

### SUPER FAST RECTIFIERS

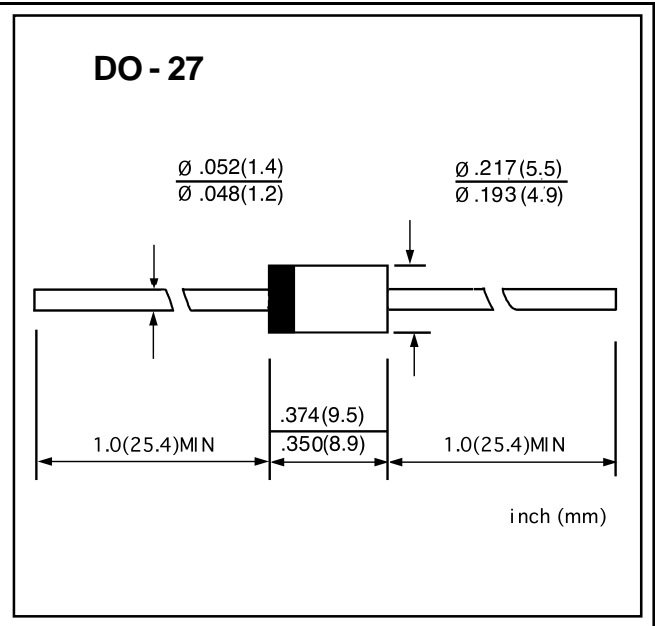
VOLTAGE RANGE: 100 --- 200 V  
CURRENT: 1.6 A

#### 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-STD202, 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, 50Hz, resistive or inductive load. For capacitive load, derate by 20%.

		31DF1	31DF2	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	100	200	V
Maximum RMS voltage	$V_{RMS}$	70	140	V
Maximum DC blocking voltage	$V_{DC}$	100	200	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$	$I_{F(AV)}$	1.6		A
Peak forward surge current 10ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ C$	$I_{FSM}$	125.0		A
Maximum instantaneous forward voltage @ $I_F=1.6A$	$V_F$	0.98		V
Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$	$I_R$	5.0	50.0	$\mu A$
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		$^\circ C/W$
Operating junction temperature range	$T_J$	- 55 ----- + 150		$^\circ C$
Storage temperature range	$T_{STG}$	- 55 ----- + 150		$^\circ C$

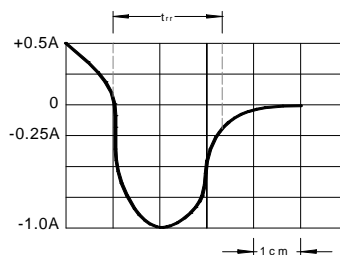
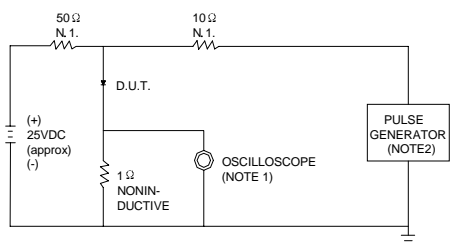
NOTE: 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $I_{rr}=0.25A$ .

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

3. Thermal resistance from junction to ambient.

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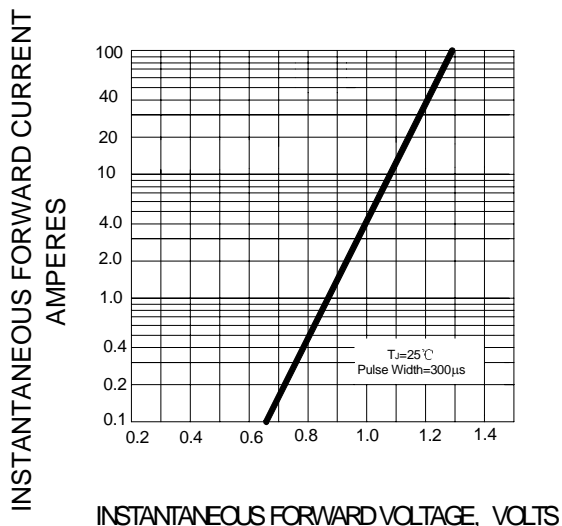
**FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



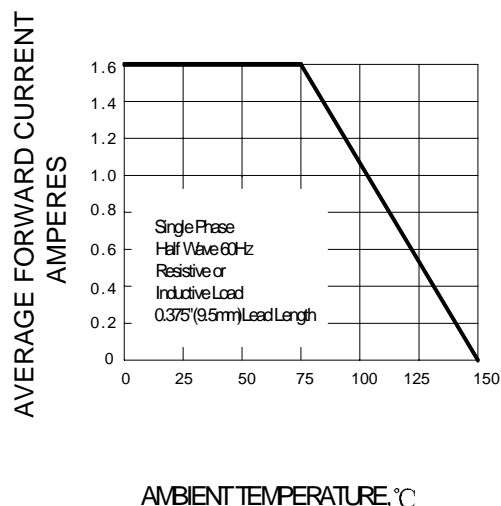
NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.  
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.

SET TIME BASE FOR 10 ns/cm

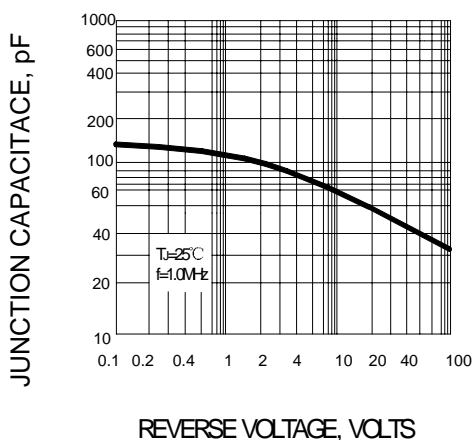
**FIG.2 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 – FORWARD DERATING CURVE**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**



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

