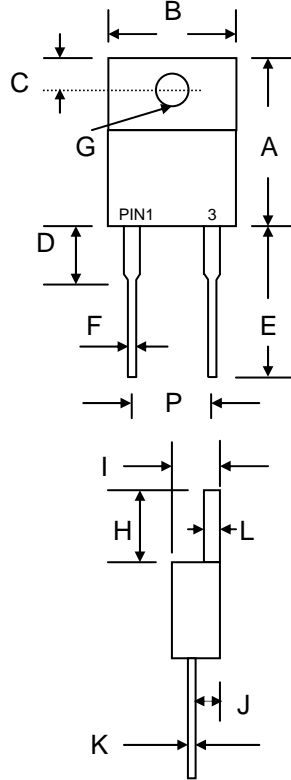


### Features

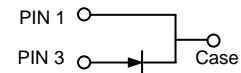
- Glass Passivated Die Construction
- Ultrafast 50nS and 100nS Recovery Time
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Epoxy Meets UL 94V-0 Classification
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

### Mechanical Data

- Case: TO-220A, 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**



| 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 |        |        |



### 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         | UF800       | UF801 | UF802 | UF803 | UF804 | UF806 | UF808 | Unit                      |
|---|----------------|-------------|-------|-------|-------|-------|-------|-------|---------------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$      |             |       |       |       |       |       |       | V                         |
| Working Peak Reverse Voltage  | $V_{RWM}$      | 50          | 100   | 200   | 300   | 400   | 600   | 800   |                           |
| DC Blocking Voltage   | $V_R$          |             |       |       |       |       |       |       |                           |
| RMS Reverse Voltage   | $V_{R(RMS)}$   | 35          | 70    | 140   | 210   | 280   | 420   | 560   | V                         |
| Average Rectified Output Current @ $T_C = 100^\circ\text{C}$  | $I_O$          | 8.0         |       |       |       |       |       |       | A                         |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed<br>on Rated Load (JEDEC Method) | $I_{FSM}$      | 125         |       |       |       |       |       |       | A                         |
| Forward Voltage @ $I_F = 8.0\text{A}$   | $V_{FM}$       | 1.0         |       |       | 1.3   |       | 1.7   |       | V                         |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$<br>At Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$           | $I_{RM}$       | 10<br>500   |       |       |       |       |       |       | $\mu\text{A}$             |
| Reverse Recovery Time (Note 1)  | $t_{rr}$       | 50          |       |       |       |       | 100   |       | nS                        |
| Typical Junction Capacitance (Note 2)   | $C_J$          | 80          |       |       |       |       | 50    |       | pF                        |
| Thermal Resistance Junction to Ambient  | $R_{JA}$       | 73          |       |       |       |       |       |       | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance Junction to Case   | $R_{JC}$       | 3.0         |       |       |       |       |       |       |                           |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$ | -55 to +150 |       |       |       |       |       |       | $^\circ\text{C}$          |

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

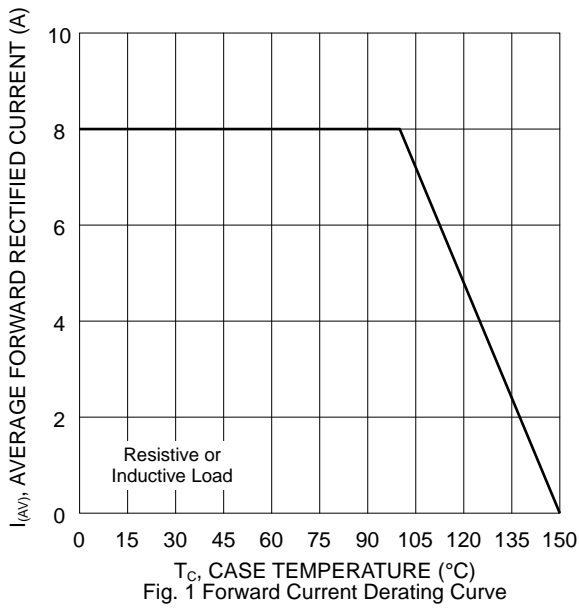


Fig. 1 Forward Current Derating Curve

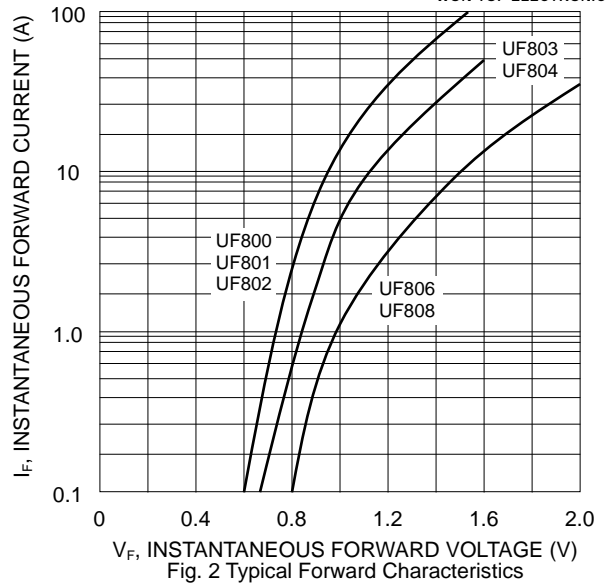


Fig. 2 Typical Forward Characteristics

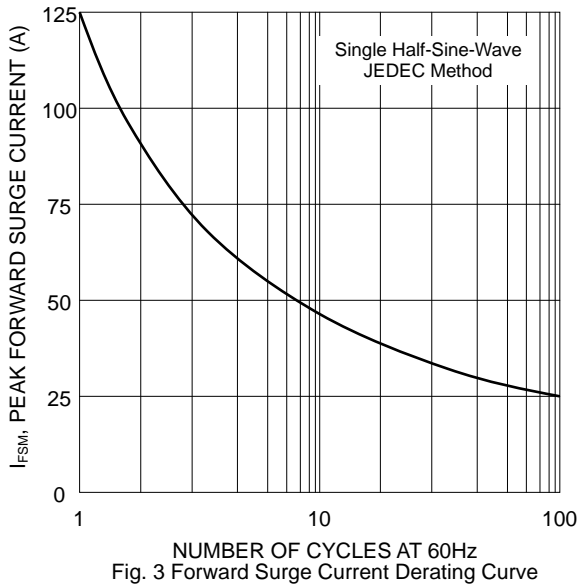


Fig. 3 Forward Surge Current Derating Curve

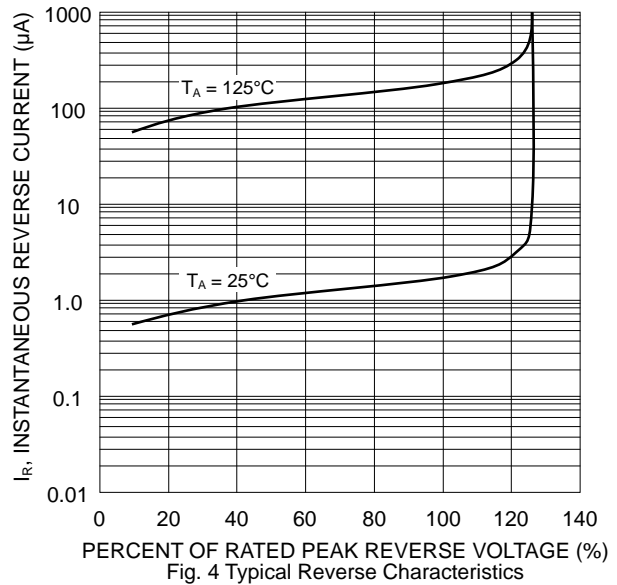


Fig. 4 Typical Reverse Characteristics

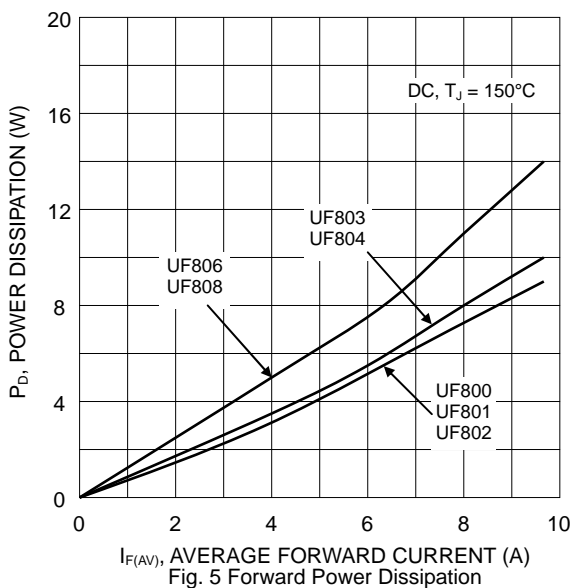


Fig. 5 Forward Power Dissipation

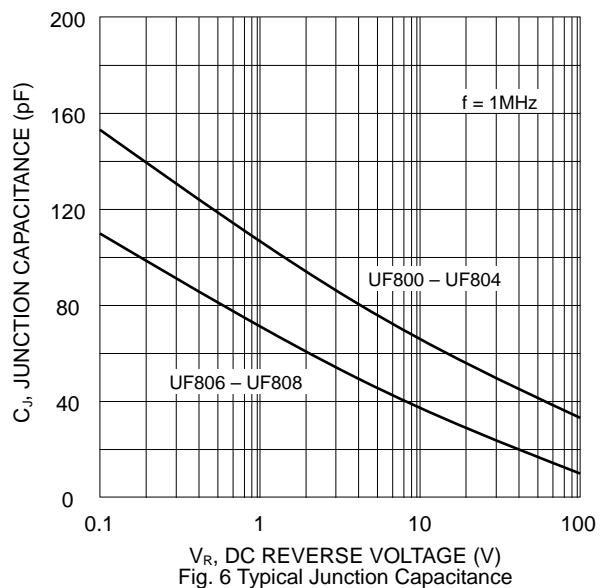
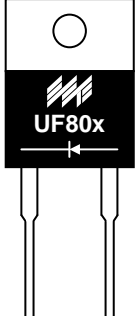


Fig. 6 Typical Junction Capacitance

## MARKING INFORMATION



UF80x = Device Number  
x = 0, 1, 2, 3, 4, 6 or 8  
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                         |

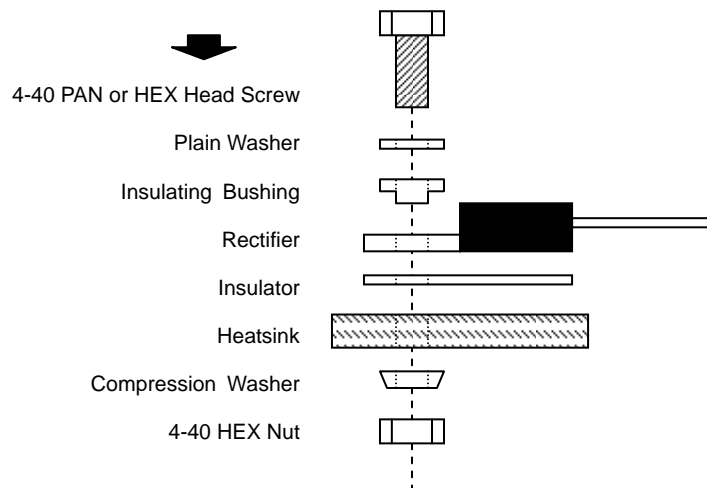
**Note:** 1. Anti-static tube, water clear color.

## RECOMMENDED SCREW MOUNTING ARRANGEMENT

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.



## ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| UF800       | TO-220A      | 50 Units/Tube     |
| UF801       | TO-220A      | 50 Units/Tube     |
| UF802       | TO-220A      | 50 Units/Tube     |
| UF803       | TO-220A      | 50 Units/Tube     |
| UF804       | TO-220A      | 50 Units/Tube     |
| UF806       | TO-220A      | 50 Units/Tube     |
| UF808       | 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, UF800-LF.**

WON-TOP ELECTRONICS and  are registered trademarks of Won-Top Electronics Co., Ltd (WTE). WTE has checked all information carefully and believes it to be correct and accurate. However, WTE cannot assume any responsibility for inaccuracies. Furthermore, this information does not give the purchaser of semiconductor devices any license under patent rights to manufacturer. WTE reserves the right to change any or all information herein without further notice.

**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.*