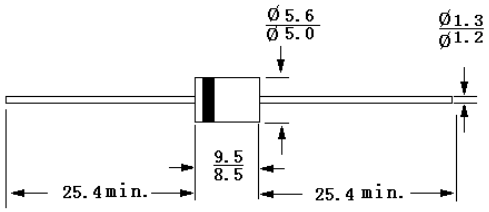
# HER501~HER508

## HIGH EFFICIENCY RECTIFIERS

### Voltage Range – 50 to 1000 Volts
### Current – 5.0 Ampere

DO-201AD




Dimensions in mm

**Features**

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

**Mechanical Data**

- **Case:** DO-201AD, moulded plastic
- **Terminals:** MIL-STD-202E, method 208C guaranteed
- **Polarity:** Colored band denotes cathode end
- **Mounting position:** Any

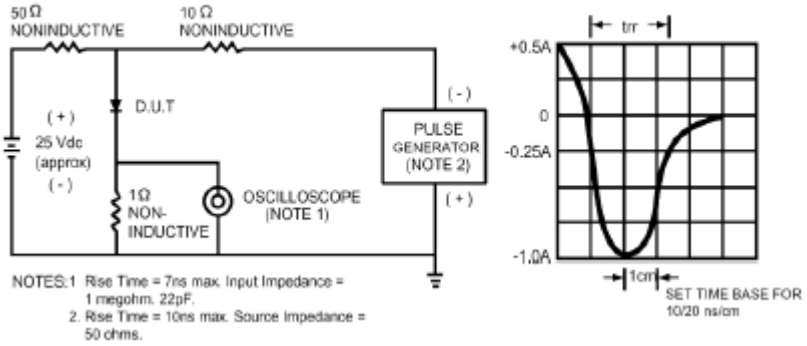
**Absolute Maximum Ratings and Characteristics**

Rating at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load, for capacitive load, derate current by 20%.

| | Symbols | HER 501 | HER 502 | HER 503 | HER 504 | HER 505 | HER 506 | HER 507 | HER 508 | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 140 | 210 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current at $T_A$ = 50 $^{O}$C | $I_{(AV)}$ | 5.0 | | | | | | | | A |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 150 | | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 5.0A | $V_F$ | 1.0 | | | 1.3 | | 1.7 | | | V |
| Maximum Reverse Current at $T_J$ = 25 $^{O}$C<br>at Rated DC Blocking Voltage $T_J$ = 100 $^{O}$C | $I_R$ | 10<br>750 | | | | | | | | uA |
| Maximum Reverse Recovery Time (note1) | $T_{rr}$ | 50 | | | | | 75 | | | nS |
| Typical Junction Capacitance(note2) | $C_J$ | 70 | | | | | 50 | | | pF |
| Typical Thermall Resistance (note3) | $R_{\Theta JA}$ | 20 | | | | | | | | ℃/W |
| Operating Junction Temperature | Tj | -55 to +150 | | | | | | | | ℃ |
| Storage Temperature Range | Ts | -55 to +150 | | | | | | | | ℃ |

Notes: 1.Reverse recovery test conditions: $I_F$ = 0.5A, $I_R$ = -1.0A, Irr = -0.25A
2.Measured at 1.0MHz and applied reverse voltage of 4.0V
3.Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length P.C.B. mounted.

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

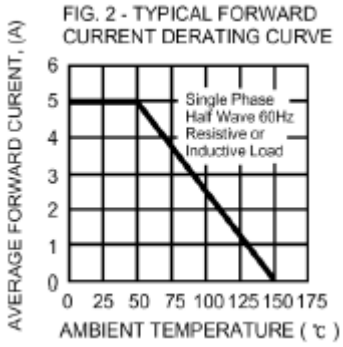



FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

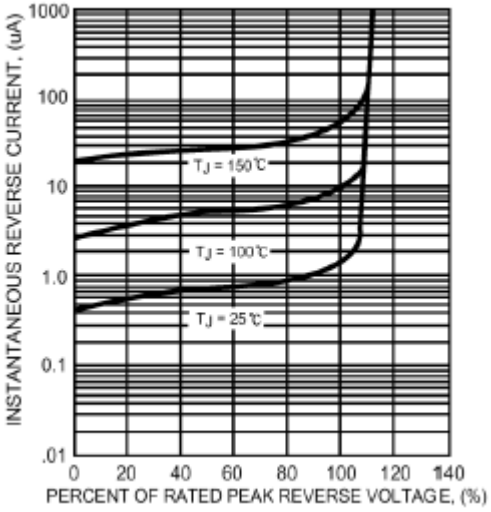



FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

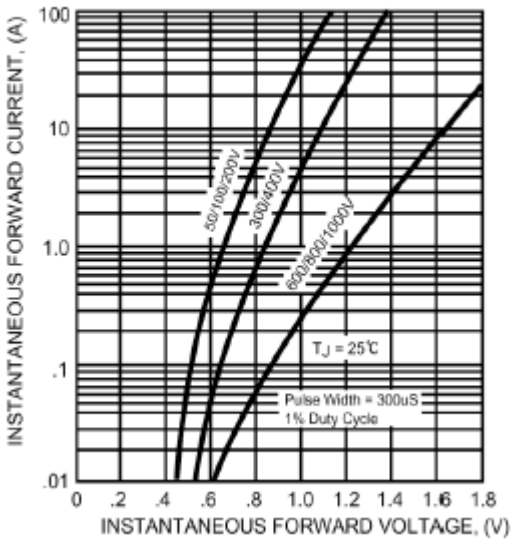



FIG. 5 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

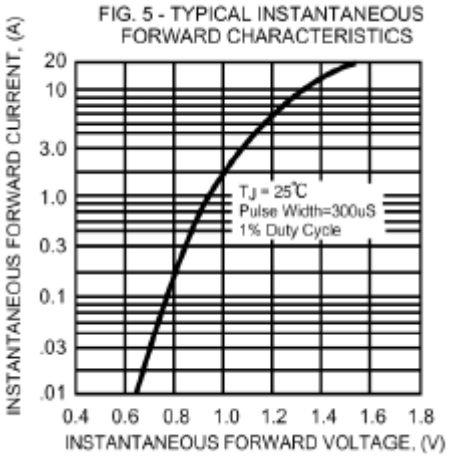



FIG. 6 - TYPICAL JUNCTION CAPACITANCE