

### SUPER FAST RECTIFIERS

VOLTAGE RANGE: 100 --- 600 V  
CURRENT: 3.0 A

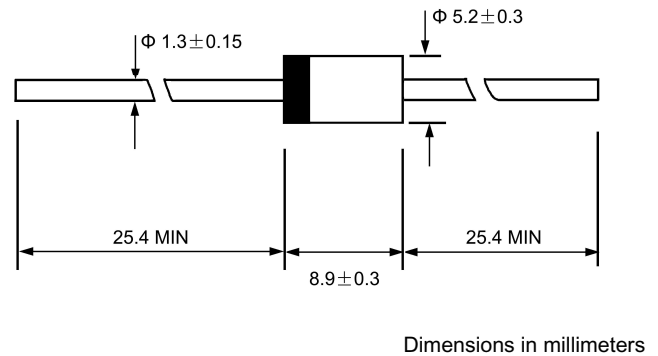
#### FEATURES

- ◇ 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 DO-27, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.041 ounces, 1.15 grams
- ◇ Mounting position: Any

#### DO - 27



#### 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%.

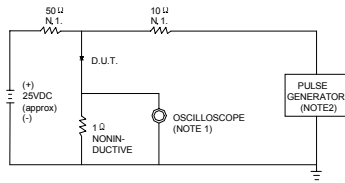
|   |                 | ER301            | ER302 | ER303 | ER304 | ER306 | UNITS        |
|---|-----------------|------------------|-------|-------|-------|-------|--------------|
| Maximum recurrent peak reverse voltage  | $V_{RRM}$       | 100              | 200   | 300   | 400   | 600   | V            |
| Maximum RMS voltage   | $V_{RMS}$       | 70               | 140   | 210   | 280   | 420   | V            |
| Maximum DC blocking voltage   | $V_{DC}$        | 100              | 200   | 300   | 400   | 600   | V            |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ C$                          | $I_{F(AV)}$     | 3.0              |       |       |       |       | A            |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ C$ | $I_{FSM}$       | 150.0            |       |       |       |       | A            |
| Maximum instantaneous forward voltage<br>@ 3.0A   | $V_F$           | 0.95             | 1.25  |       | 1.7   |       | V            |
| Maximum reverse current @ $T_A=25^\circ C$<br>at rated DC blocking voltage @ $T_A=100^\circ C$              | $I_R$           | 5.0<br>300.0     |       |       |       |       | $\mu A$      |
| Maximum reverse recovery time (Note 1)  | $t_{rr}$        | 35               |       |       |       |       | ns           |
| Typical junction capacitance (Note 2)   | $C_J$           | 95               |       |       |       |       | pF           |
| Typical thermal resistance (Note 3)   | $R_{\theta JA}$ | 20               |       |       |       |       | $^\circ C/W$ |
| Operating junction temperature range  | $T_J$           | - 55 ----- + 150 |       |       |       |       | $^\circ C$   |
| Storage temperature range   | $T_{STG}$       | - 55 ----- + 150 |       |       |       |       | $^\circ C$   |

NOTE: 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $t_{rr}=0.25A$ .

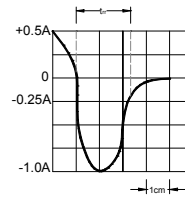
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance junction to ambient.

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

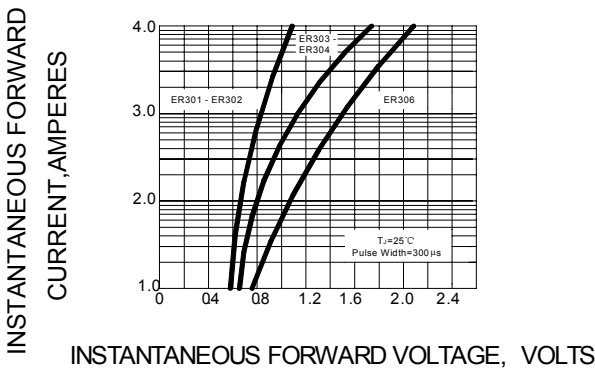


NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ. 22pF.  
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.

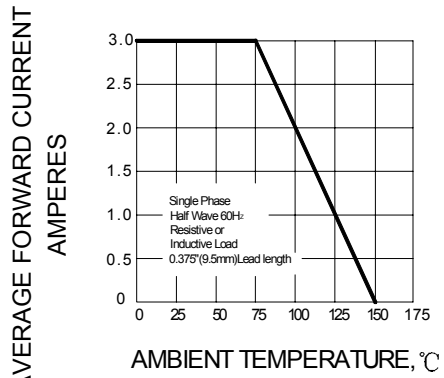


SET TIME BASE FOR 10 ns/cm

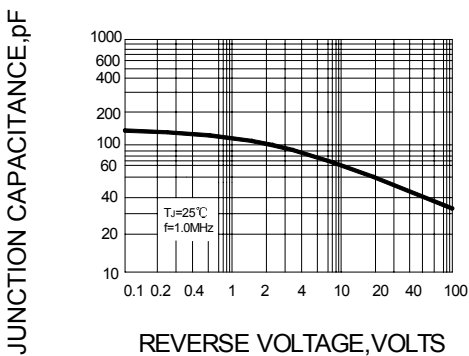
**FIG.2 – TYPICAL FORWARD CHARACTERISTIC**



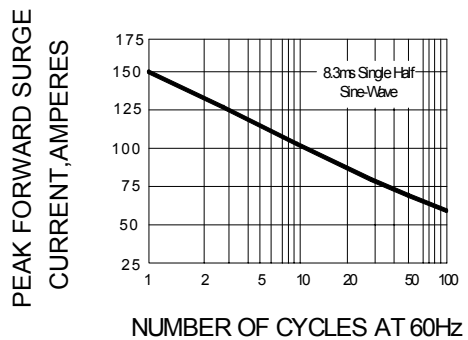
**FIG.3 – FORWARD DERATING CURVE**



**FIG.4 – TYPICAL JUNCTION CAPACITANCE**



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



**FIG.6 – TYPICAL REVERSE CHARACTERISTICS**

