

### HIGH EFFICIENCY RECTIFIERS

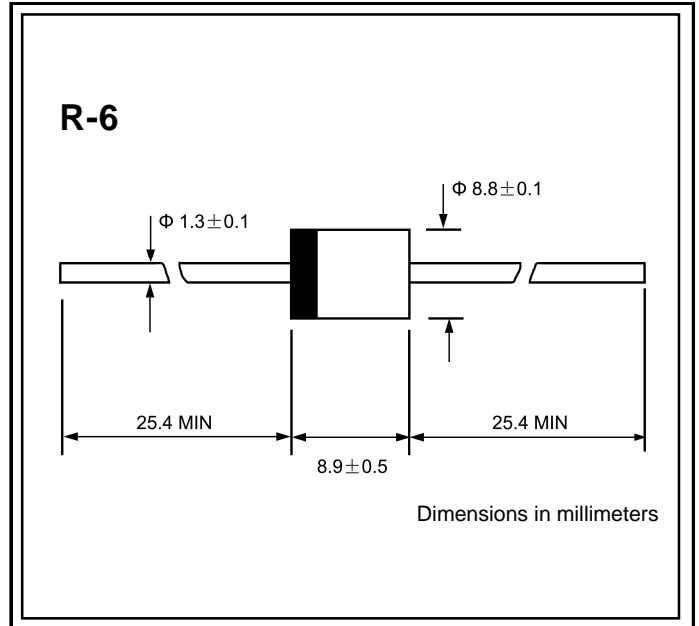
VOLTAGE RANGE: 50 --- 1000 V  
CURRENT: 6.0 A

#### FEATURES

- ◇ Low cost
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with alcohol, Isopropanol and similar solvents
- ◇ The plastic material carries U/L recognition 94V-0

#### MECHANICAL DATA

- ◇ Case: JEDEC R-6, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.072 ounces, 2.04 grams
- ◇ Mounting position: Any



#### 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 by 20%.

|  |                 | HER 601         | HER 602 | HER 603 | HER 604 | HER 605 | HER 605P | HER 606 | HER 607 | HER 608 | UNITS        |
|--|-----------------|-----------------|---------|---------|---------|---------|----------|---------|---------|---------|--------------|
| Maximum recurrent peak reverse voltage   | $V_{RRM}$       | 50              | 100     | 200     | 300     | 400     | 400      | 600     | 800     | 1000    | V            |
| Maximum RMS voltage  | $V_{RMS}$       | 35              | 70      | 140     | 210     | 280     | 280      | 420     | 560     | 700     | V            |
| Maximum DC blocking voltage  | $V_{DC}$        | 50              | 100     | 200     | 300     | 400     | 400      | 600     | 800     | 1000    | V            |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ C$             | $I_{F(AV)}$     | 6.0             |         |         |         |         |          |         |         |         | A            |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load        | $I_{FSM}$       | 200             |         |         |         |         |          |         |         |         | A            |
| Maximum instantaneous forward voltage<br>@ 6.0A  | $V_F$           | 1.0             |         | 1.3     |         | 1.0     |          | 1.7     |         |         | V            |
| Maximum reverse current @ $T_A=25^\circ C$<br>at rated DC blocking voltage @ $T_A=100^\circ C$ | $I_R$           | 10.0<br>200.0   |         |         |         |         |          |         |         |         | $\mu A$      |
| Maximum reverse recovery time (Note1)  | $t_{rr}$        | 50              |         |         |         |         |          | 75      |         |         | ns           |
| Typical junction capacitance (Note2)   | $C_J$           | 100             |         |         |         |         |          | 65      |         |         | pF           |
| Typical thermal resistance (Note3)   | $R_{\theta JA}$ | 12              |         |         |         |         |          |         |         |         | $^\circ C/W$ |
| Operating junction temperature range   | $T_J$           | - 55 ---- + 125 |         |         |         |         |          |         |         |         | $^\circ C$   |
| Storage temperature range  | $T_{STG}$       | - 55 ---- + 150 |         |         |         |         |          |         |         |         | $^\circ C$   |

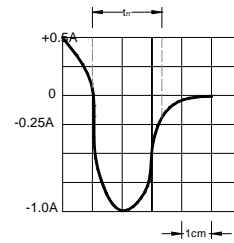
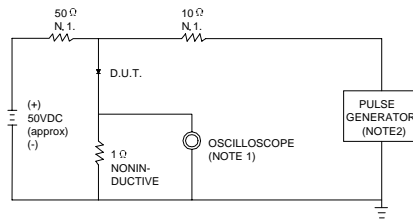
NOTE: 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $I_r=0.25A$ .

2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance junction to ambient.

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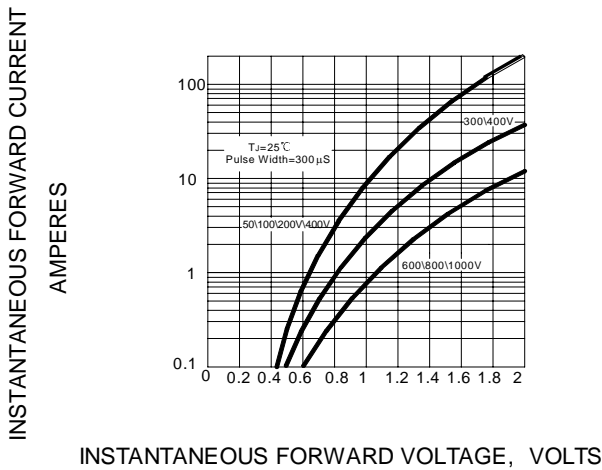
**FIG.1 -- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



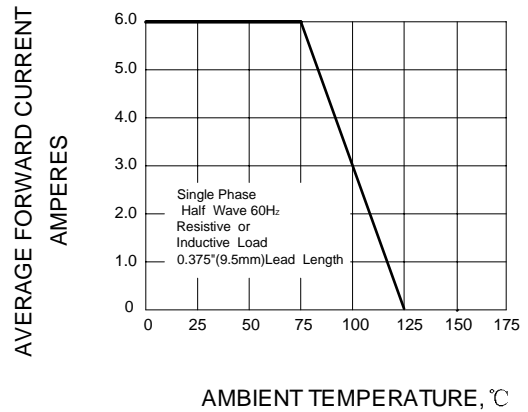
NOTES:1.RISE TIME = 7ns MAX.INPUT IMPEDANCE = 1MΩ.22pF.  
2.RISE TIME =10ns MAX.SOURCE IMPEDANCE=50 Ω.

SET TIME BASE FOR 10/20 ns/cm

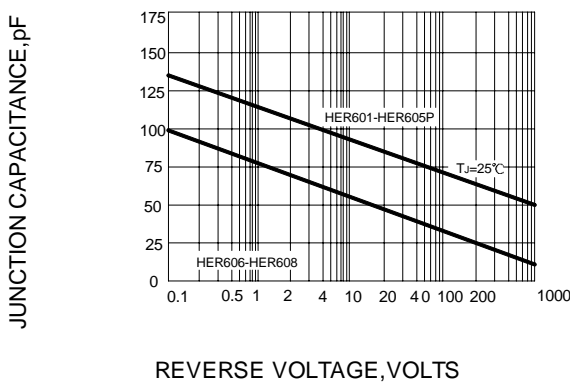
**FIG.2 -- TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 -- FORWARD DERATING CURVE**



**FIG.4 -- TYPICAL JUNCTION CAPACITANCE**



**FIG.5 -- PEAK FORWARD SURGE CURRENT**

