

**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**

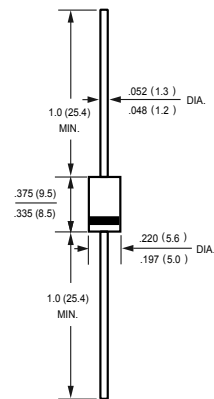
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Case: Molded plastic
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 1.20 grams

**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%.



**DO-201AD**



Dimensions in inches and (millimeters)

**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 <sub>RRM</sub> | 50           | 100    | 200    | 300    | 400    | 600    | 800    | 1000   | Volts |
| Maximum RMS Voltage                                                                               | V <sub>RMS</sub> | 35           | 70     | 140    | 210    | 280    | 420    | 560    | 700    | Volts |
| Maximum DC Blocking Voltage                                                                       | V <sub>DC</sub>  | 50           | 100    | 200    | 300    | 400    | 600    | 800    | 1000   | Volts |
| Maximum Average Forward Rectified Current at T <sub>A</sub> = 50°C                                | I <sub>O</sub>   | 3.0          |        |        |        |        |        |        |        | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub> | 200          |        |        |        |        | 150    |        |        | Amps  |
| Typical Thermal Resistance (Note 1)                                                               | R <sub>θJL</sub> | 8.5          |        |        |        |        |        |        |        | °C/W  |
|                                                                                                   | R <sub>θJA</sub> | 20           |        |        |        |        |        |        |        |       |
| Typical Junction Capacitance (Note 2)                                                             | C <sub>J</sub>   | 70           |        |        |        |        | 50     |        |        | pF    |
| Operating Temperature Range                                                                       | T <sub>J</sub>   | 150          |        |        |        |        |        |        |        | °C    |
| Storage Temperature Range                                                                         | T <sub>STG</sub> | -55 to + 150 |        |        |        |        |        |        |        | °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 <sub>F</sub> | 1.0    |        |        | 1.3    |        | 1.7    |        |        | Volts |
| Maximum Average Reverse Current<br>at Rated DC Blocking Voltage | @T <sub>A</sub> = 25°C  | I <sub>R</sub> | 5      |        |        |        |        |        |        |        | μA    |
|                                                                 | @T <sub>A</sub> = 125°C |                | 150    |        |        |        |        |        |        |        | μA    |
| Maximum Reverse Recovery Time (Note 4)                          |                         | trr            | 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:  $I_F = 0.5A$ ,  $I_R = -1.0A$ ,  $I_{RR} = -0.25A$ .

## RATING AND CHARACTERISTICS CURVES ( HER301 THRU HER308 )

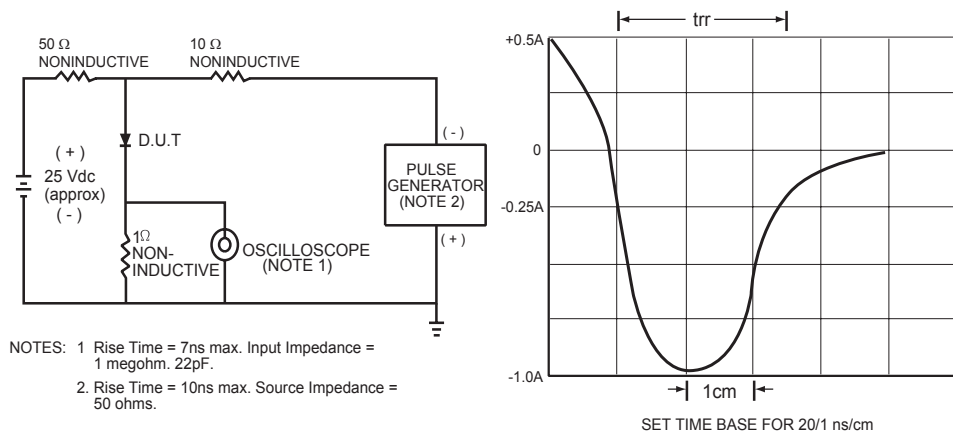


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

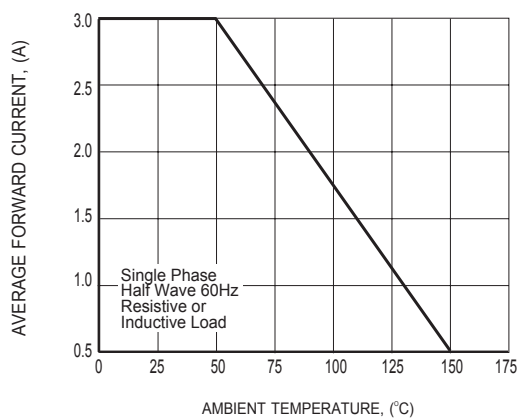


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

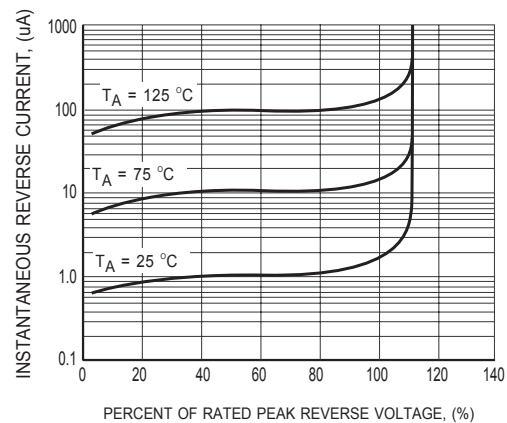
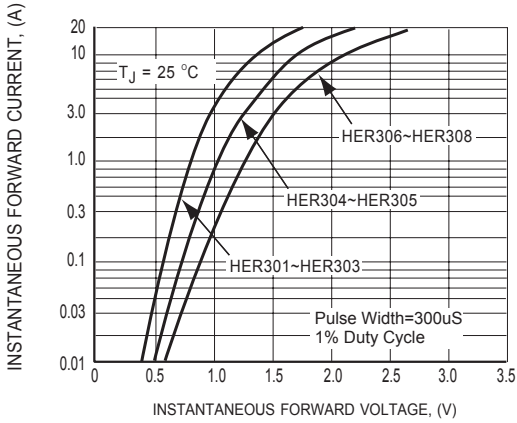
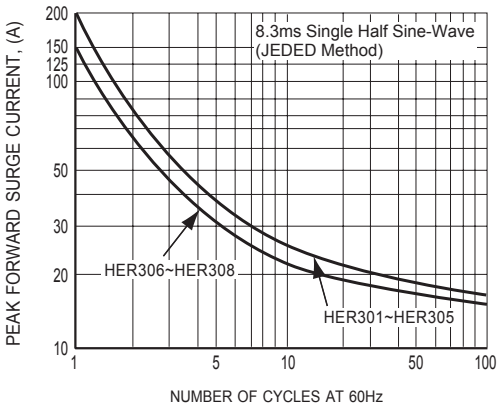


FIG.3 TYPICAL REVERSE CHARACTERISTICS

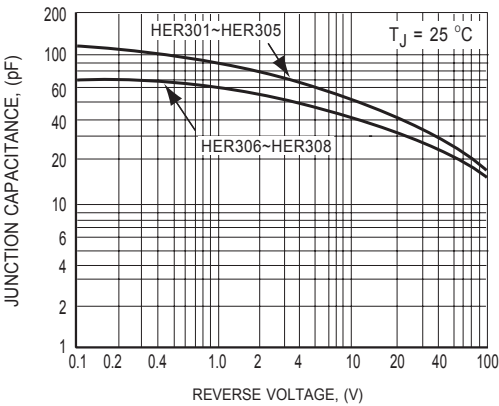
**RATING AND CHARACTERISTICS CURVES ( HER301 THRU HER308 )**



**FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.6 TYPICAL JUNCTION CAPACITANCE**

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