

Pb Free Plating Product

HER3001C thru HER3008C



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

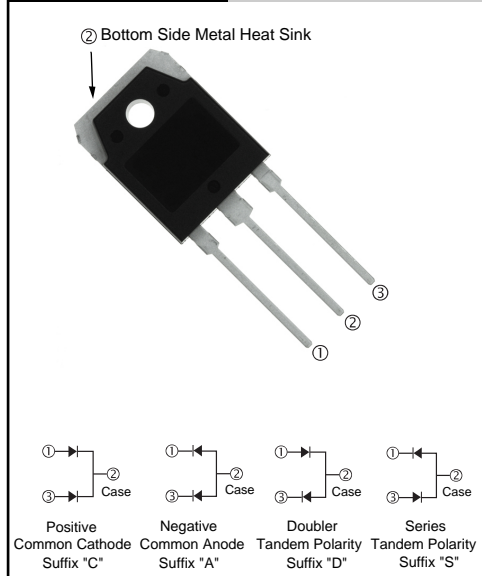
Application

- * 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 3001C | HER 3002C | HER 3003C | HER 3004C | HER 3005C | HER 3006C | HER 3007C | HER 3008C | Unit |
|--|---------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | V |
| 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 | | | | μA |
| 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.

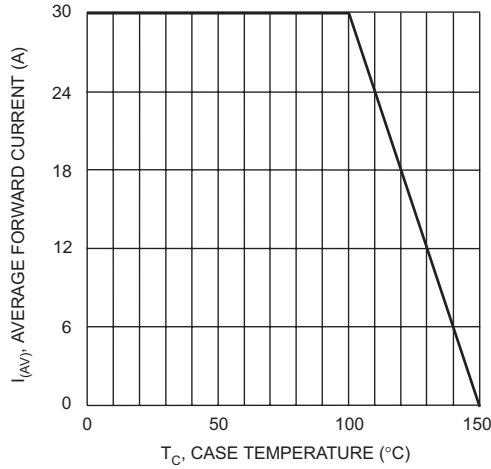


Fig. 1 Forward Current Derating Curve

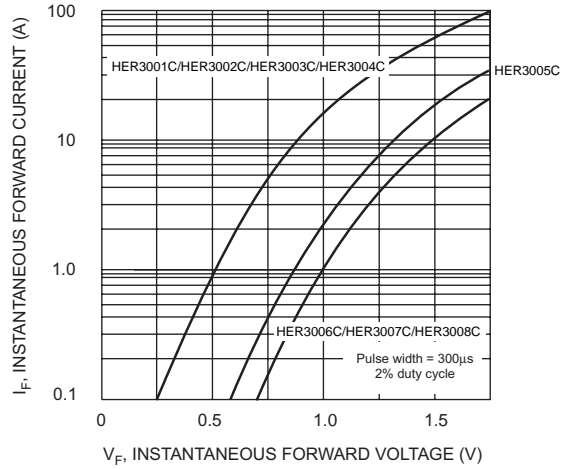


Fig. 2 Typical Forward Characteristics

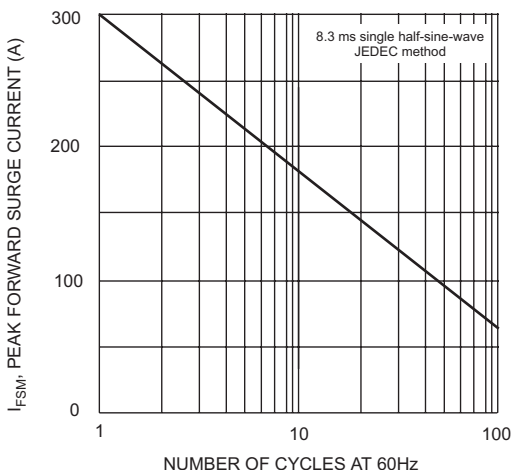


Fig. 3 Maximum Non-Repetitive Surge Current

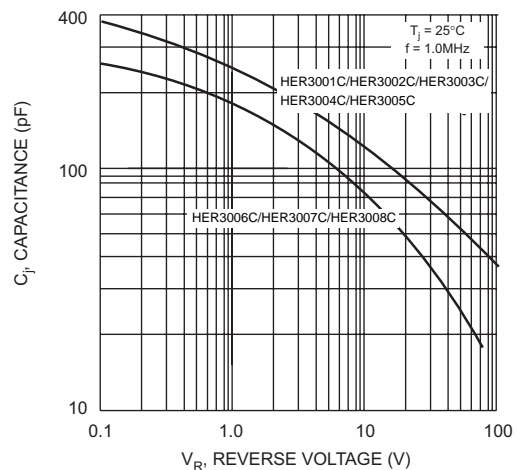
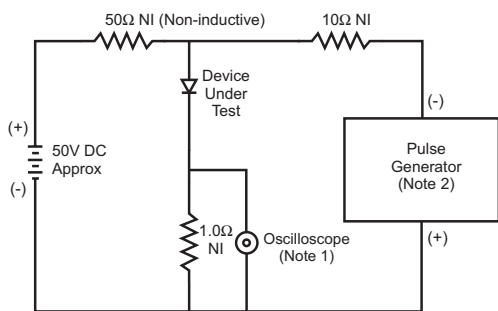
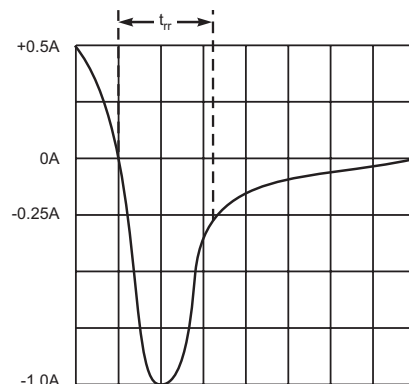


Fig. 4 Typical Junction Capacitance



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

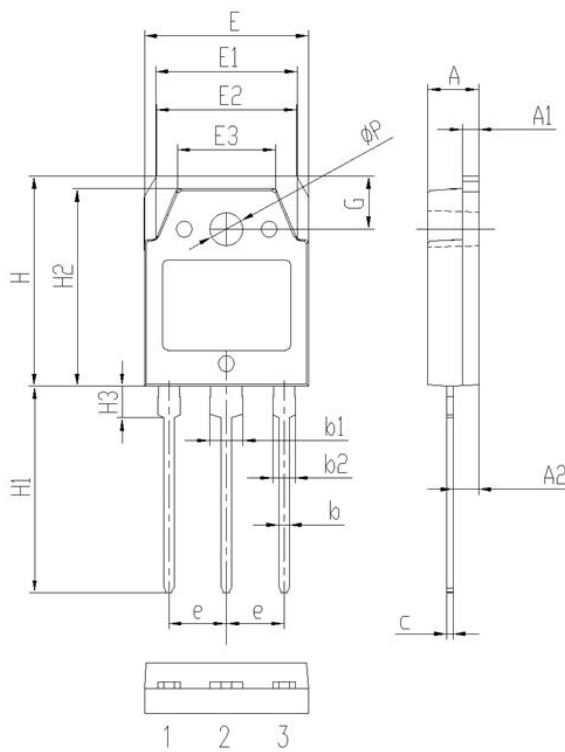
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit



Set time base for 5/10ns/cm

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 |