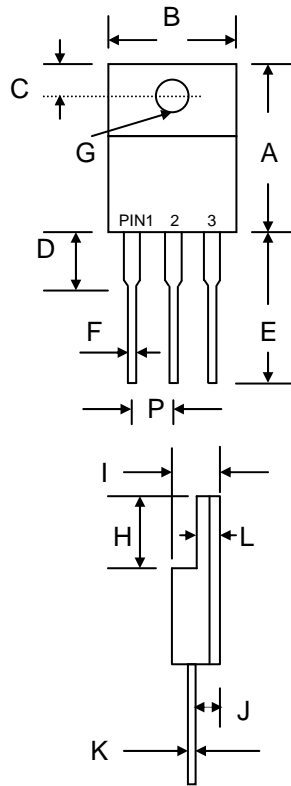


Features

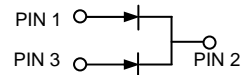
- Schottky Barrier Chip
- Guard Ring for Transient Protection
- Low Forward Voltage Drop
- Low Power Loss, High Efficiency
- High Surge Current Capability
- Epoxy Meets UL 94V-0 Classification
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

Mechanical Data

- Case: ITO-220, Full 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**



| ITO-220 | | |
|----------------------|--------|--------|
| Dim | Min | Max |
| A | 14.60 | 15.40 |
| B | 9.70 | 10.30 |
| C | 2.55 | 2.85 |
| D | — | 4.16 |
| E | 13.00 | 13.80 |
| F | 0.50 | 0.75 |
| G | 3.00 Ø | 3.50 Ø |
| H | 6.30 | 6.90 |
| I | 4.20 | 4.80 |
| J | 2.50 | 2.90 |
| K | 0.50 | 0.75 |
| L | 2.60 | 3.30 |
| P | 2.29 | 2.79 |
| 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 | SB | SB | SB | SB | SB | SB | SB | SB | Unit | |
|---|--|--------------|---------|---------|--------------|-------------|--------------|---------|----------|------|------|
| | | 3020FCT | 3030FCT | 3040FCT | 3045FCT | 3050FCT | 3060FCT | 3080FCT | 30100FCT | | |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{VRM} 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 _C = 100°C | I _O | 30 15 | | | | | | | | A | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) | I _{FSM} | 200 | | | | | | | | A | |
| Forward Voltage per diode @I _F = 15A, T _J = 25°C @I _F = 15A, T _J = 125°C | V _{FM} | 0.62 0.57 | | | 0.75 0.65 | | 0.85 0.75 | | | V | |
| Peak Reverse Current At Rated DC Blocking Voltage | I _{RM} | | | | | 1.0 20 | | | | | mA |
| Typical Junction Capacitance (Note 1) | C _J | 750 | | | | 500 | | | | pF | |
| Thermal Resistance Junction to Ambient per diode Thermal Resistance Junction to Case per diode | R _{JA} R _{JC} | | | | | 52 4.0 | | | | | °C/W |
| RMS Isolation Voltage, t = 1 min | V _{ISO} | | | | | 1500 | | | | V | |
| Operating and Storage Temperature Range | T _J , T _{STG} | | | | | -55 to +150 | | | | °C | |

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

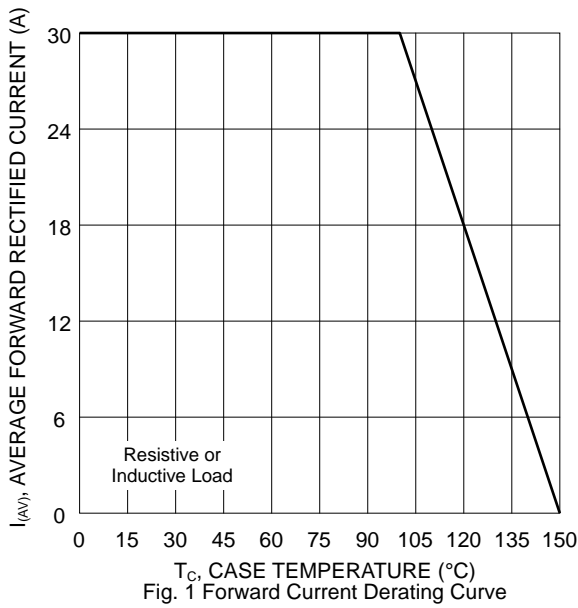


Fig. 1 Forward Current Derating Curve

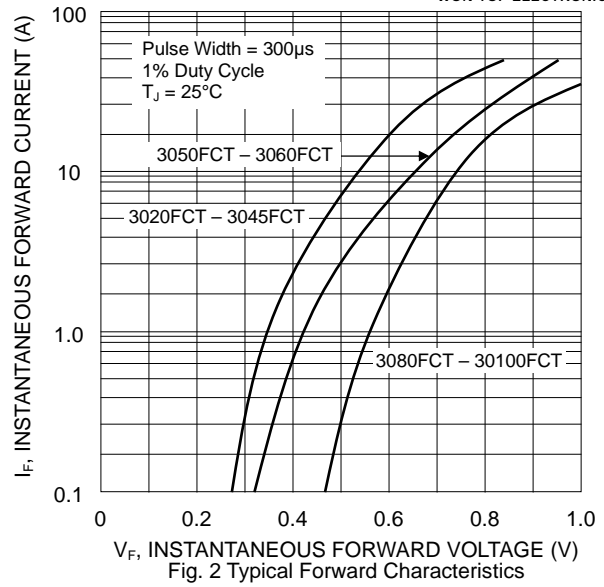


Fig. 2 Typical Forward Characteristics

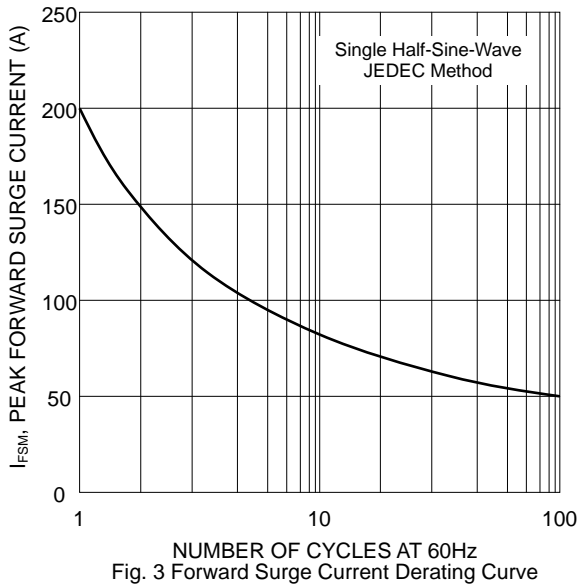


Fig. 3 Forward Surge Current Derating Curve

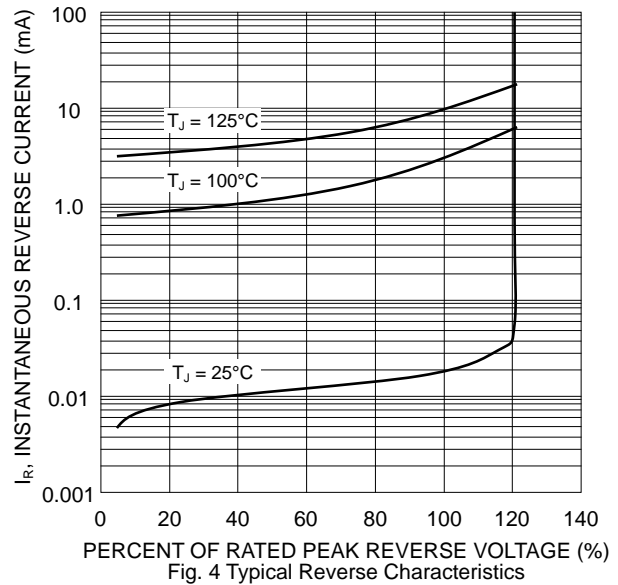


Fig. 4 Typical Reverse Characteristics

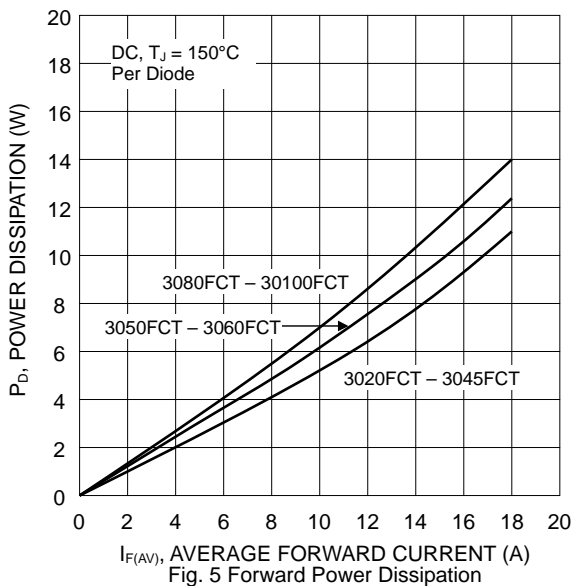


Fig. 5 Forward Power Dissipation

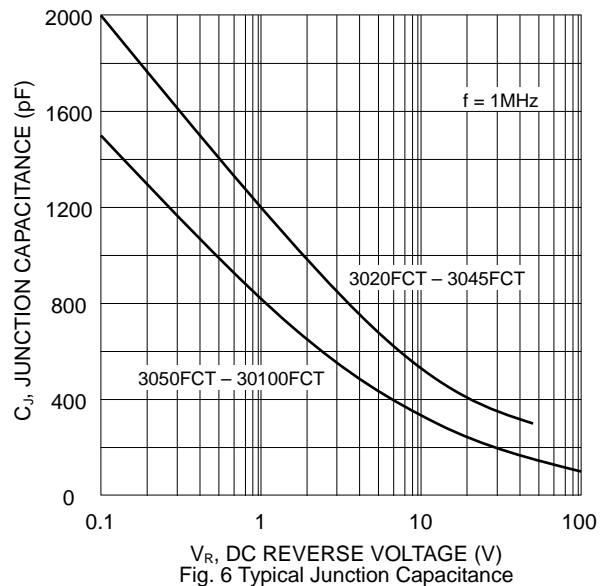
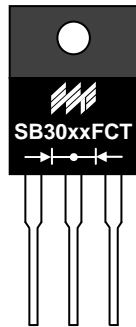


Fig. 6 Typical Junction Capacitance

MARKING INFORMATION



SB30xxFCT = 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 |

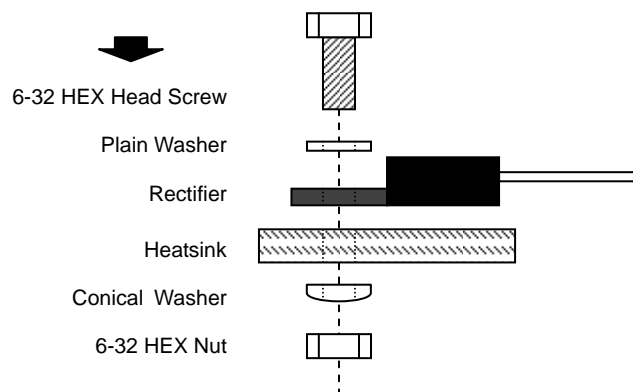
Note: 1. Anti-static tube, water clear color.

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 |
|-------------|--------------|-------------------|
| SB3020FCT | ITO-220 | 50 Units/Tube |
| SB3030FCT | ITO-220 | 50 Units/Tube |
| SB3040FCT | ITO-220 | 50 Units/Tube |
| SB3045FCT | ITO-220 | 50 Units/Tube |
| SB3050FCT | ITO-220 | 50 Units/Tube |
| SB3060FCT | ITO-220 | 50 Units/Tube |
| SB3080FCT | ITO-220 | 50 Units/Tube |
| SB30100FCT | ITO-220 | 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, SB3020FCT-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.

Won-Top Electronics Co., Ltd.
No. 44 Yu Kang North 3rd Road,
Chine Chen Dist., Kaohsiung 806, Taiwan
Phone: 886-7-822-5408 or 886-7-822-5410
Fax: 886-7-822-5417
Email: sales@wontop.com
Internet: http://www.wontop.com

We power your everyday.