

## FAST RECOVERY RECTIFIERS

VOLTAGE RANGE: 200 --- 400 V

CURRENT: 1.2 A

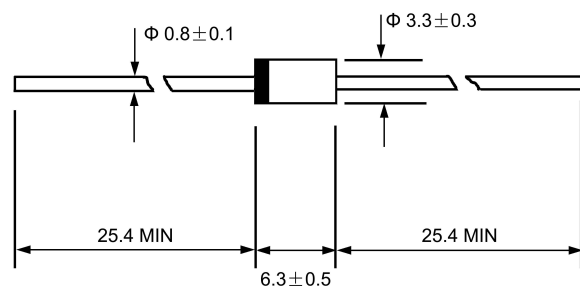
## FEATURES

- ◇ 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-15, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.014 ounces, 0.39 grams
- ◇ Mounting position: Any

## DO - 15



Dimensions in millimeters

## 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%.

|                                                                                                                   |                 | ERC18<br>-02 | ERC18<br>-04 | UNITS                     |
|-------------------------------------------------------------------------------------------------------------------|-----------------|--------------|--------------|---------------------------|
| Maximum recurrent peak reverse voltage                                                                            | $V_{RRM}$       | 200          | 400          | V                         |
| Maximum RMS voltage                                                                                               | $V_{RMS}$       | 140          | 280          | V                         |
| Maximum DC blocking voltage                                                                                       | $V_{DC}$        | 200          | 400          | V                         |
| Maximum average forward rectified current<br>9.5mm lead length, @ $T_A=75^\circ\text{C}$                          | $I_{F(AV)}$     | 1.2          |              | A                         |
| Peak forward surge current<br>8.3ms single half-sine-wave<br>superimposed on rated load @ $T_J=125^\circ\text{C}$ | $I_{FSM}$       | 40.0         |              | A                         |
| Maximum instantaneous forward voltage<br>@ 1.2 A                                                                  | $V_F$           | 1.0          |              | V                         |
| Maximum reverse current @ $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage @ $T_A=100^\circ\text{C}$        | $I_R$           | 5.0<br>100.0 |              | $\mu\text{A}$             |
| Maximum reverse recovery time (Note1)                                                                             | $t_{rr}$        | 100          |              | ns                        |
| Typical junction capacitance (Note2)                                                                              | $C_J$           | 18           |              | pF                        |
| Typical thermal resistance (Note3)                                                                                | $R_{\theta JA}$ | 45           |              | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range                                                                              | $T_J$           | -55---+150   |              | $^\circ\text{C}$          |
| Storage temperature range                                                                                         | $T_{STG}$       | -55---+150   |              | $^\circ\text{C}$          |

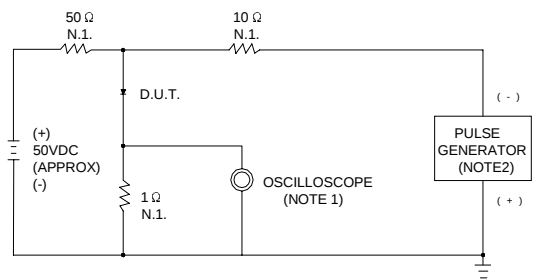
NOTE:1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $t_{rr}=0.25\text{A}$ .

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

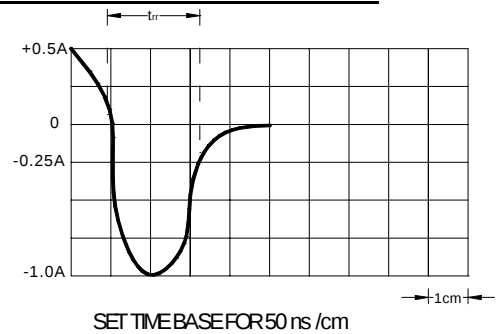
3. Thermal resistance from junction to ambient.

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



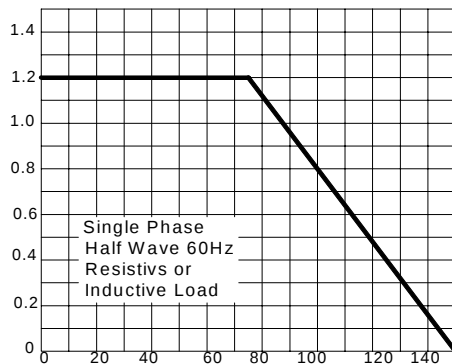
NOTES:1.RISE TIME=7ns MAX. INPUT IMPEDANCE=1MΩ,22pF  
2.RISE TIME=10ns MAX. SOURCE IMPEDANCE=50Ω



SET TIME BASE FOR 50 ns / cm

**FIG.2 –FORWARD DERATING CURVE**

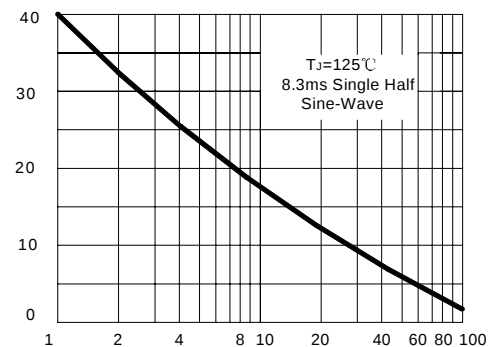
AVERAGE FORWARD CURRENT  
AMPERES



AMBIENT TEMPERATURE, °C

**FIG.3 –PEAK FORWARD SURGE CURRENT**

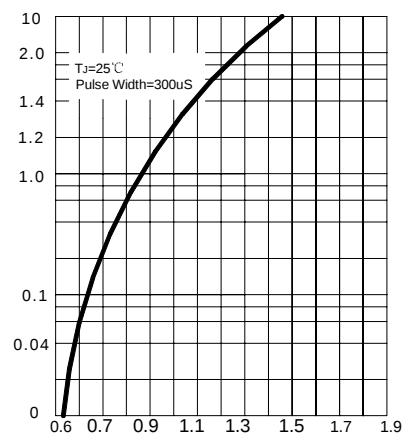
PEAK FORWARD SURGE CURRENT  
AMPERES



NUMBER OF CYCLES AT 60 Hz

**FIG.4-TYPICAL FORWARD CHARACTERISTIC**

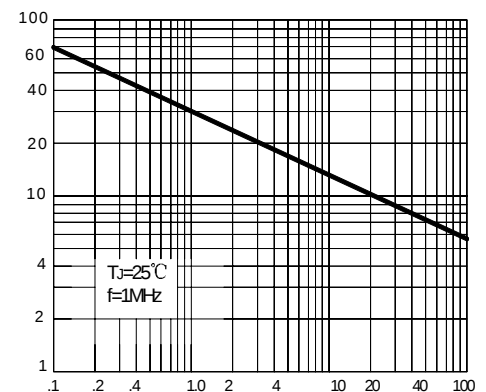
INSTANTANEOUS REVERSE CURRENT  
AMPERES



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

**FIG.5- TYPICAL JUNCTION CAPACITANCE**

JUNCTION CAPACITANCE,pF



REVERSE VOLTAGE, VOLTS