

**Pb Free Plating Product**

## HER3001PT thru HER3008PT



30 Ampere Heat Sink Dual Common Cathode High Efficiency Rectifier Diodes

### Features

- \* Fast switching for high efficiency
- \* Low forward voltage drop
- \* High current capability
- \* Low reverse leakage current
- \* High surge current capability

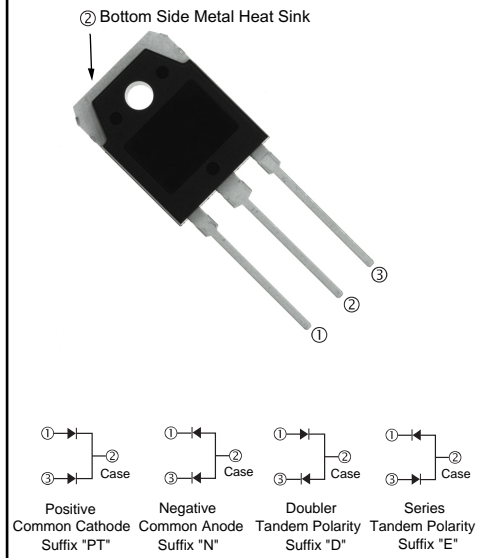
### Application

- \* Automotive Inverters and Solar Inverters
- \* Plating Power Supply, Motor Control, SMPS and UPS
- \* Car Audio Amplifiers and Sound Device Systems

### Mechanical Data

- \* Case: Heatsink TO-3PN open metal package
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solderable per MIL-STD-202 method 208
- \* Polarity: As marked on diode body
- \* Mounting position: Any
- \* Weight: 0.65 gram approximately

### TO-3PN



## 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	HER 3001PT	HER 3002PT	HER 3003PT	HER 3004PT	HER 3005PT	HER 3006PT	HER 3007PT	HER 3008PT	Unit	
Peak Repetitive Reverse Voltage	$V_{RRM}$										
Working Peak Reverse Voltage	$V_{RWM}$	50	100	200	300	400	600	800	1000	V	
DC Blocking Voltage	$V_R$										
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V	
Average Rectified Output Current @ $T_C = 100^\circ\text{C}$	$I_o$	30								A	
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	300								A	
Forward Voltage @ $I_F = 15\text{A}$	$V_{FM}$	1.0			1.3		1.7			V	
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$	$I_{RM}$	10					500				$\mu\text{A}$
Reverse Recovery Time (Note 1)	$t_{rr}$	50					80				nS
Typical Junction Capacitance (Note 2)	$C_j$	175					145				pF
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150								$^\circ\text{C}$	

Note: 1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $IRR = 0.25\text{A}$ . See figure 5.  
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

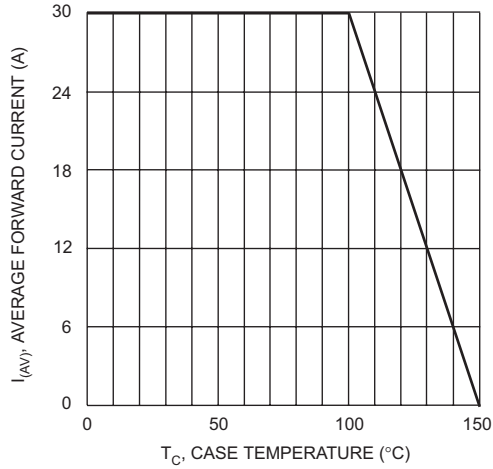


Fig. 1 Forward Current Derating Curve

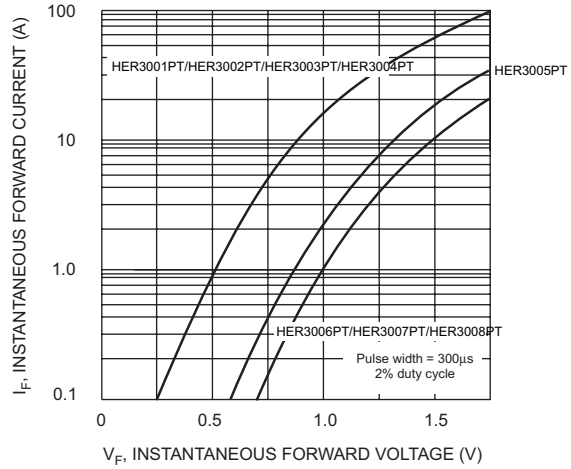


Fig. 2 Typical Forward Characteristics

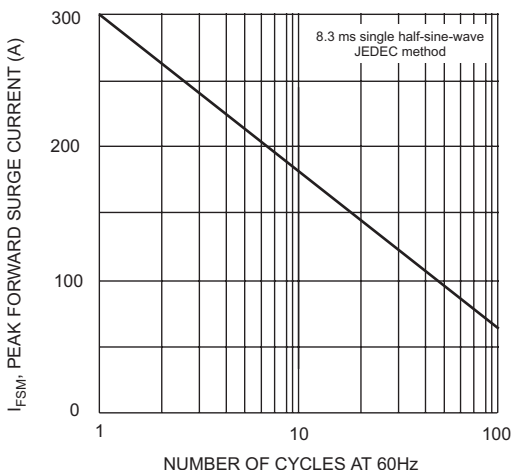


Fig. 3 Maximum Non-Repetitive Surge Current

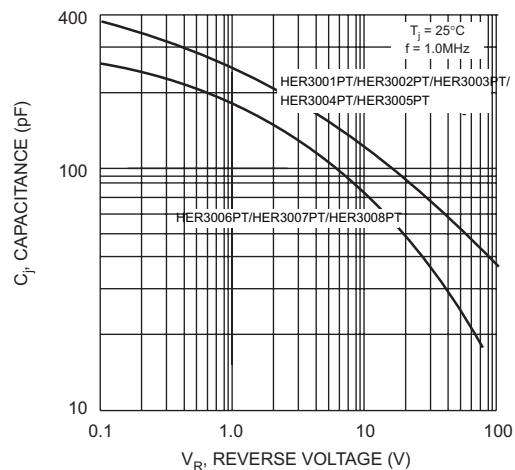
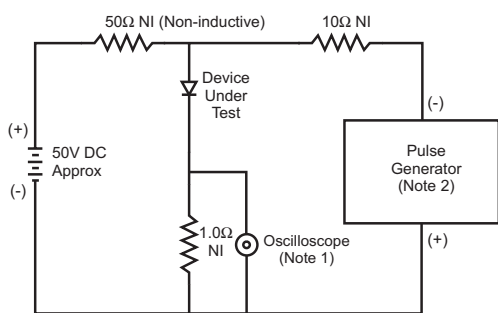
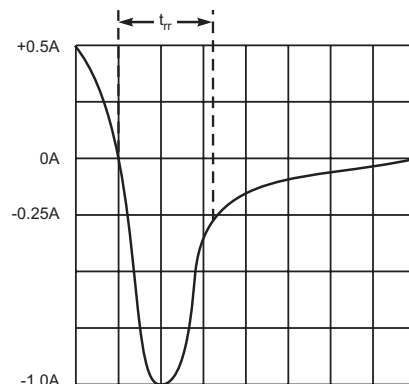


Fig. 4 Typical Junction Capacitance



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

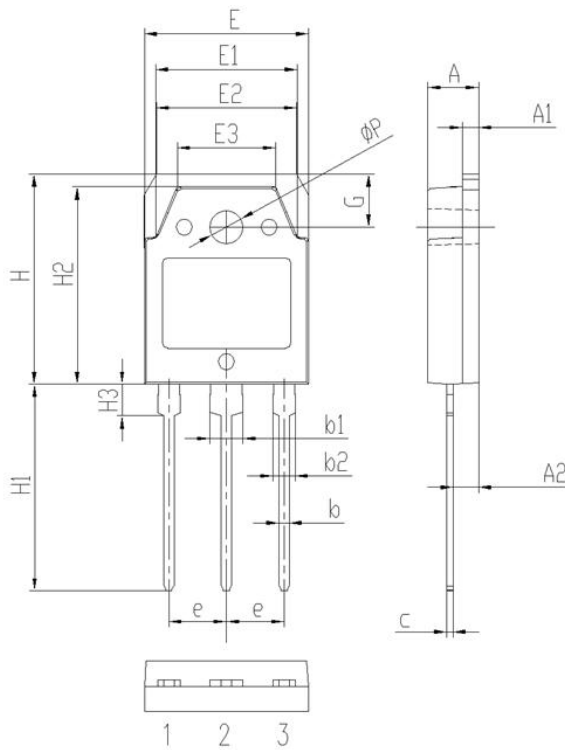


Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

**Package Information**

TO-3PN Package Outline



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.60	5.00
A1	1.50	2.00
A2	2.20	2.60
b	0.80	1.20
b1	2.90	3.30
b2	1.90	2.30
c	0.40	0.80
e	5.25	5.65
E	15.3	15.7
E1	13.2	13.6
E2	13.1	13.5
E3	9.10	9.50
H	19.7	20.1
H1	19.1	20.1
H2	18.3	18.7
H3	2.80	3.20
G	4.80	5.20
ΦP	3.00	3.40