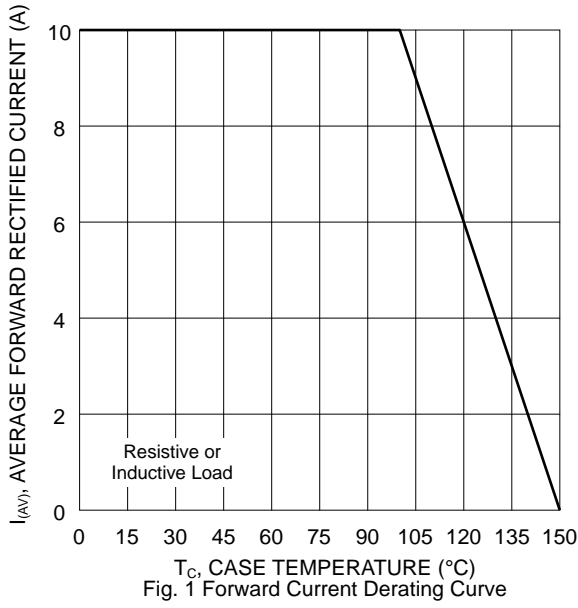


Fig. 1 Forward Current Derating Curve

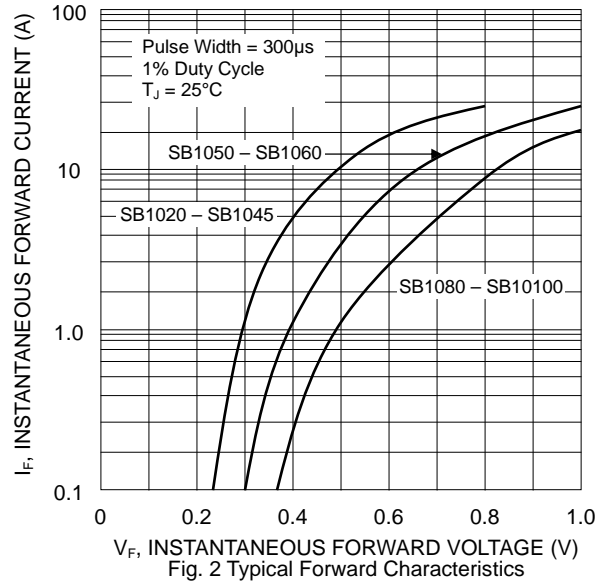


Fig. 2 Typical Forward Characteristics

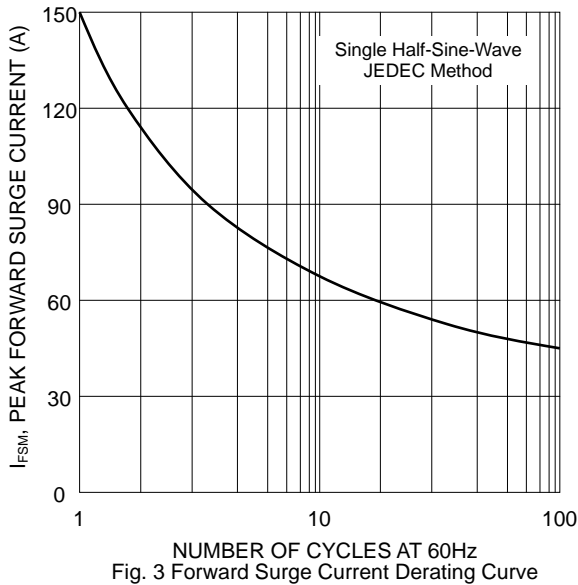


Fig. 3 Forward Surge Current Derating Curve

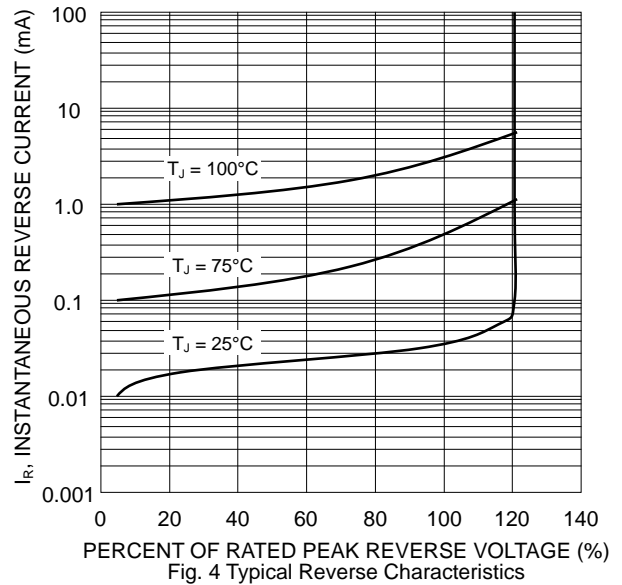


Fig. 4 Typical Reverse Characteristics

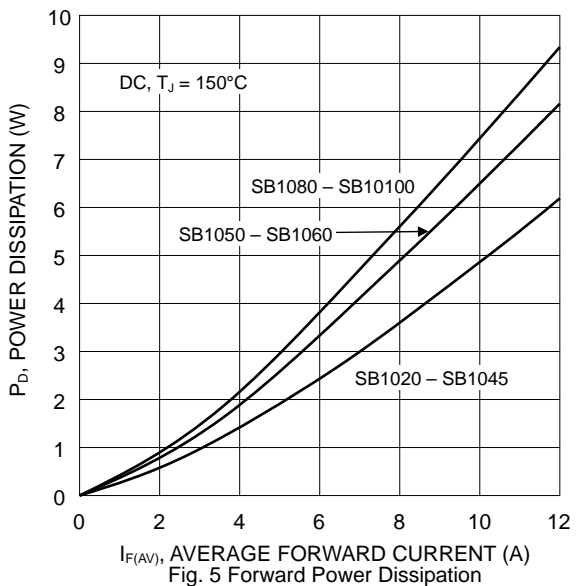


Fig. 5 Forward Power Dissipation

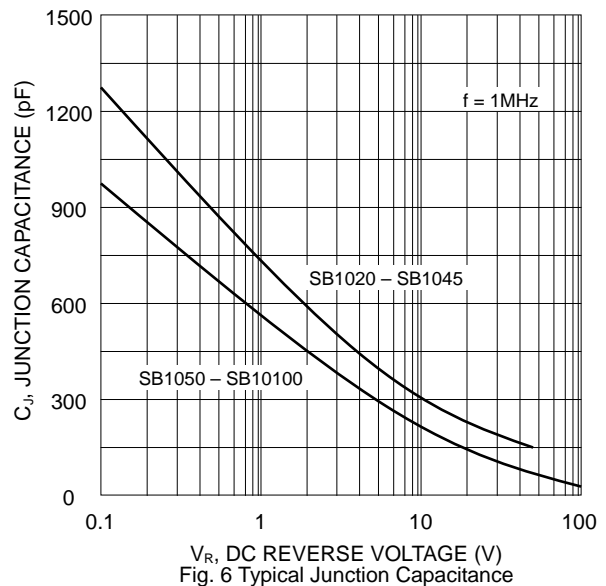
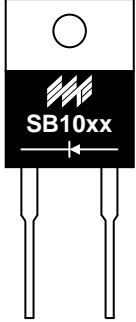


Fig. 6 Typical Junction Capacitance

## MARKING INFORMATION



SB10xx = Device Number  
 xx = 20, 30, 40, 45, 50, 60, 80 or 100  
 Polarity = As Marked on Body

## PACKAGING INFORMATION

**BULK**

Tube Size L x W x H (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
525 x 31 x 6	50	555 x 145 x 95	2,000	572 x 306 x 218	8,000	19.0

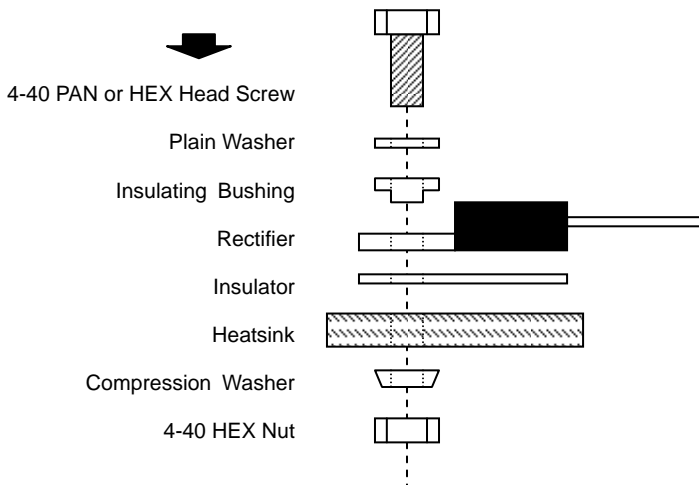
**Note:** 1. Anti-static tube, water clear color.

## RECOMMENDED SCREW MOUNTING ARRANGEMENT

Recommended isolated mounting when screw is at heatsink potential. 4-40 hardware is used.

Screw should not be tightened with any type of air-forced torque or equipment that may cause high impact on device package. The insulating bushing inside the mounting hole will insure the screw threads do not contact the metal base.

The interface should apply a layer of thermal grease or a highly conductive thermal pad for better heat dissipation.



4-40 PAN or HEX Head Screw  
 Plain Washer  
 Insulating Bushing  
 Rectifier  
 Insulator  
 Heatsink  
 Compression Washer  
 4-40 HEX Nut

## ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
SB1020	TO-220A	50 Units/Tube
SB1030	TO-220A	50 Units/Tube
SB1040	TO-220A	50 Units/Tube
SB1045	TO-220A	50 Units/Tube
SB1050	TO-220A	50 Units/Tube
SB1060	TO-220A	50 Units/Tube
SB1080	TO-220A	50 Units/Tube
SB10100	TO-220A	50 Units/Tube

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, SB1020-LF.**

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**WARNING:** DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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