

### FAST RECOVERY RECTIFIER

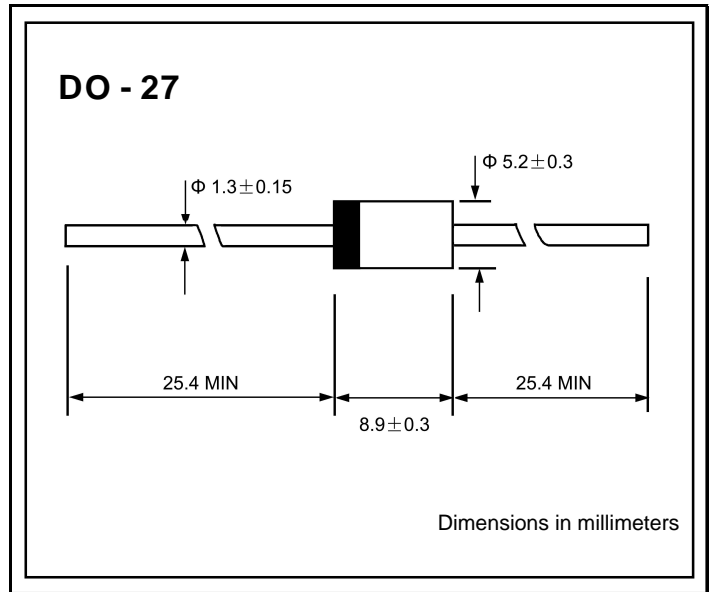
VOLTAGE RANGE: 800 V  
CURRENT: 3.0 A

#### FEATURES

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

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

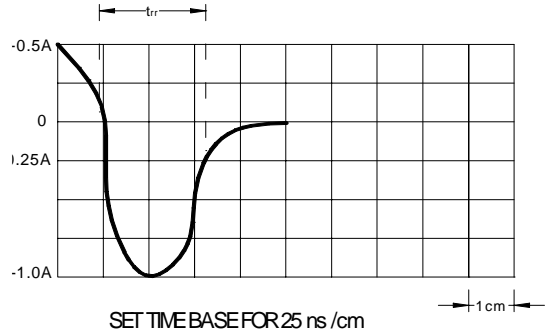
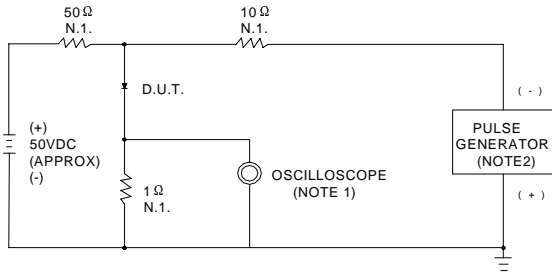
		BYW178	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	800	V
Maximum RMS voltage	$V_{RMS}$	560	V
Maximum DC blocking voltage	$V_{DC}$	800	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	3.0	A
Peak forward surge current 10ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	$I_{FSM}$	80	A
Maximum instantaneous forward voltage @ 3.0 A	$V_F$	1.9	V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	1.0 20	$\mu\text{A}$
Maximum reverse recovery time (Note1)	$t_{rr}$	60	ns
Typical junction capacitance (Note2)	$C_J$	32	pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	70	$^\circ\text{C/W}$
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.

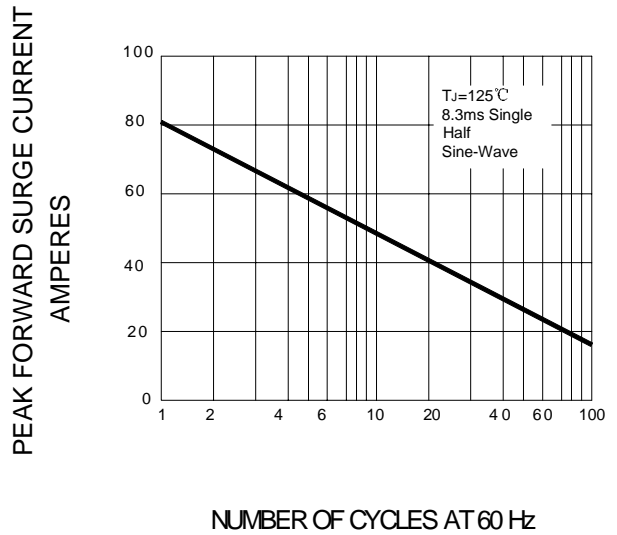
3. Thermal resistance from junction to ambient.

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

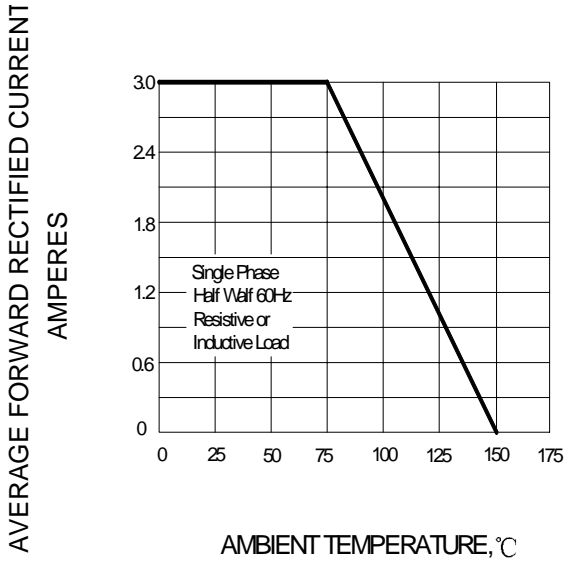


NOTES: 1. RISE TIME=7ns MAX. INPUT IMPEDANCE=1MΩ. 22pF  
 2. RISE TIME=10ns MAX. SOURCE IMPEDANCE=50Ω

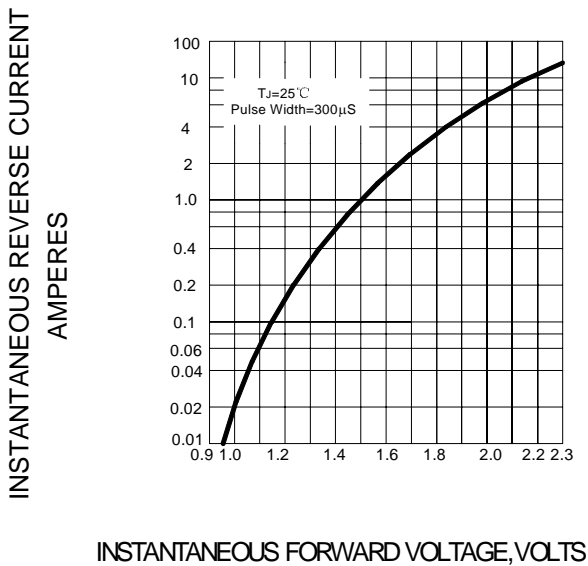
**FIG.3 – PEAK FORWARD SURGE CURRENT**



**FIG.2 – FORWARD DERATING CURVE**



**FIG.4 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.5 – TYPICAL JUNCTION CAPACITANCE**

