

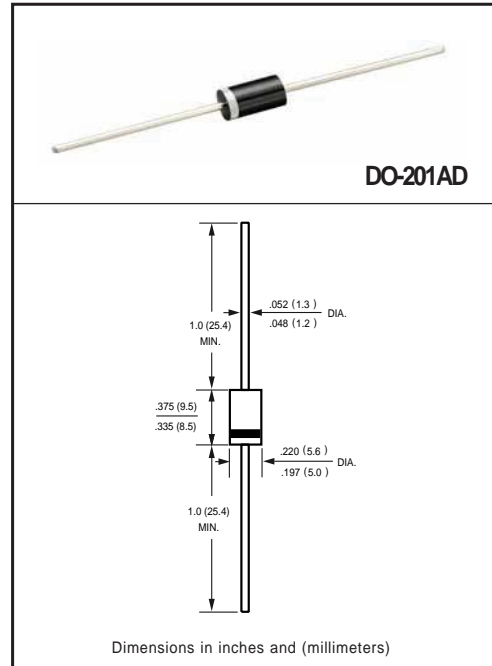
**HIGH EFFICIENCY SILICON RECTIFIER**  
VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Amperes

**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**

- \* Epoxy: Device has UL flammability classification 94V-O
- \* Case: Molded plastic
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 1.20 grams



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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

**MAXIMUM RATINGS (@ TA=25 °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 at $T_A = 50^\circ\text{C}$                             | $I_O$     | 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 Thermal Resistance (Note 1)                                                               | $R_{qJL}$ | 8.5          |        |        |        |        |        |        |        | $^\circ\text{C}/\text{W}$ |
|                                                                                                   | $R_{qJA}$ | 20           |        |        |        |        |        |        |        |                           |
| Typical Junction Capacitance (Note 2)                                                             | $C_J$     | 70           |        |        |        | 50     |        |        |        | pF                        |
| Operating Temperature Range                                                                       | $T_J$     | 150          |        |        |        |        |        |        |        | $^\circ\text{C}$          |
| Storage Temperature Range                                                                         | $T_{STG}$ | -55 to + 150 |        |        |        |        |        |        |        | $^\circ\text{C}$          |

**ELECTRICAL CHARACTERISTICS (@TA=25 °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    |        | 1.7    |        |        | Volts |
| Maximum Average Reverse Current at Rated DC Blocking Voltage | $I_R$    | @ $T_A = 25^\circ\text{C}$  |        |        |        | 5      |        |        |        | mA    |
|                                                              |          | @ $T_A = 125^\circ\text{C}$ |        |        |        | 150    |        |        |        | mA    |
| Maximum Reverse Recovery Time (Note 4)                       | $t_{rr}$ | 50                          |        |        |        | 75     |        |        |        | nSec  |

- NOTES : 1. Thermal Resistance : Mounted on PCB.  
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
3. "Fully ROHS compliant", "100% Sn plating (Pb-free)".  
4. Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{RR} = -0.25\text{A}$ .

## RATING AND CHARACTERISTICS CURVES ( HER301 THRU HER308 )

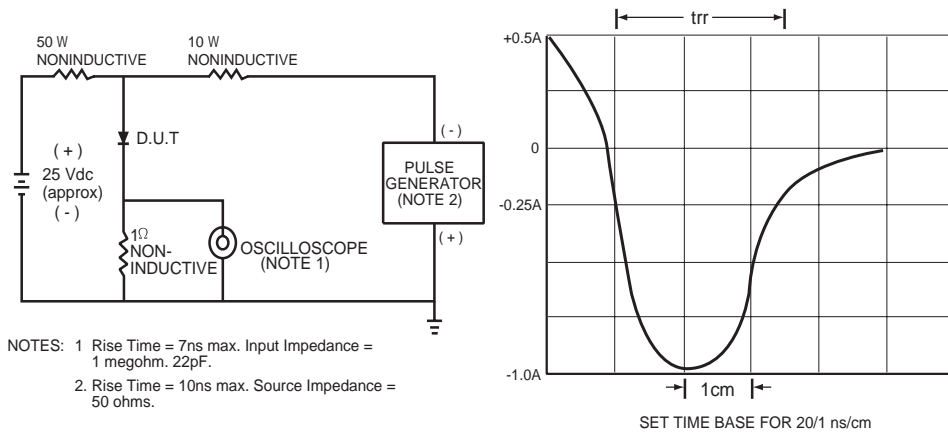


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

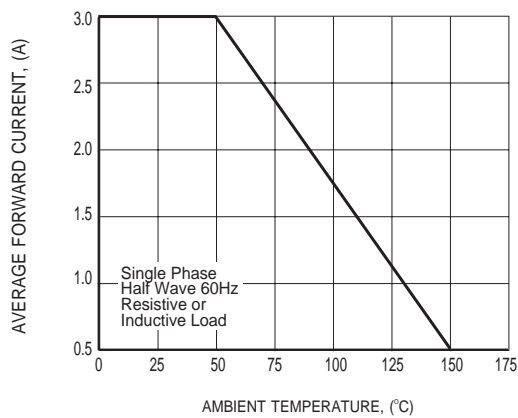


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

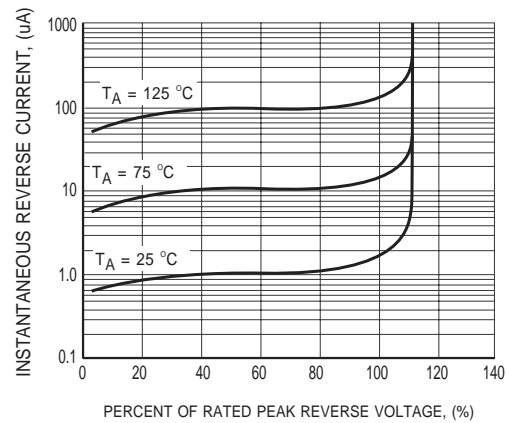


FIG.3 TYPICAL REVERSE CHARACTERISTICS

## RATING AND CHARACTERISTICS CURVES ( HER301 THRU HER308 )

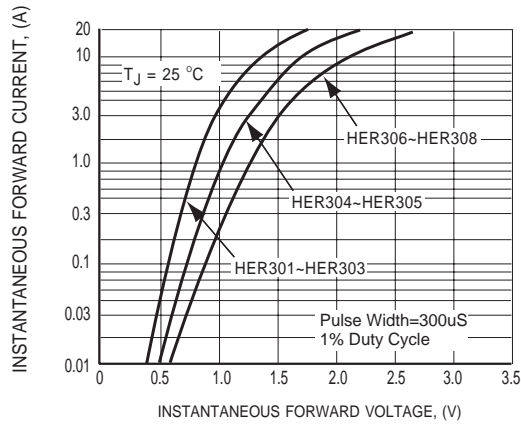


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

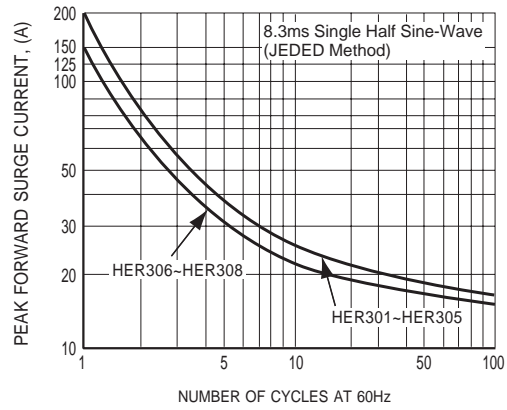


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

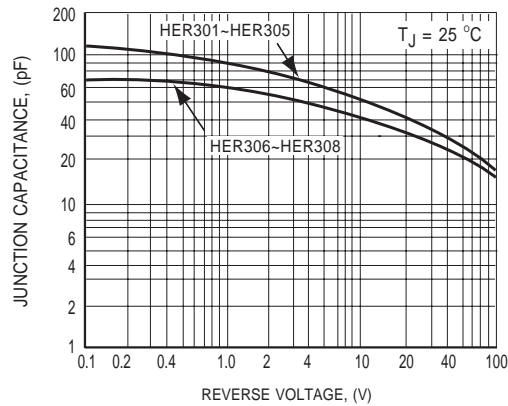


FIG.6 TYPICAL JUNCTION CAPACITANCE

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