

### FAST RECOVERY RECTIFIER

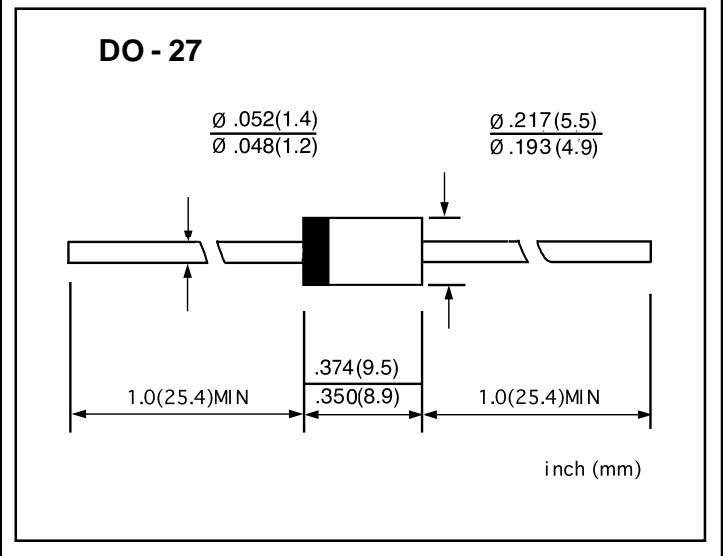
VOLTAGE RANGE: 100 --- 1000 V  
CURRENT: 5.0 A

#### FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with Freon,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



#### 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%.

|   |                 | BY500<br>-100  | BY500<br>-200 | BY500<br>-400 | BY500<br>-600 | BY500<br>-800 | BY500<br>-1000 | UNITS        |
|---|-----------------|----------------|---------------|---------------|---------------|---------------|----------------|--------------|
| Maximum recurrent peak reverse voltage  | $V_{RRM}$       | 100            | 200           | 400           | 600           | 800           | 1000           | V            |
| Maximum RMS voltage   | $V_{RMS}$       | 70             | 140           | 280           | 420           | 560           | 700            | V            |
| Maximum DC blocking voltage   | $V_{DC}$        | 100            | 200           | 400           | 600           | 800           | 1000           | V            |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ C$                          | $I_{F(AV)}$     | 5.0            |               |               |               |               |                | A            |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ C$ | $I_{FSM}$       | 200.0          |               |               |               |               |                | A            |
| Maximum instantaneous forward voltage<br>@ 5.0 A  | $V_F$           | 1.3            |               |               |               |               |                | 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>1000.0 |               |               |               |               |                | $\mu A$      |
| Maximum reverse recovery time (Note1)   | $t_{rr}$        | 200            |               |               |               |               |                | ns           |
| Typical junction capacitance (Note2)  | $C_J$           | 55             |               |               |               |               |                | pF           |
| Typical thermal resistance (Note3)  | $R_{\theta JA}$ | 15             |               |               |               |               |                | $^\circ C/W$ |
| Operating junction temperature range  | $T_J$           | -55---- + 150  |               |               |               |               |                | $^\circ C$   |
| Storage temperature range   | $T_{STG}$       | - 55---- + 150 |               |               |               |               |                | $^\circ C$   |

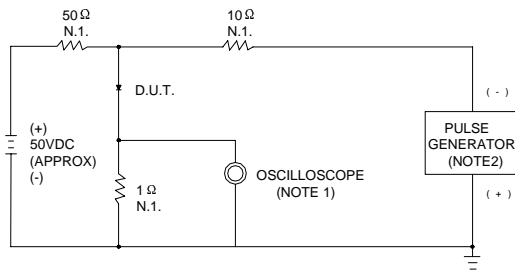
NOTE: 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $t_{rr}=0.25A$ .

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

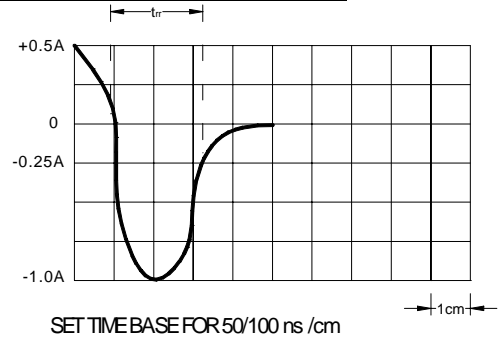
3. Thermal resistance from junction to ambient.

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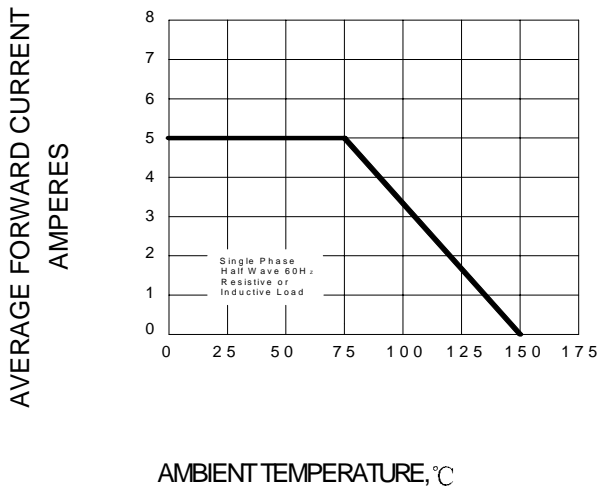
**FIG.1 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



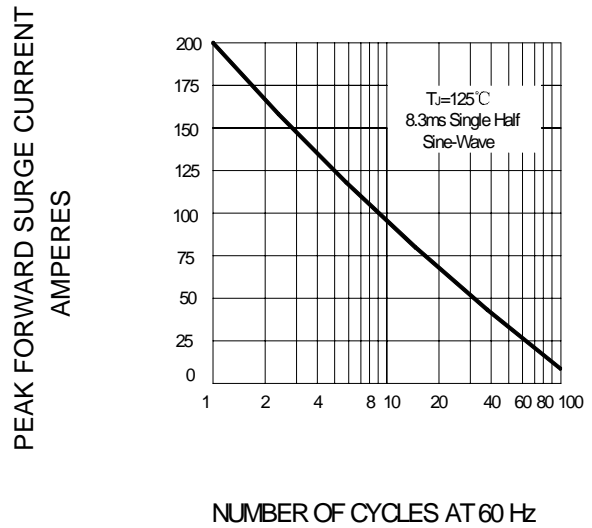
NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ, 22pF  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50Ω



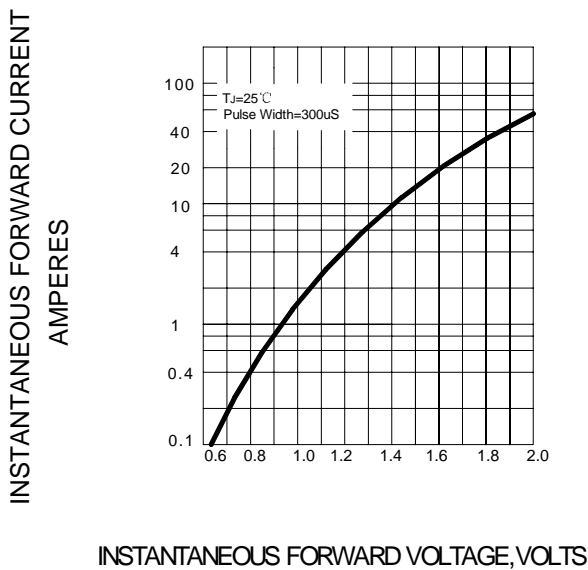
**FIG.2 – FORWARD DERATING CURVE**



**FIG.3 – PEAK FORWARD SURGE CURRENT**



**FIG.4 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.5 – TYPICAL JUNCTION CAPACITANCE**

