

# HER301 -HER308

## 3.0 AMPS. High Efficient Rectifiers

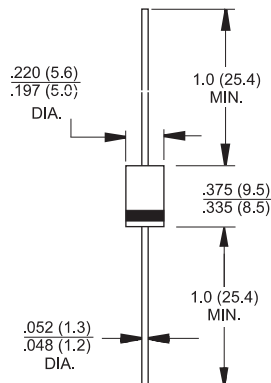
### DO-201AD

## Features

- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application.

## Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V0 rate flame retardant
- ✧ Lead: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds/.375" (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 1.2grams



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating 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%

| Type Number                                                                                             | Symbol            | HER 301     | HER 302 | HER 303 | HER 304 | HER 305 | HER 306 | HER 307 | HER 308 | Units    |
|---------------------------------------------------------------------------------------------------------|-------------------|-------------|---------|---------|---------|---------|---------|---------|---------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                  | V <sub>RRM</sub>  | 50          | 100     | 200     | 300     | 400     | 600     | 800     | 1000    | V        |
| Maximum RMS Voltage                                                                                     | V <sub>RMS</sub>  | 35          | 70      | 140     | 210     | 280     | 420     | 560     | 700     | V        |
| Maximum DC Blocking Voltage                                                                             | V <sub>DC</sub>   | 50          | 100     | 200     | 300     | 400     | 600     | 800     | 1000    | V        |
| Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T <sub>A</sub> = 55 °C              | I <sub>(AV)</sub> | 3.0         |         |         |         |         |         |         |         | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )     | I <sub>FSM</sub>  | 150         |         |         |         |         |         |         |         | A        |
| Maximum Instantaneous Forward Voltage @ 3.0A                                                            | V <sub>F</sub>    | 1.0         |         |         |         | 1.3     | 1.7     |         |         | V        |
| Maximum DC Reverse Current @T <sub>A</sub> =25 °C at Rated DC Blocking Voltage @ T <sub>A</sub> =125 °C | I <sub>R</sub>    | 10<br>250   |         |         |         |         |         |         |         | uA<br>uA |
| Maximum Reverse Recovery Time (Note 1)                                                                  | T <sub>rr</sub>   | 50          |         |         |         |         | 75      |         |         | nS       |
| Typical Junction capacitance (Note 2)                                                                   | C <sub>j</sub>    | 70          |         |         |         |         | 50      |         |         | pF       |
| Typical Thermal Resistance                                                                              | R <sub>θJA</sub>  | 40          |         |         |         |         |         |         |         | °C/W     |
| Operating Temperature Range                                                                             | T <sub>J</sub>    | -65 to +150 |         |         |         |         |         |         |         | °C       |
| Storage Temperature Range                                                                               | T <sub>STG</sub>  | -65 to +150 |         |         |         |         |         |         |         | °C       |

- Notes:
1. Reverse Recovery Test Conditions:  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{RR} = 0.25A$
  2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
  3. Mount on Cu-Pad Size 16mm x 16mm on PCB.

## RATINGS AND CHARACTERISTIC CURVES (HER301 THRU HER308)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

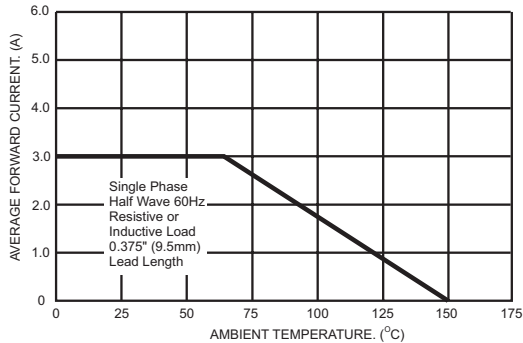


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

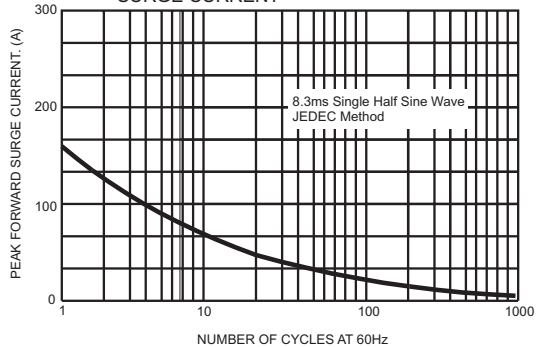


FIG.4- TYPICAL JUNCTION CAPACITANCE

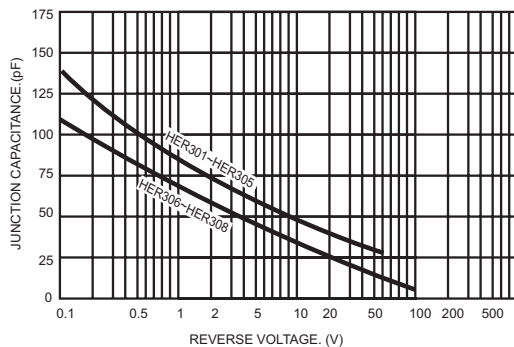


FIG.2- TYPICAL REVERSE CHARACTERISTICS

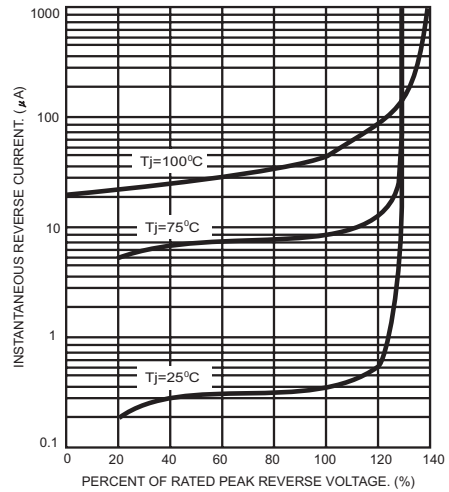


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

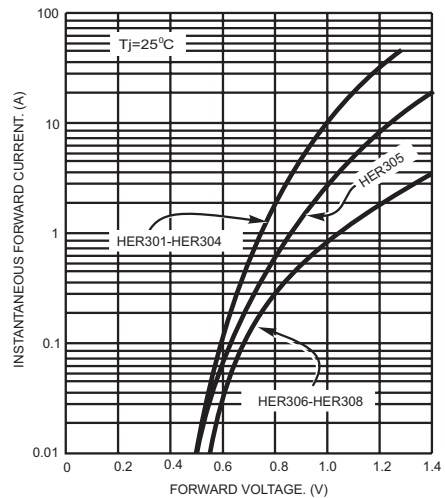


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

