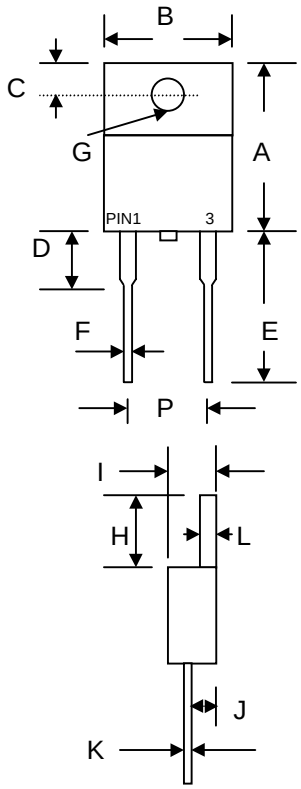
SB1020 – SB10100

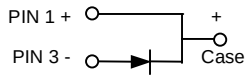
10A SCHOTTKY BARRIER RECTIFIER

Features

- Schottky Barrier Chip
- Guard Ring for Transient Protection
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-O



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		



Mechanical Data

- Case: TO-220A, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 2.24 grams (approx.)
- Mounting Position: Any
- Mounting Torque: 11.5 cm-kg (10 in-lbs) Max.
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 4**

Maximum Ratings and Electrical Characteristics @T_A=25℃ 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_{RRM} V_{RWM} V_R	20	30	40	45	50	60	80	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	32	35	42	56	70	V
Average Rectified Output Current @T_L = 95℃	I_O	10								A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150								A
Forward Voltage @I_F = 10A	V_{FM}	0.55				0.75		0.85		V
Peak Reverse Current @T_A = 25℃ At Rated DC Blocking Voltage @T_A = 100℃	I_{RM}	0.5 50								mA
Typical Junction Capacitance (Note 1)	C_j	700								pF
Typical Thermal Resistance (Note 2)	$R_{\theta JC}$	2.0								℃/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150								℃

Note: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.
2. Thermal resistance junction to case mounted on heatsink.

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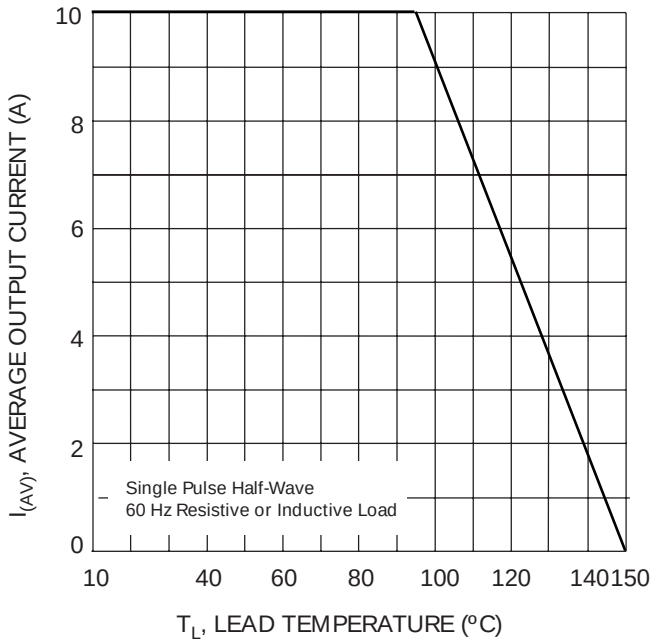

Fig. 1 Forward Current Derating Curve

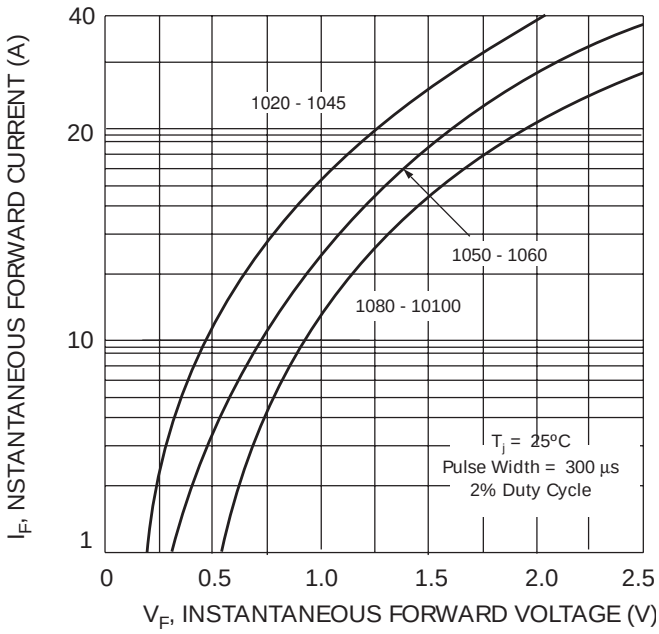

Fig. 2 Typical Forward Characteristics

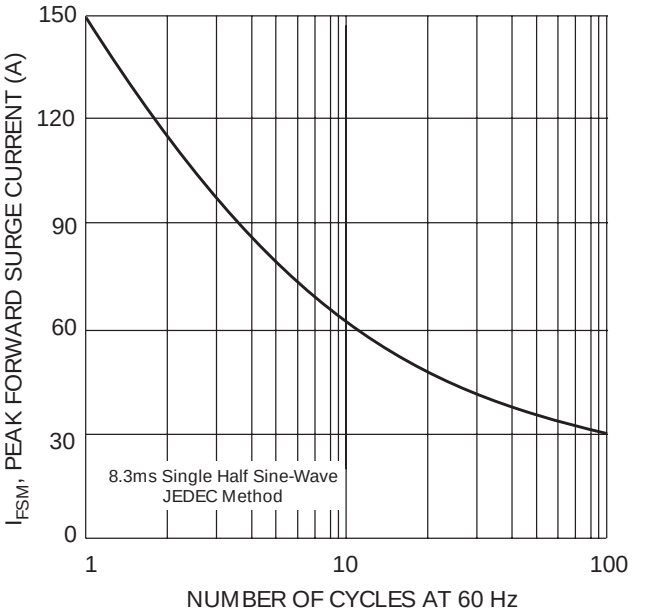

Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

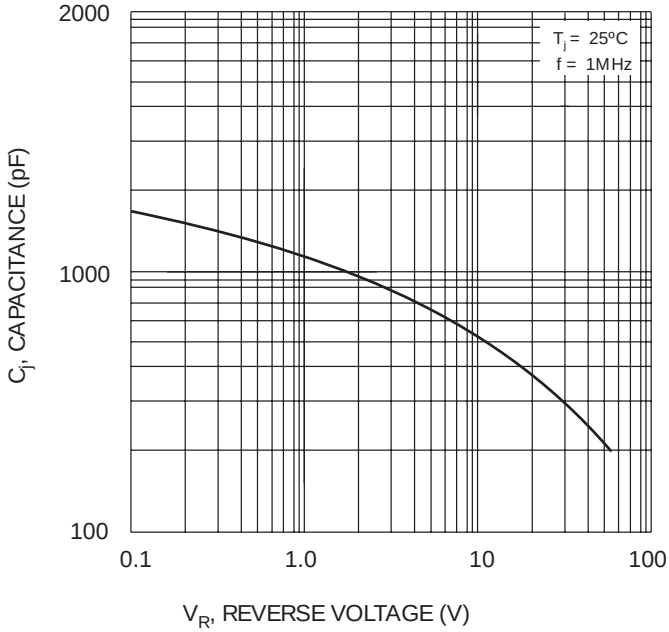

Fig. 4 Typical Junction Capacitance

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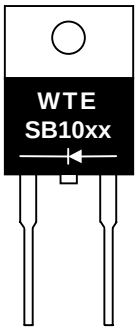
MARKING INFORMATION



WTE	= Manufacturer's Logo
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

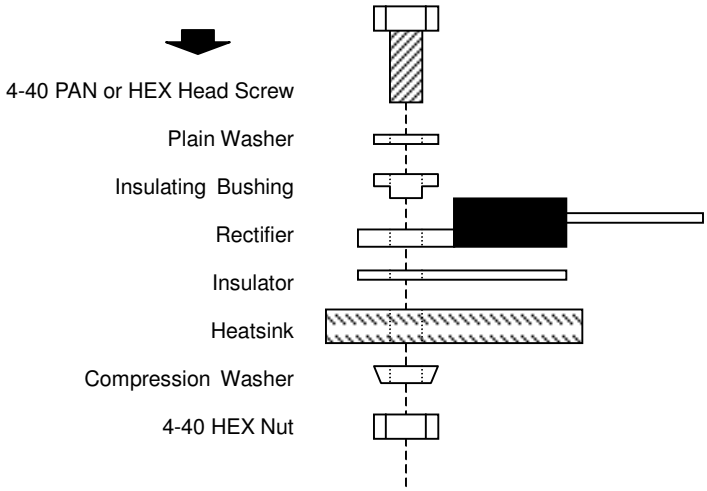
Note: 1. Anti-static tube, water clear color.

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.



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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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