



## FAST RECOVERY RECTIFIER

**BA157 - BA159**

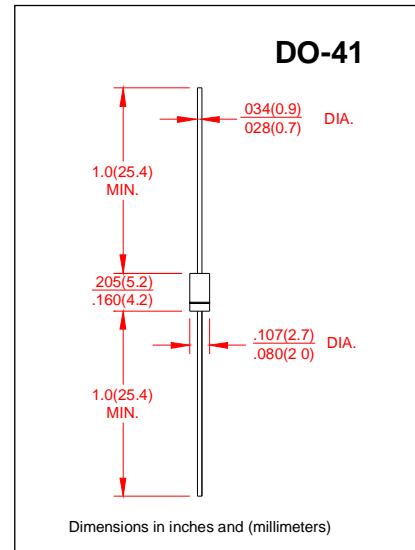
**VOLTAGE RANGE - 400 to 1000 V**  
**CURRENT - 1 A**

### FEATURES

- Low cost construction
- Fast switching for high efficiency.
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 secods/.375”(9.5mm)lead length at 5 lbs(2.3kg) tension

### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-O rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.012 ounce, 0.33 grams



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified Single Phase, half wave, 60Hz, resistive or inductive load for capacitive load derate current by 20%

	SYMBOLS	BA157	BA158	BA159	UNITS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	400	600	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	280	420	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	400	600	1000	Volts
Maximum Average Forward Rectified Current 0.375”(9.5mm) lead length at $T_A=75^{\circ}C$	$I_{(AV)}$	1.0			Amp
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30			Amps
Maximum Instantaneous Forward Voltage @ 1.0A	$V_F$	1.3			Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A=25^{\circ}C$	5.0			$\mu A$
	$T_A=100^{\circ}C$	100			
Maximum Reverse Recovery Time (Note 3) $T_J=25^{\circ}C$	$t_{rr}$	150	250	300	ns
Typical Junction Capacitance (Note 1)	$C_J$	15			pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	50			$^{\circ}C/W$
Operating Junction Temperature Range	$T_J$	(-55 to +150)			$^{\circ}C$
Storage Temperature Range	$T_{STG}$	(-55 to +150)			$^{\circ}C$

#### Notes:

1. Measured at 1.0MHz and Applied Reverse Voltage of 4.0Volts.
- 2 Thermal Resistance from junction to Ambient at .375”(9.5mm)lead length, P.C.board mounted.
3. Reverse Recovery Test Conditions:  $I_f=0.5A, I_r=1.0A, I_{rr}=0.25A$

### RATING AND CHARACTERISTIC CURVES BA157 - BA159

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

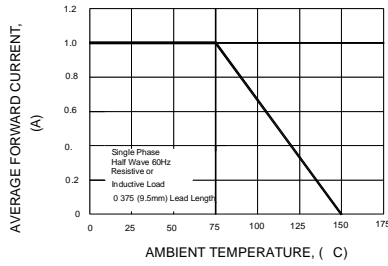


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

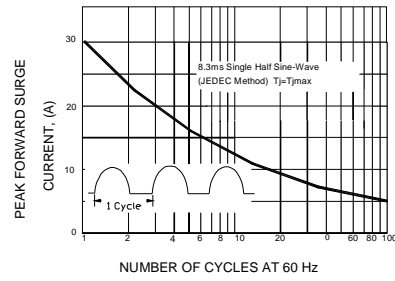


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

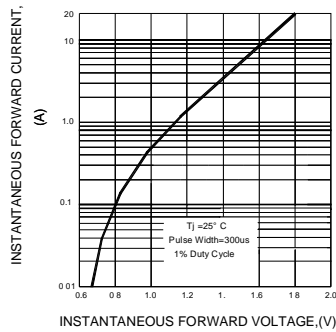


FIG.4-TYPICAL REVERSE CHARACTERISTICS

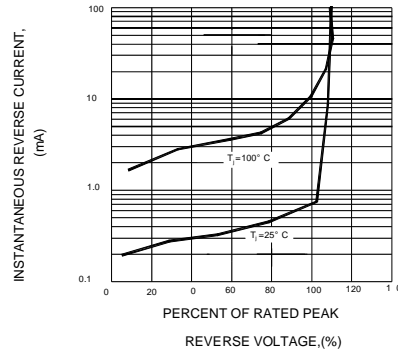


FIG.5-TYPICAL JUNCTION CAPACITANCE

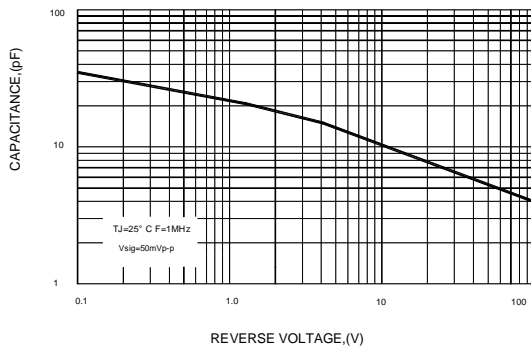
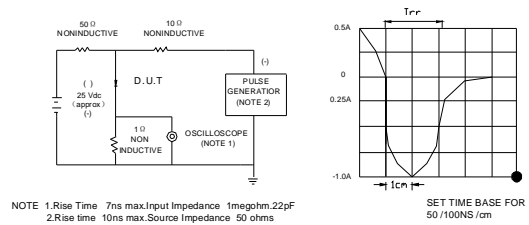


FIG.6 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTE 1. Rise Time 7ns max. Input Impedance 1megohm. 22pF  
2. Rise time 10ns max. Source Impedance 50 ohms

SET TIME BASE FOR 50/100NS/cm