

HER301 thru HER308

HIGH EFFICIENCY RECTIFIER



**CHENG-YI
ELECTRONIC**



FEATURES

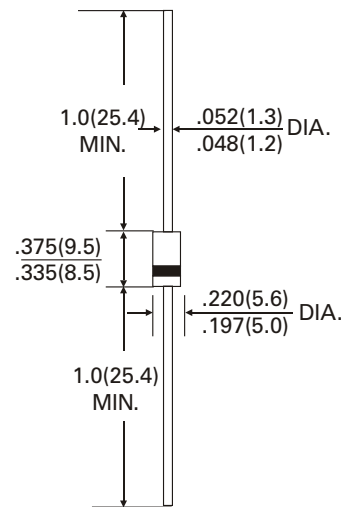
- Low power loss, high efficiency
- Low leakage
- Low forward voltage drop
- High current capability
- High speed switching
- High current surge
- High reliability

MECHANICAL DATA

- Case: Molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: MIL-STD-202E method 208C guaranteed
- Mounting position: Any
- Weight: 1.20 grams

HIGH EFFICIENCY RECTIFIER
VOLTAGE RANGE -50 to 1000 Volts
CURRENT-3.0 Amperese

DO-214AD



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

MAXIMUM RATINGS (At $T_A=25^\circ\text{C}$ unless otherwise noted)

| RATINGS | SYMBOL | HER301 | HER302 | HER303 | HER304 | HER305 | HER306 | HER307 | HER308 | UNITS | |
|---|-----------------|-------------|--------|--------|--------|--------|--------|--------|--------|------------------|------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | Volts | |
| Maximum RMS Voltage | V_{RMS} | 35 | 70 | 140 | 210 | 280 | 420 | 560 | 700 | Volts | |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | Volts | |
| Maximum Average Forward Rectified Current .375" (9.5mm) lead length @ $T_A=50^\circ\text{C}$ | I_o | 3.0 | | | | | | | | Amps | |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 200 | | | | | 150 | | | | Amps |
| Typical Junction Capacitance (Note 2) | C_J | 70 | | | | | 50 | | | | pF |
| Operating and Storage Temperature Range | T_J T_{STG} | -65 to +150 | | | | | | | | $^\circ\text{C}$ | |

ELECTRICAL CHARACTERISTICS (At $T_A=25^\circ\text{C}$ unless otherwise noted)

| CHARACTERISTICS | SYMBOL | HER301 | HER302 | HER303 | HER304 | HER305 | HER306 | HER307 | HER308 | UNITS | |
|--|----------|--------|--------|--------|--------|--------|--------|--------|--------|-------|------------------|
| Maximum Instantaneous Forward Voltage at 3.0A DC | V_F | 1.0 | | | 1.3 | | 1.85 | | | Volts | |
| Maximum DC Reverse Current at Rated DC Blocking Voltage @ $T_A=25^\circ\text{C}$ | I_R | 10 | | | | | | | | | μAmps |
| Maximum Full Load Reverse Current Average, Full Cycle .375, (9.5mm) Lead Length at @ $T_L=55^\circ\text{C}$ | | 150 | | | | | | | | | μAmps |
| Maximum Reverse Recovery Time (Note 1) | t_{rr} | 50 | | | | 70 | | | | nSec | |

Notes : 1. Test Condition: $I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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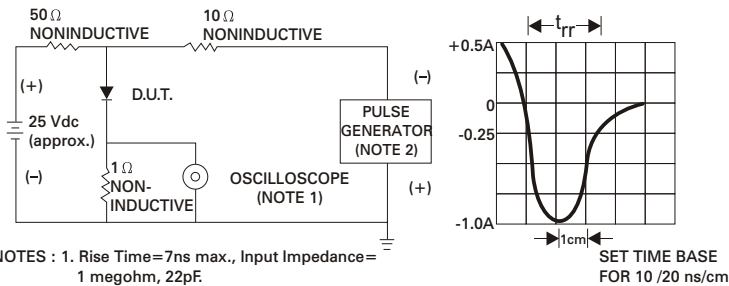
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RATING AND CHARACTERISTICS CURVES HER301 THRU HER308

Fig.1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



- NOTES : 1. Rise Time=7ns max., Input Impedance= 1 megohm, 22pF.
2. Rise Time=10ns max., Source Impedance= 50 ohms.

Fig. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

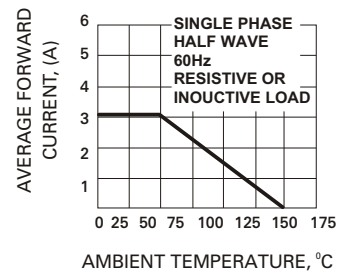


Fig.3 - TYPICAL REVERSE CHARACTERISTICS

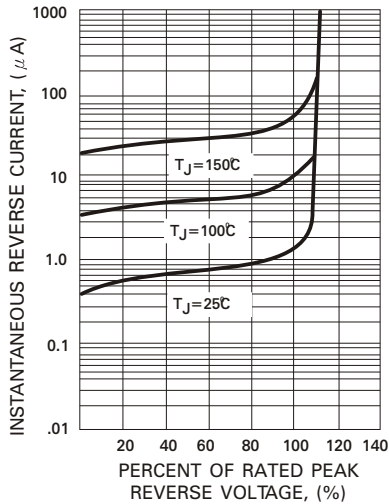


Fig. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

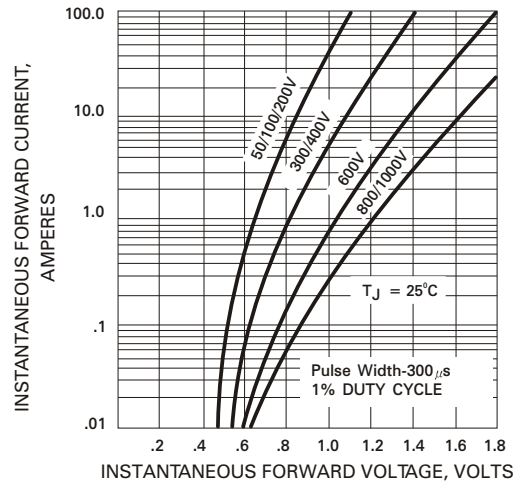


Fig.5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

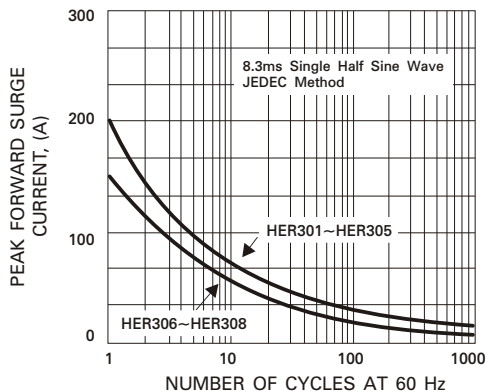


Fig.6 - TYPICAL JUNCTION CAPACITANCE

