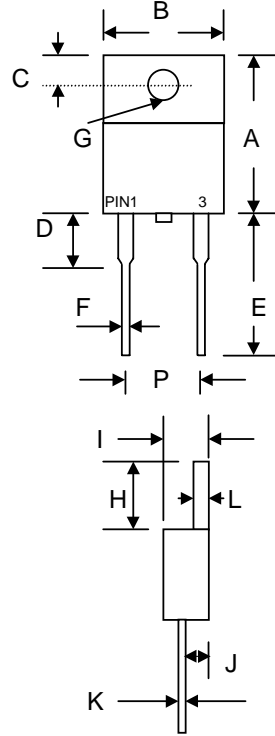


Features

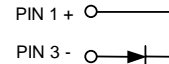
- Schottky Barrier Chip
- Guard Ring for Transient Protection
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-O

Mechanical Data

- Case: ITO-220A, Full 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**



| ITO-220A | | |
|----------------------|--------|--------|
| Dim | Min | Max |
| A | 14.60 | 15.40 |
| B | 9.70 | 10.30 |
| C | 2.55 | 2.85 |
| D | 3.56 | 4.16 |
| E | 13.00 | 13.80 |
| F | 0.30 | 0.90 |
| G | 3.00 Ø | 3.50 Ø |
| H | 6.30 | 6.90 |
| I | 4.20 | 4.80 |
| J | 2.50 | 2.90 |
| K | 0.36 | 0.80 |
| L | 2.90 | 3.30 |
| P | 4.83 | 5.33 |
| All Dimensions in mm | | |



Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Single Phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | SB 820F | SB 830F | SB 840F | SB 845F | SB 850F | SB 860F | SB 880F | SB 8100F | Unit | |
|---|-----------------|-------------|---------|---------|---------|---------|---------|---------|----------|--------------------|----|
| Peak Repetitive Reverse Voltage | V_{RRM} | | | | | | | | | | |
| Working Peak Reverse Voltage | V_{RWM} | 20 | 30 | 40 | 45 | 50 | 60 | 80 | 100 | V | |
| DC Blocking Voltage | V_R | | | | | | | | | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 14 | 21 | 28 | 32 | 35 | 42 | 56 | 70 | V | |
| Average Rectified Output Current @ $T_C = 95^\circ\text{C}$ | I_o | 8.0 | | | | | | | | 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 @ $I_F = 8.0\text{A}$ | V_{FM} | 0.55 | | | 0.75 | | 0.85 | | | V | |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$ | I_{RM} | 0.5 | | | | | 50 | | | | mA |
| Typical Junction Capacitance (Note 1) | C_j | 700 | | | | | | | | pF | |
| Typical Thermal Resistance (Note 2) | $R_{\theta JC}$ | 5.0 | | | | | | | | $^\circ\text{C/W}$ | |
| Operating and Storage Temperature Range | T_i, T_{STG} | -65 to +150 | | | | | | | | $^\circ\text{C}$ | |

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.

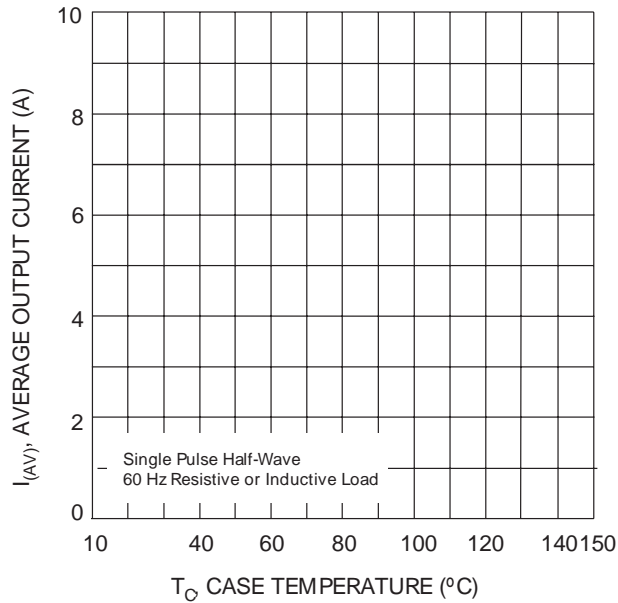


Fig. 1 Forward Current Derating Curve

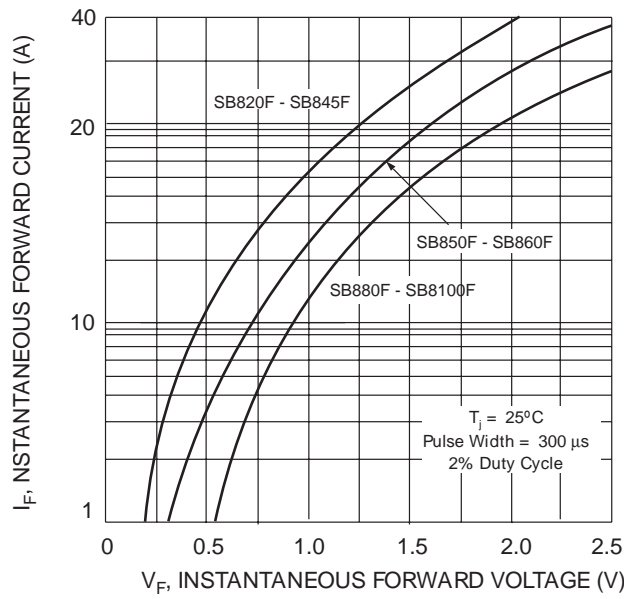


Fig. 2 Typical Forward Characteristics

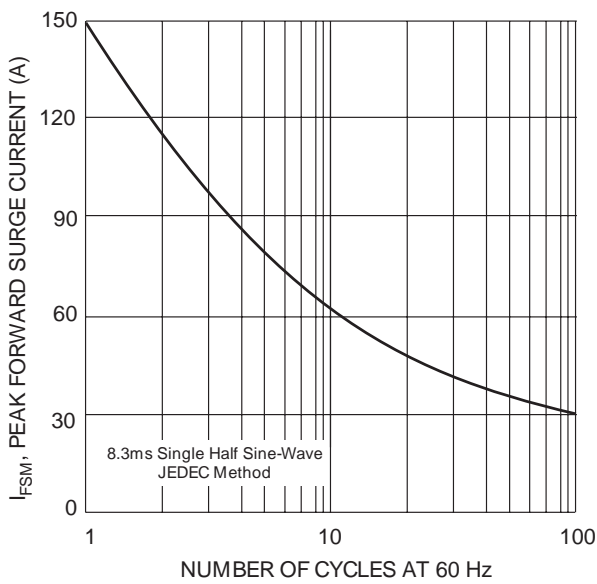


Fig. 3 Maximum Non-Repetitive Peak Fwd Surge Current

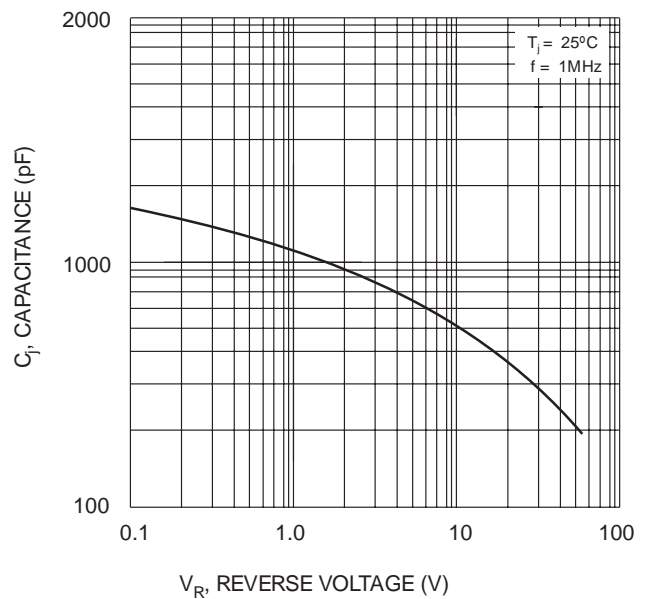
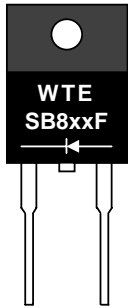


Fig. 4 Typical Junction Capacitance

MARKING INFORMATION



WTE = Manufacturer's Logo
 SB8xxF = 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 |

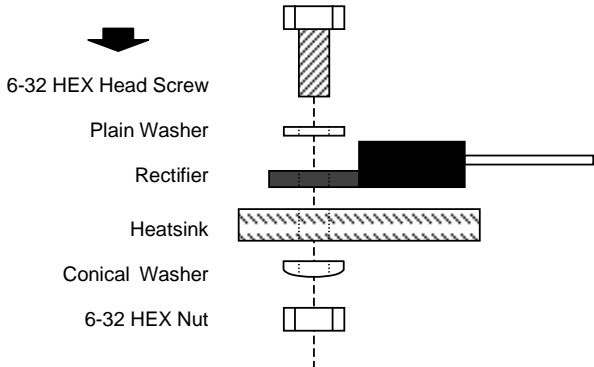
Note: 1. Anti-static tube, water clear color.

RECOMMENDED SCREW MOUNTING ARRANGEMENT

The full molded plastic package affords a major reduction of hardware as compared to a standard TO-220 package. However, precautions should be made in mounting procedure.

A conical washer should be used to apply proper force to the device. Screw should not be tightened with any type of air-forced torque or equipment that may cause crack on device package.

A layer of thermal grease or thermal pad in the interface will be considerably helpful for heat dissipation.



ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| SB820F | ITO-220A | 50 Units/Tube |
| SB830F | ITO-220A | 50 Units/Tube |
| SB840F | ITO-220A | 50 Units/Tube |
| SB845F | ITO-220A | 50 Units/Tube |
| SB850F | ITO-220A | 50 Units/Tube |
| SB860F | ITO-220A | 50 Units/Tube |
| SB880F | ITO-220A | 50 Units/Tube |
| SB8100F | ITO-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, SB820F-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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