



## HIGH EFFICIENCY RECTIFIER

### HER501 THRU HER507

VOLTAGE RANGE  
CURRENT

50 to 800 Volts  
5.0Ampere

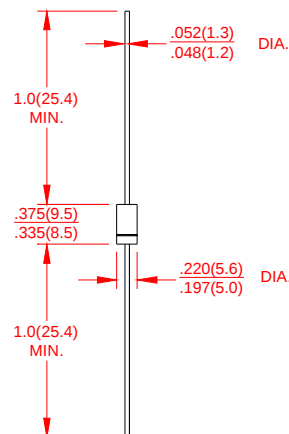
DO-27

#### FEATURES

- Low coat construction
- Fast switching for high efficiency.
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 secods/.375"(9.5mm)lead length at 5 lbs(2.3kg) tension

#### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-O rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.042ounce, 1.19 grams



Dimensions in inches and (millimeters)

#### 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%

|                                                                                                          | SYMBOLS                          | HER 501        | HER 502 | HER 503 | HER 504 | HER 505 | HER 506 | HER 507 | UNITS |
|----------------------------------------------------------------------------------------------------------|----------------------------------|----------------|---------|---------|---------|---------|---------|---------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                                  | V <sub>RRM</sub>                 | 50             | 100     | 200     | 300     | 400     | 600     | 800     | Volts |
| Maximum RMS Voltage                                                                                      | V <sub>RMS</sub>                 | 35             | 70      | 140     | 210     | 280     | 420     | 560     | Volts |
| Maximum DC Blocking Voltage                                                                              | V <sub>DC</sub>                  | 50             | 100     | 200     | 300     | 400     | 600     | 800     | Volts |
| Maximum Average Forward Rectified Current<br>0.375”(9.5mm) lead length at T <sub>A</sub> = 50℃           | I <sub>(AV)</sub>                | 5.0            |         |         |         |         |         |         | Amp   |
| Peak Forward Surge Current<br>8.3mS single half sine wave superimposed on<br>rated load (JEDEC method)   | I <sub>FSM</sub>                 | 200            |         |         |         |         | 150     |         | Amps  |
| Maximum Instantaneous Forward Voltage @ 3.0A                                                             | V <sub>F</sub>                   | 1.0            |         |         | 1.3     |         | 1.5     | 1.7     | Volts |
| Maximum DC Reverse Current at Rated<br>DC Blocking Voltage                                               | T <sub>A</sub> = 25℃             | I <sub>R</sub> | 10      |         |         |         |         |         | μA    |
|                                                                                                          | T <sub>A</sub> = 125℃            |                | 500     |         |         |         |         |         |       |
| Maximum Full Load Recovery Current,full cycle<br>average 0.375”(9.5mm)lead length at T <sub>L</sub> =55℃ | IR <sub>(AV)</sub>               | 150            |         |         |         |         |         |         | μA    |
| Maximum Reverse Recovery Time(NOTE 1)                                                                    | t <sub>tr</sub>                  | 70             |         |         |         |         | 100     |         | ns    |
| Typical Thermal Resistance (NOTE 2)                                                                      | C <sub>J</sub>                   | 70             |         |         |         |         | 50      |         | PF    |
| Typical Thermal Resistance(NOTE 3)                                                                       | R <sub>θJA</sub>                 | 20             |         |         |         |         |         |         | ℃/W   |
| Operating Junction Temperature Range                                                                     | T <sub>J</sub> ,T <sub>STG</sub> | (-55 to +150)  |         |         |         |         |         |         | ℃     |

#### Notes:

- 1 Test Condition:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$
2. Measured at 1.0 MHz and applied reverse of 4.0 V
- 3 Thermal resistance from junction to ambient with .375"(9.5mm)lead length, P.C.B. mounted. .



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## RATING AND CHARACTERISTIC CURVES HER501 THRU HER507

FIG.1-TYPICAL FORWARD CURRENT  
DERATING CURVE

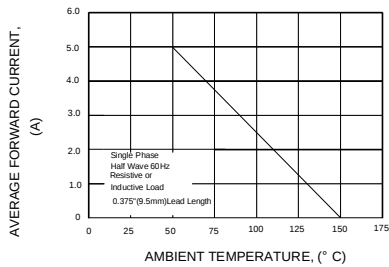


FIG.2-MAXIMUM NON-REPETITIVE PEAK  
FORWARD SURGE CURRENT

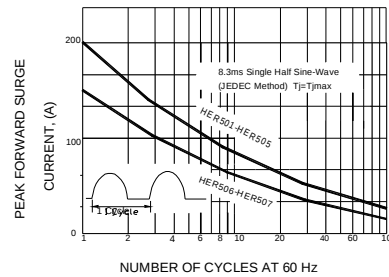


FIG.3-TYPICAL INSTANTANEOUS  
FORWARD CHARACTERISTICS

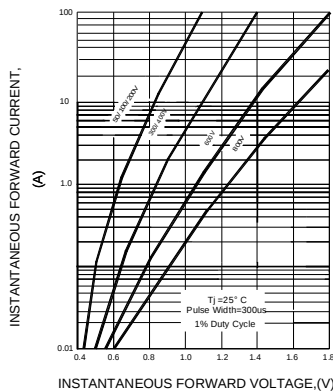


FIG.4-TYPICAL REVERSE  
CHARACTERISTICS

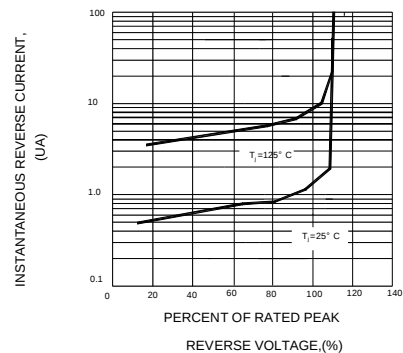


FIG.5-TYPICAL JUNCTION CAPACITANCE

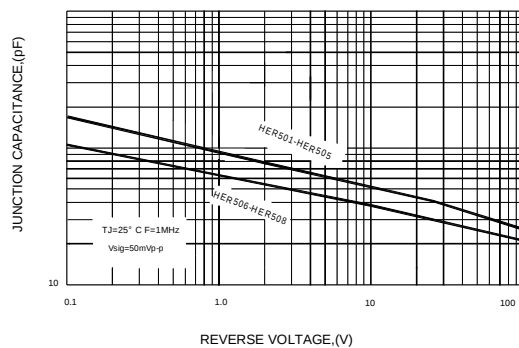


FIG.6-TEST CIRCUIT DIAGRAM AND  
REVERSE RECOVERY TIME CHARACTERISTIC

