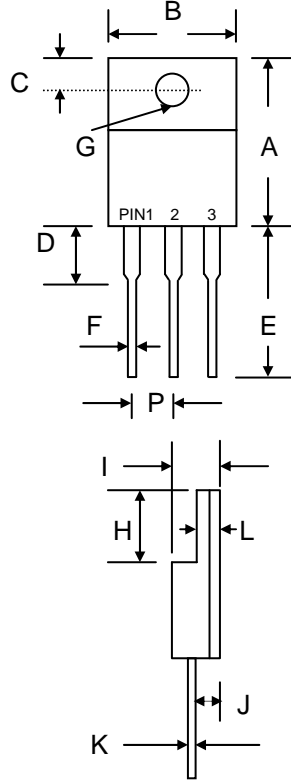


Features

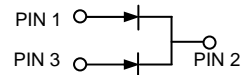
- Glass Passivated Die Construction
- Superfast 35nS and 50nS Recovery Time
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Epoxy Meets UL 94V-0 Classification
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

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 | ER | ER | ER | ER | ER | ER | ER | Unit | |
|---|-----------------------------------|-------------|---------|----------|---------|---------|---------|---------|------|------|
| | | 1600FCT | 1601FCT | 1601AFCT | 1602FCT | 1603FCT | 1604FCT | 1606FCT | | |
| Peak Repetitive Reverse Voltage | V _{RRM} | | | | | | | | V | |
| Working Peak Reverse Voltage | V _{RWM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | | |
| DC Blocking Voltage | V _R | | | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V | |
| Average Rectified Output Current @T _C = 100°C | I _O | 16 8.0 | | | | | | | 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 = 8.0A | V _{FM} | 0.95 | | | 1.3 | | 1.7 | | V | |
| Peak Reverse Current At Rated DC Blocking Voltage | I _{RM} | 10 500 | | | | | | | | µA |
| Reverse Recovery Time (Note 1) | t _{rr} | 35 | | | 50 | | | | | nS |
| Typical Junction Capacitance (Note 2) | C _J | 85 | | | 60 | | | | | pF |
| Thermal Resistance Junction to Ambient per diode | R _{JA} | 62 | | | | | | | | °C/W |
| Thermal Resistance Junction to Case per diode | R _{JC} | 4.5 | | | | | | | | |
| 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 with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

ER1600FCT – ER1606FCT

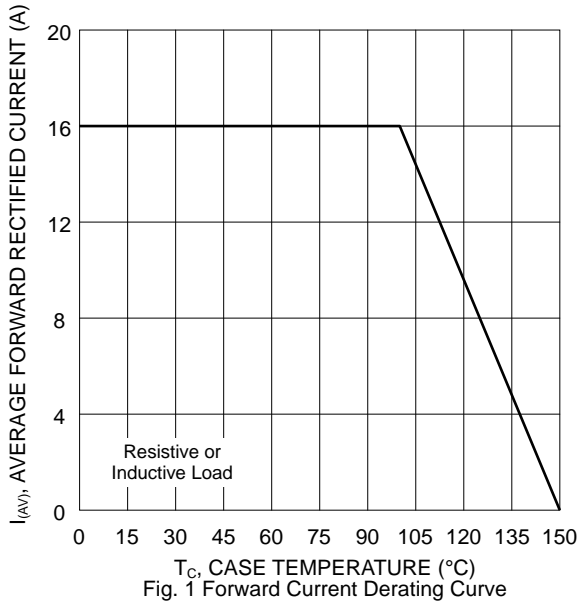


Fig. 1 Forward Current Derating Curve

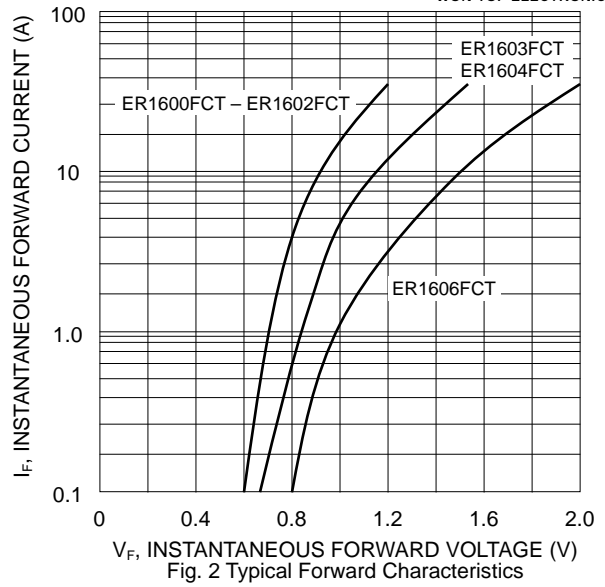


Fig. 2 Typical Forward Characteristics

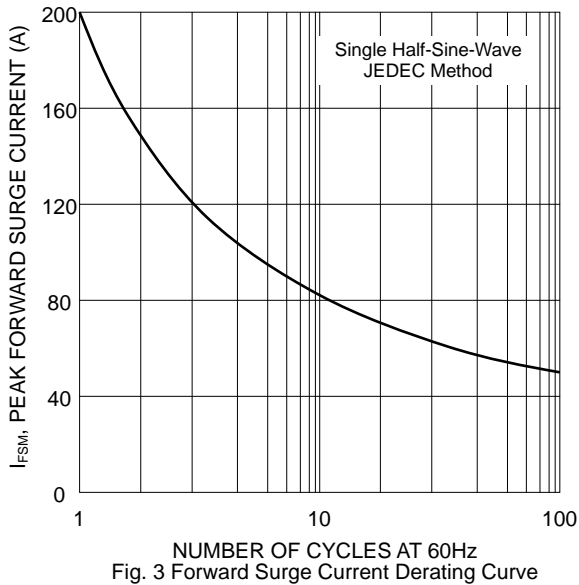


Fig. 3 Forward Surge Current Derating Curve

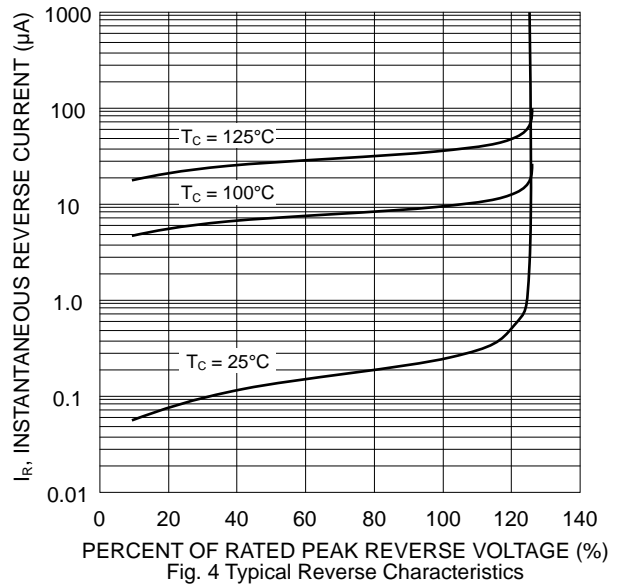


Fig. 4 Typical Reverse Characteristics

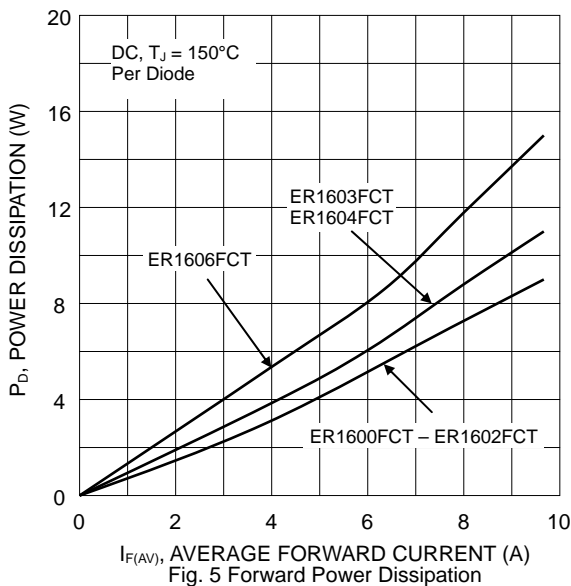


Fig. 5 Forward Power Dissipation

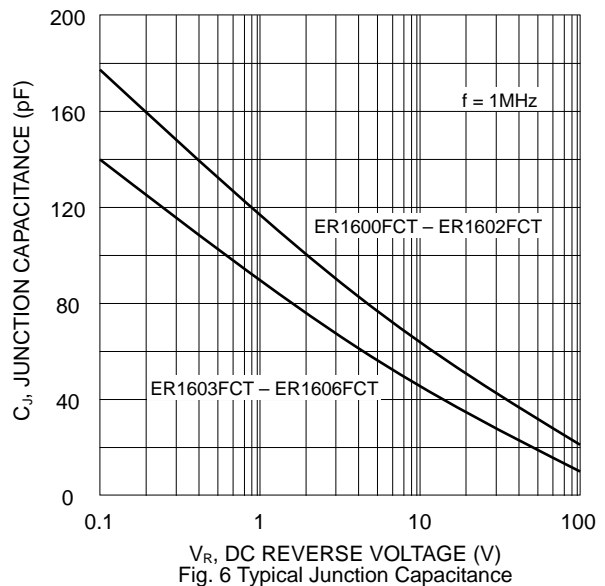
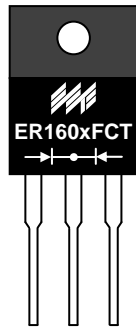


Fig. 6 Typical Junction Capacitance

MARKING INFORMATION



ER160x FCT = Device Number
 x = 0, 1, 1A, 2, 3, 4 or 6
 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 |

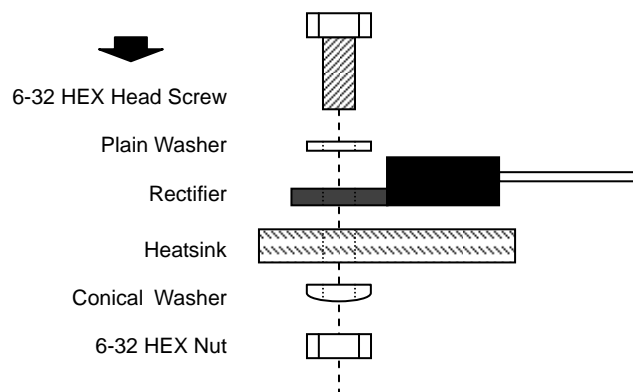
Note: 1. Anti-static tube, water clear color.

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 |
|-------------|--------------|-------------------|
| ER1600FCT | ITO-220 | 50 Units/Tube |
| ER1601FCT | ITO-220 | 50 Units/Tube |
| ER1601AFCT | ITO-220 | 50 Units/Tube |
| ER1602FCT | ITO-220 | 50 Units/Tube |
| ER1603FCT | ITO-220 | 50 Units/Tube |
| ER1604FCT | ITO-220 | 50 Units/Tube |
| ER1606FCT | 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, ER1600FCT-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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We power your everyday.