

### FAST RECOVERY RECTIFIERS

VOLTAGE RANGE: 200 --- 1000 V

CURRENT: 1.3 A

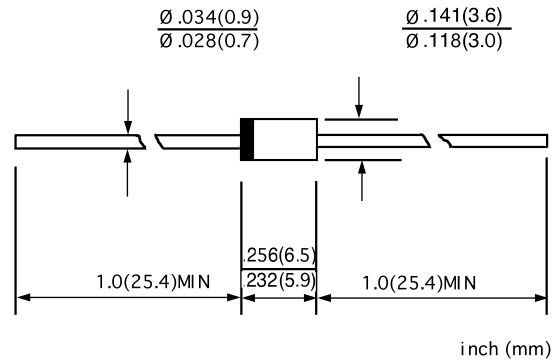
#### FEATURES

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

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

		BYD 33D	BYD 33G	BYD 33J	BYD 33K	BYD 33M	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	200	200	600	800	1000	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ\text{C}$	$I_{F(AV)}$	1.3					A
Peak forward surge current 10ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ\text{C}$	$I_{FSM}$	20.0					A
Maximum instantaneous forward voltage @ 1.0A	$V_F$	1.3					V
Maximum reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=100^\circ\text{C}$	$I_R$	1.0 100.0					$\mu\text{A}$
Maximum reverse recovery time (Note1)	$t_{rr}$	250			300		ns
Typical junction capacitance (Note2)	$C_J$	20					pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	120					K/W
Operating junction temperature range	$T_J$	-55 ---- + 150					$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 ---- + 150					$^\circ\text{C}$

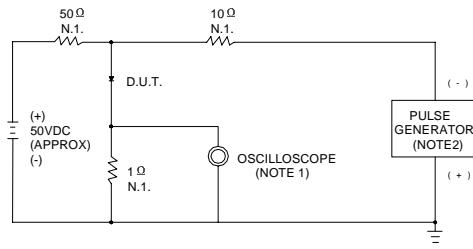
NOTE: 1. Measured with  $I_F=0.5\text{A}$ ,  $I_R=1\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

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

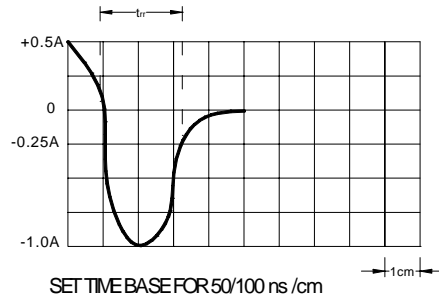
3. Thermal resistance from junction to ambient.

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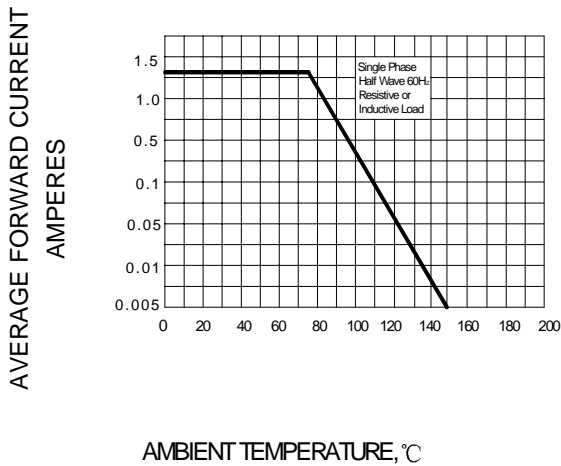
**FIG.1 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



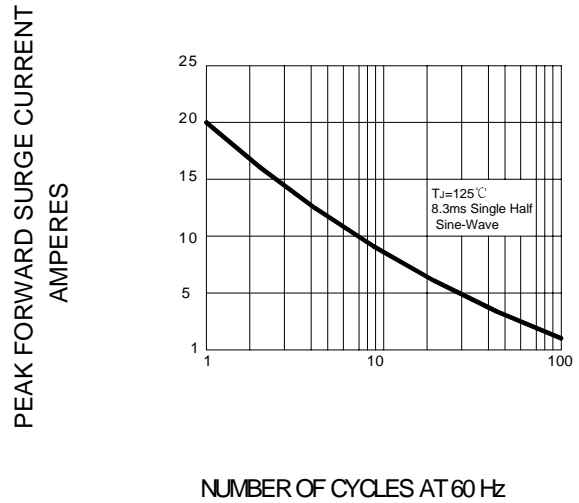
NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ, 22pF  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50Ω



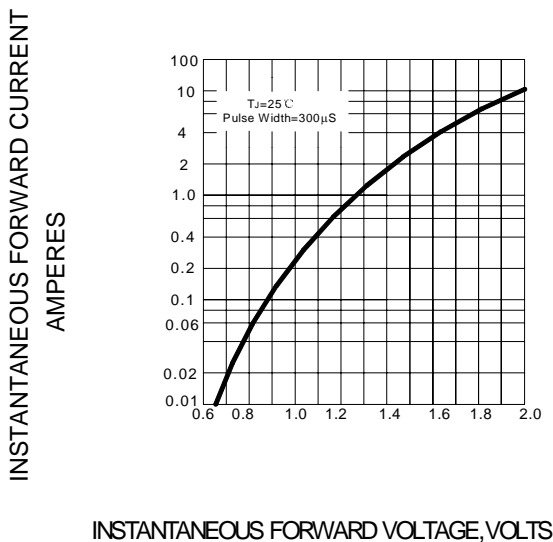
**FIG.2 – FORWARD DERATING CURVE**



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



**FIG.4 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.5 – TYPICAL JUNCTION CAPACITANCE**

