

FAST RECOVERY RECTIFIER

VOLTAGE RANGE: 100 --- 1000 V

CURRENT: 1.5 A

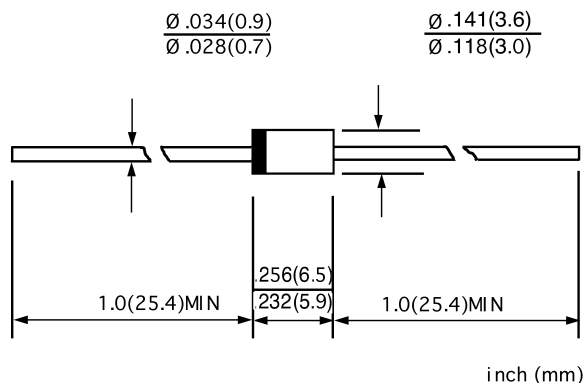
FEATURES

- ◇ 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



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%.

		BYV 12	BYV 13	BYV 14	BYV 15	BYV 16	UNITS
Maximum recurrent peak reverse voltage	V_{RRM}	100	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	70	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	100	400	600	800	1000	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}	60.0					A
Maximum instantaneous forward voltage @ 1.5 A	V_F	1.3					V
Maximum reverse current @ $T_A = 25^\circ\text{C}$ at rated DC blocking voltage @ $T_A = 100^\circ\text{C}$	I_R	5.0 100.0					μA
Maximum reverse recovery time (Note1)	t_{rr}	300					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					$^\circ\text{C}$

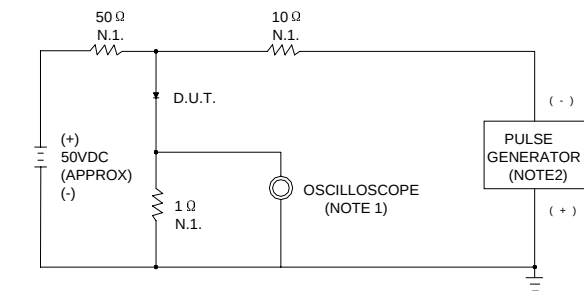
NOTE: 1. Measured with $I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $t_{rr} = 0.25\text{A}$.

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

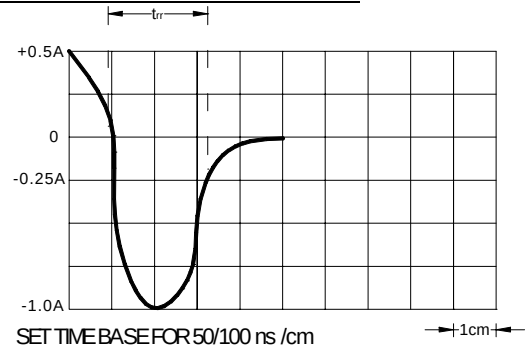
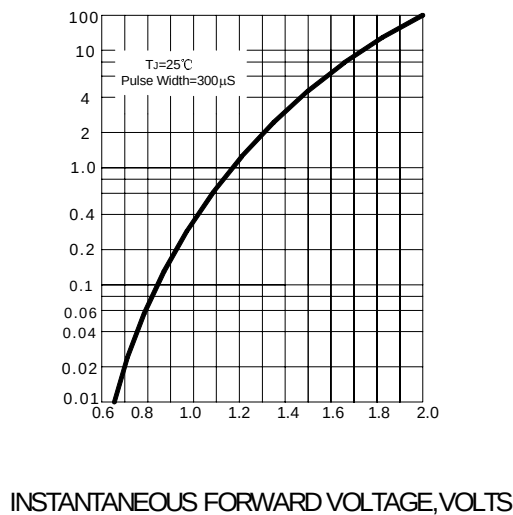


FIG.2 – TYPICAL FORWARD CHARACTERISTIC

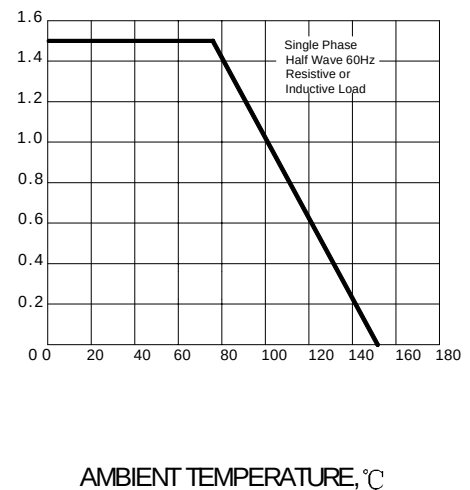
INSTANTANEOUS FORWARD CURRENT
AMPERES



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

FIG.3– FORWARD DERATING CURRENT

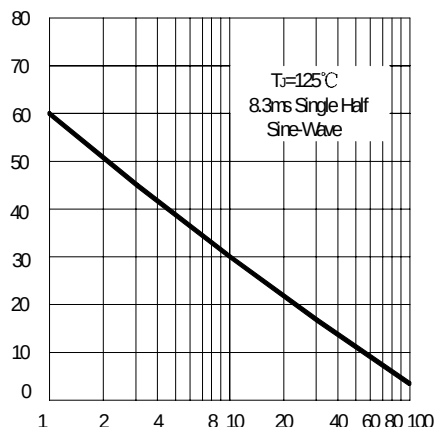
AVERAGE FORWARD RECTIFIED
CURRENT, AMPERES



AMBIENT TEMPERATURE, °C

FIG.4– PEAK FORWARD SURGE CURRENT

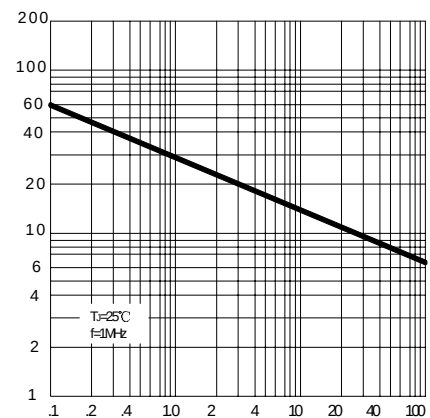
PEAK FORWARD SURGE CURRENT
AMPERES



NUMBER OF CYCLES AT 60Hz

FIG.7 – TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, pF



REVERSE VOLTAGE, VOLTS