

FAST RECOVERY RECTIFIER

VOLTAGE RANGE: 800 V

CURRENT: 3.0 A

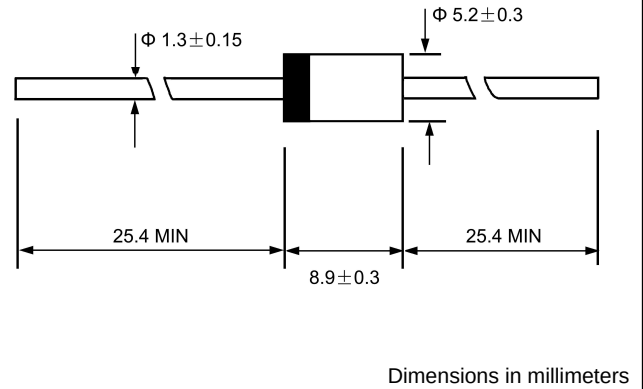
FEATURES

- ◇ 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

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%.

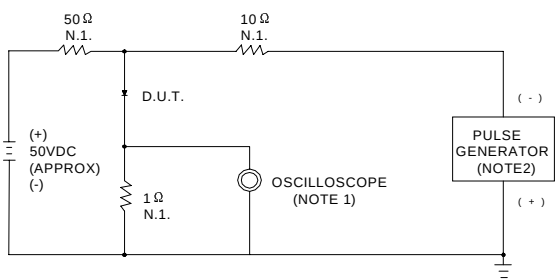
		BYW178	UNITS
Maximum recurrent peak reverse voltage	V_{RRM}	800	V
Maximum RMS voltage	V_{RMS}	560	V
Maximum DC blocking voltage	V_{DC}	800	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	3.0	A
Peak forward surge current 10ms single half-sine-wave superimposed 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	μA
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

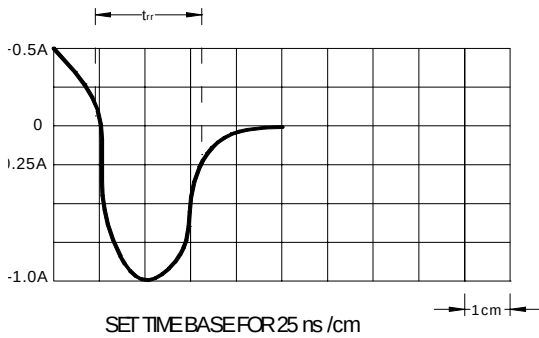


FIG.2 –FORWARD DERATING CURVE

AVERAGE FORWARD RECTIFIED CURRENT
AMPERES

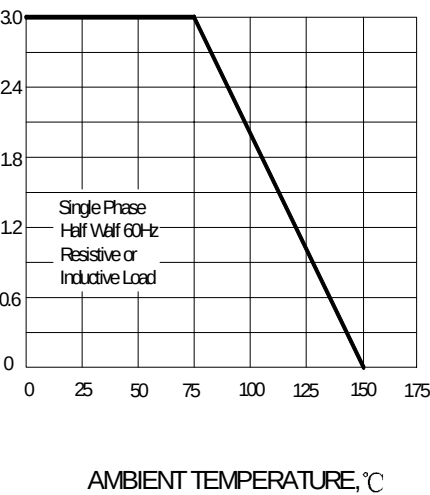


FIG.3 –PEAK FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT
AMPERES

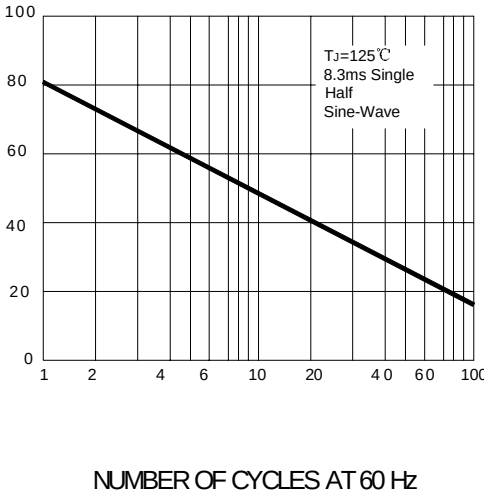
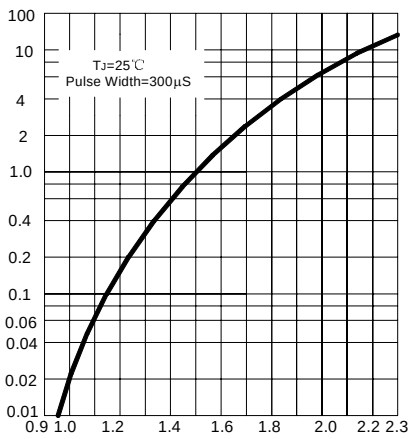


FIG.4-TYPICAL FORWARD CHARACTERISTIC

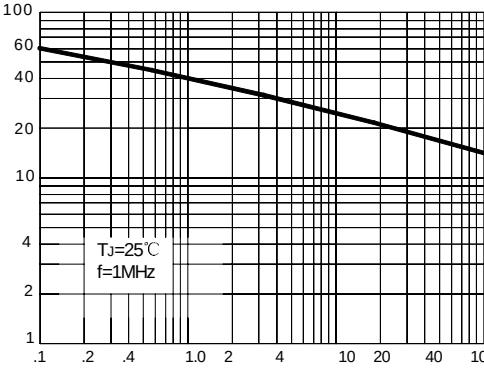
INSTANTANEOUS REVERSE CURRENT
AMPERES



INSTANTANEOUS FORWARD VOLTAGE,VOLTS

FIG.5- TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, pF



REVERSE VOLTAGE,VOLTS