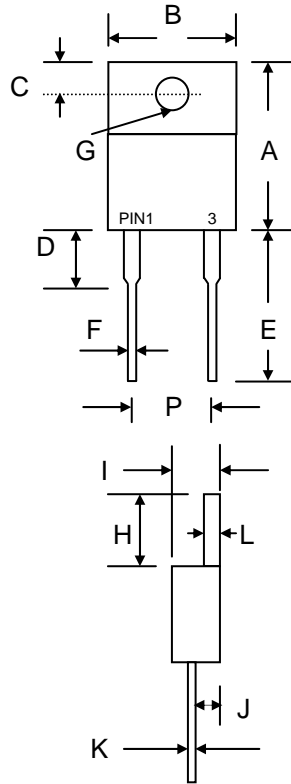


### Features

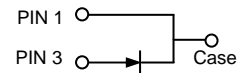
- Glass Passivated Die Construction
- Superfast 35nS and 50nS Recovery Time
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- High Surge Current Capability
- Epoxy Meets UL 94V-0 Classification
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

### Mechanical Data

- Case: 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	ER 800	ER 801	ER 801A	ER 802	ER 803	ER 804	ER 806	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
Working Peak Reverse Voltage	$V_{RWM}$								
DC Blocking Voltage	$V_R$								
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	420	V
Average Rectified Output Current @ $T_C = 100^{\circ}\text{C}$	$I_O$	8.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	125							A
Forward Voltage @ $I_F = 8.0\text{A}$	$V_{FM}$	0.95			1.3		1.7		V
Peak Reverse Current @ $T_C = 25^{\circ}\text{C}$ At Rated DC Blocking Voltage @ $T_C = 100^{\circ}\text{C}$	$I_{RM}$	10 500							$\mu\text{A}$
Reverse Recovery Time (Note 1)	$t_{rr}$	35			50				nS
Typical Junction Capacitance (Note 2)	$C_J$	85			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.

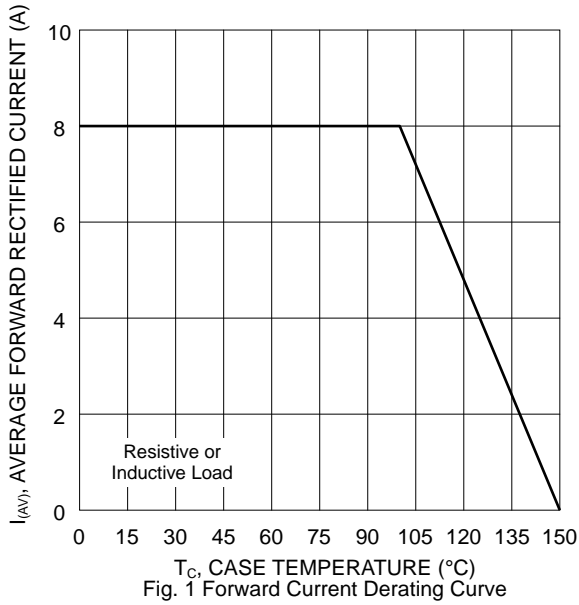


Fig. 1 Forward Current Derating Curve

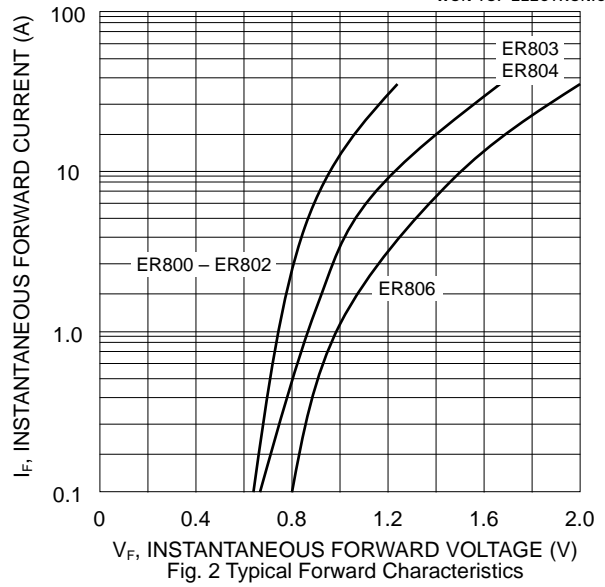


Fig. 2 Typical Forward Characteristics

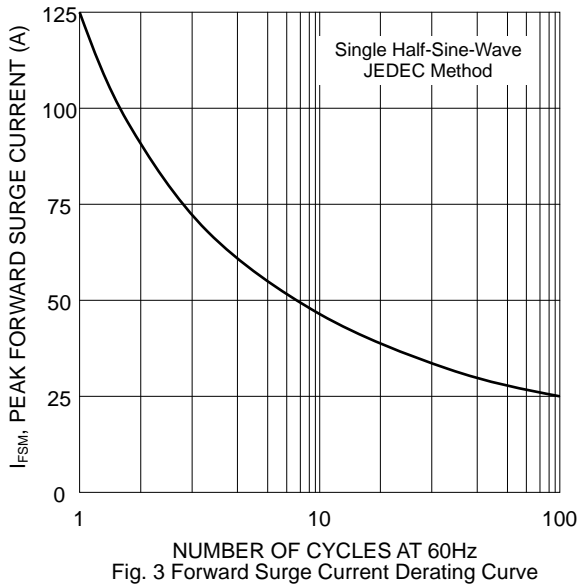


Fig. 3 Forward Surge Current Derating Curve

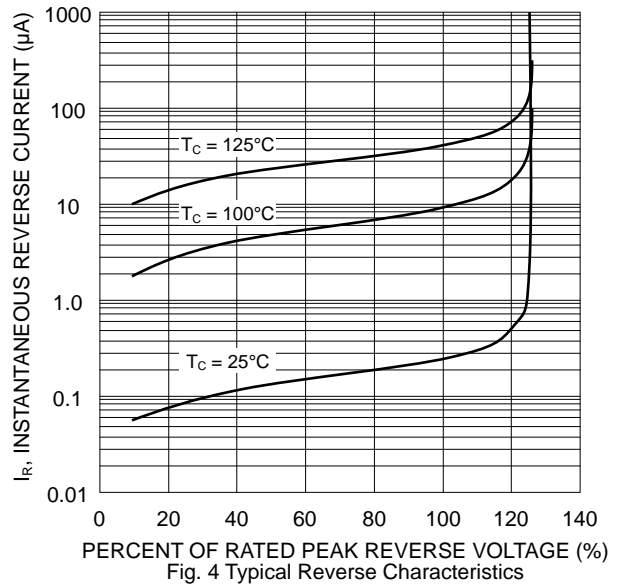


Fig. 4 Typical Reverse Characteristics

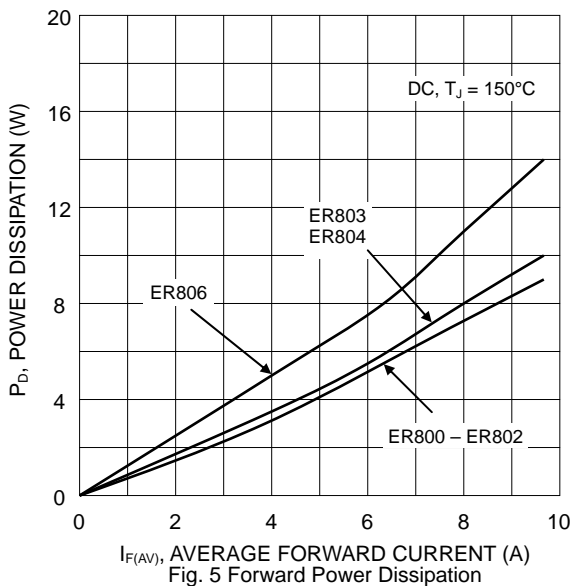


Fig. 5 Forward Power Dissipation

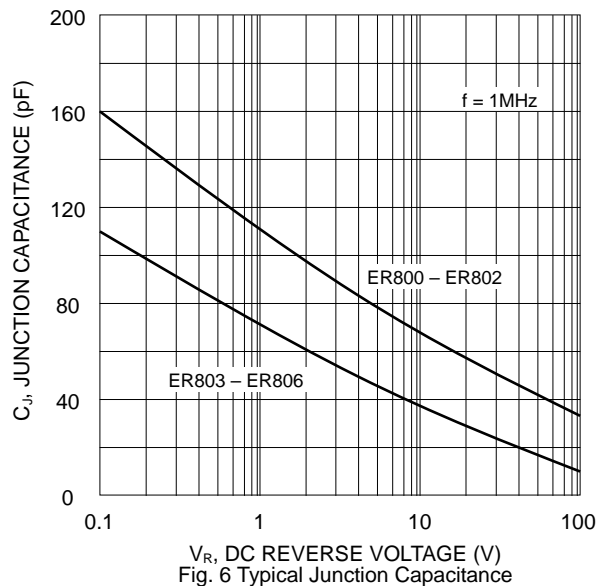
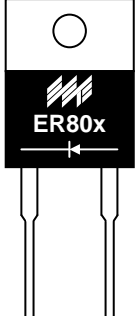


Fig. 6 Typical Junction Capacitance

## MARKING INFORMATION



ER80x = 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

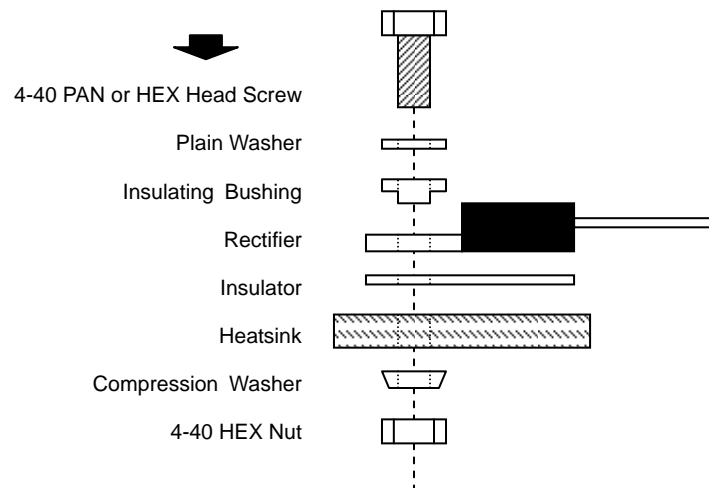
**Note:** 1. Anti-static tube, water clear color.

## RECOMMENDED SCREW MOUNTING ARRANGEMENT

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
ER800	TO-220A	50 Units/Tube
ER801	TO-220A	50 Units/Tube
ER801A	TO-220A	50 Units/Tube
ER802	TO-220A	50 Units/Tube
ER803	TO-220A	50 Units/Tube
ER804	TO-220A	50 Units/Tube
ER806	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, ER800-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.*