

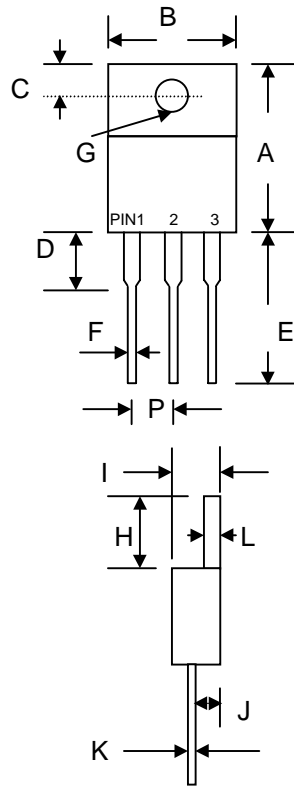
## 16A GLASS PASSIVATED DUAL SUPERFAST RECTIFIER

### Features

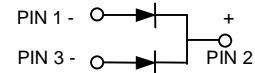
- Glass Passivated Die Construction
- Super-Fast Switching
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-O

### Mechanical Data

- Case: ITO-220, 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-220              |        |        |
|----------------------|--------|--------|
| 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                    | 2.29   | 2.79   |
| 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         | 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<br>@ $T_C = 105^\circ\text{C}$   | $I_o$          | 16          |         |          |         |         |         |         | A                |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)   | $I_{FSM}$      | 125         |         |          |         |         |         |         | A                |
| Forward Voltage<br>@ $I_F = 8.0\text{A}$  | $V_{FM}$       | 0.95        |         |          | 1.3     |         | 1.7     |         | V                |
| Peak Reverse Current<br>@ $T_A = 25^\circ\text{C}$<br>At Rated DC Blocking Voltage<br>@ $T_A = 125^\circ\text{C}$ | $I_{RM}$       | 10<br>500   |         |          |         |         |         |         | $\mu\text{A}$    |
| Reverse Recovery Time (Note 1)  | $t_{rr}$       | 35          |         |          | 50      |         |         |         | nS               |
| Typical Junction Capacitance (Note 2)   | $C_j$          | 80          |         |          | 60      |         |         |         | pF               |
| Operating and Storage Temperature Range   | $T_j, T_{STG}$ | -65 to +150 |         |          |         |         |         |         | $^\circ\text{C}$ |

Note: 1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $IRR = 0.25\text{A}$ .  
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

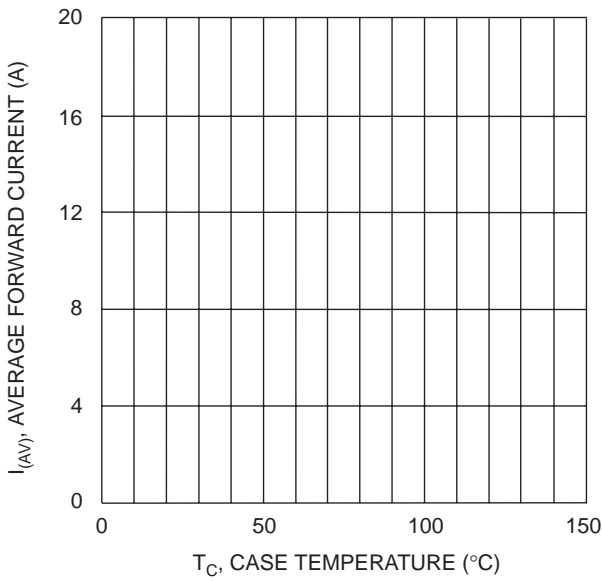


Fig. 1 Forward Current Derating Curve

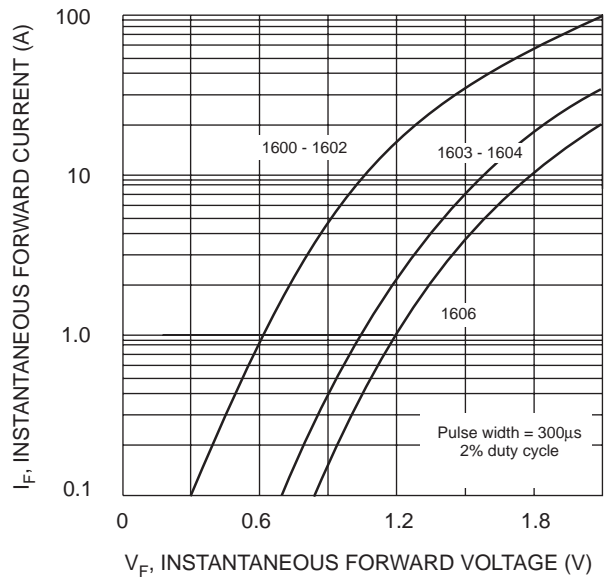


Fig. 2 Typical Forward Characteristics

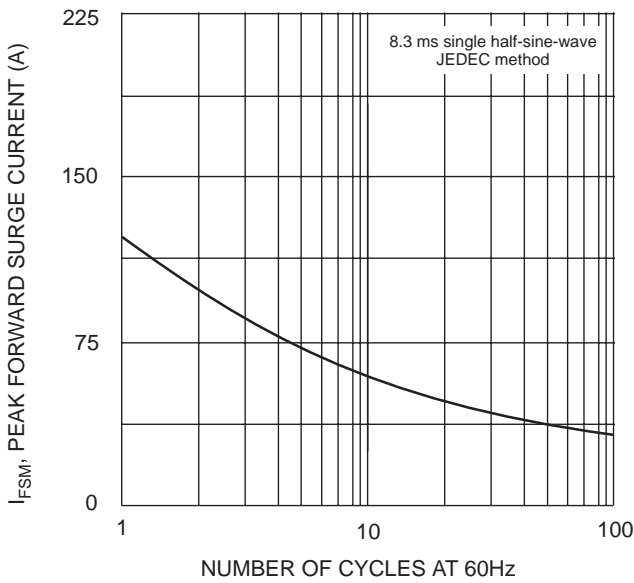


Fig. 3 Maximum Non-Repetitive Surge Current

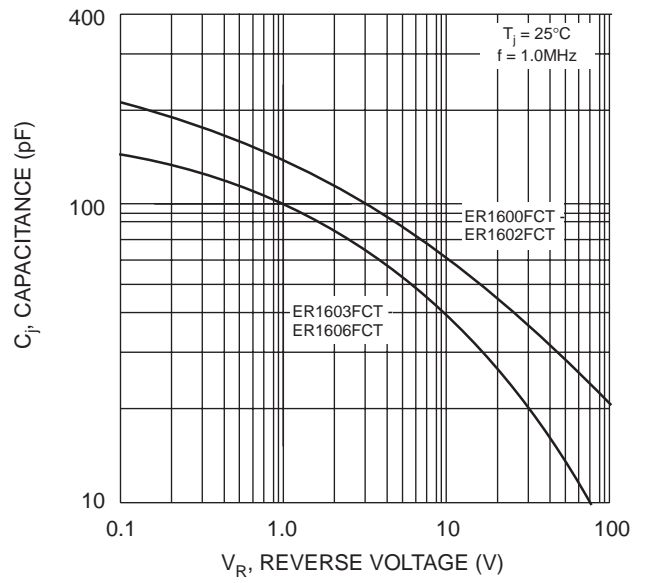
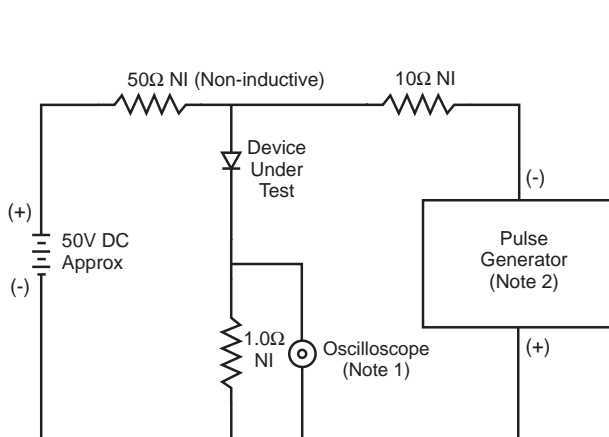
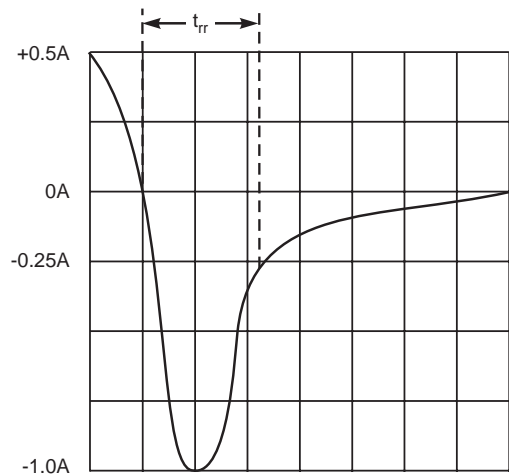


Fig. 4 Typical Junction Capacitance



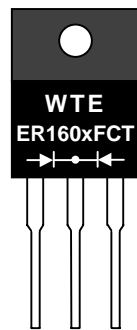
- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## MARKING INFORMATION



WTE = Manufacturer's Logo  
 ER160xFACT = Device Number  
 x = 0, 1, 1A, 2, 3, 4 or 6  
 Polarity = As Marked on Body

## PACKAGING INFORMATION

### BULK

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

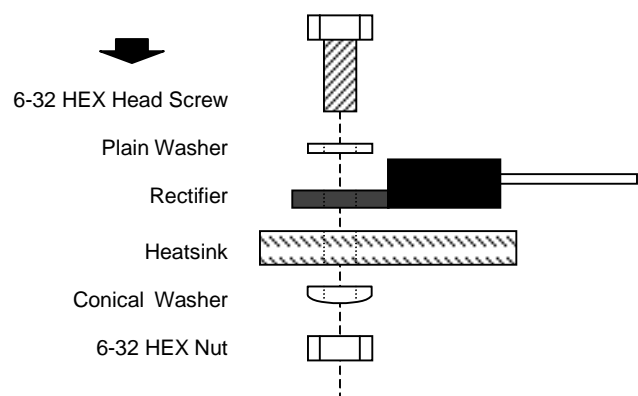
**Note:** 1. Anti-static tube, water clear color.

## 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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