

### SUPER FAST RECTIFIERS

VOLTAGE RANGE: 300 --- 400 V  
CURRENT: 1.5 A

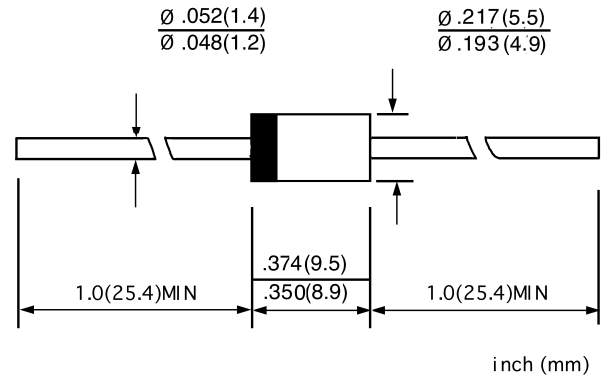
#### FEATURES

- ◇ Low cost
- ◇ Diffused junction
- ◇ Low leakage
- ◇ Low forward voltage drop
- ◇ High current capability
- ◇ Easily cleaned with alcohol, Isopropanol and similar solvents

#### 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, 50Hz, resistive or inductive load. For capacitive load, derate by 20%.

		31DF3	31DF4	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	300	400	V
Maximum RMS voltage	$V_{RMS}$	210	280	V
Maximum DC blocking voltage	$V_{DC}$	300	400	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.5		A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	$I_{FSM}$	125.0		A
Maximum instantaneous forward voltage @ $I_F=3\text{A}$	$V_F$	1.25		V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	5.0	50.0	$\mu\text{A}$
Maximum reverse recovery time (Note1)	$t_{rr}$	30		ns
Typical junction capacitance (Note2)	$C_J$	90		pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	34		$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	- 55 ----- + 150		$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 ----- + 150		$^\circ\text{C}$

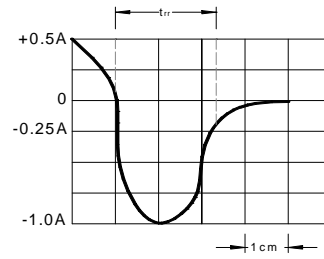
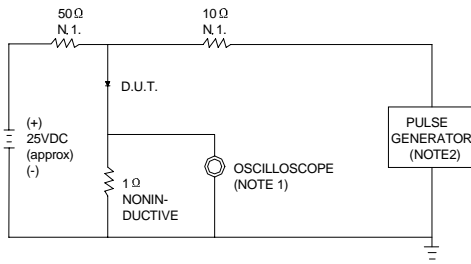
NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

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

3. Thermal resistance from junction to ambient.

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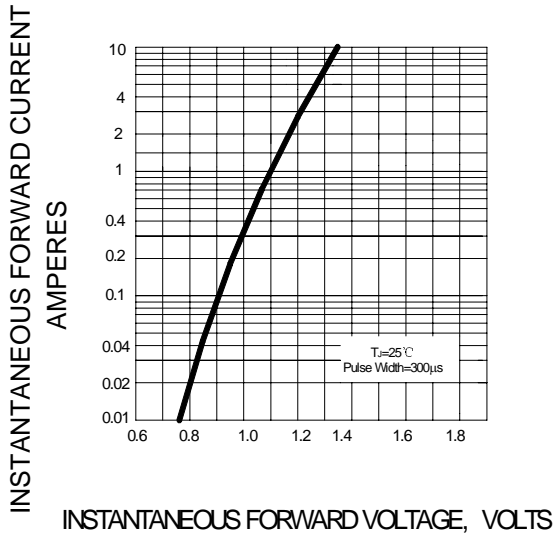
**FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



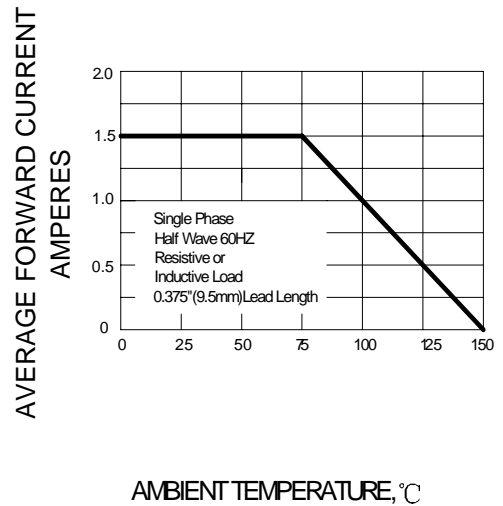
NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.  
2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.

SET TIME BASE FOR 10 ns/cm

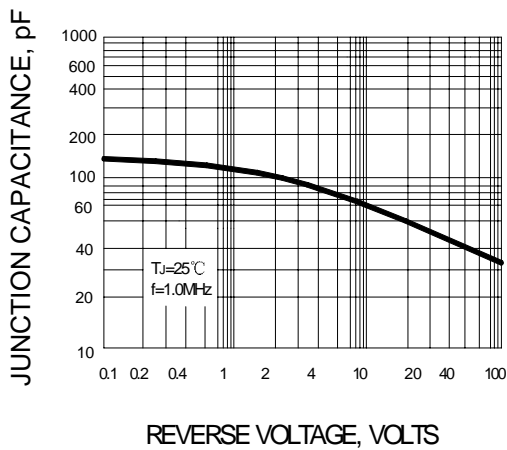
**FIG.2 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 – FORWARD DERATING CURVE**



**FIG.4– TYPICAL JUNCTION CAPACITANCE**



**FIG.5– PEAK FORWARD SURGE CURRENT**

