



## FAST RECOVERY RECTIFIER

# BA157 THRU BA159

VOLTAGE RANGE  
CURRENT

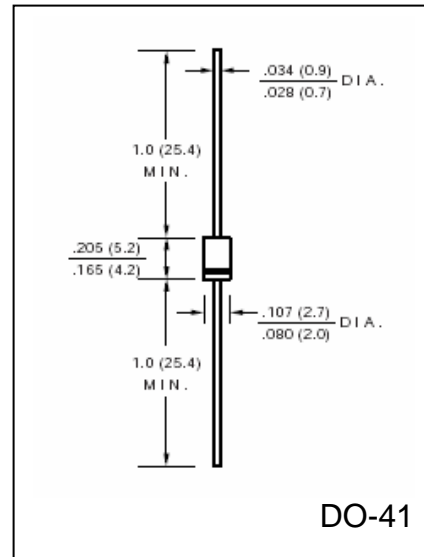
400 to 1000 Volts  
1.0 Ampere

### FEATURES

- Fast Switching for high efficiency
- Low reverse leakage
- High forward surge current capability
- High Temperature soldering guaranteed:  
260°C / 10 second, 0.375" (9.5mm) lead length

### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Polarity: Color band denotes cathode end
- Mounting Position: any
- Weight: 0.012 ounce, 0.33 gram



### 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	UNIT
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 $T_C = 75^\circ\text{C}$	$I_{(AV)}$	1.0			Amps
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 per element	$I_R$	5.0			$\mu\text{A}$
$T_A = 25^\circ\text{C}$ $T_A = 125^\circ\text{C}$		100			
Maximum Reverse Recovery Time Test conditions $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{RR} = 0.25\text{A}$	$t_{rr}$	150	250	500	nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	15			pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	50			$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	(-65 to +150)			$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-65 to +150)			$^\circ\text{C}$

### Notes:

1. Thermal resistance from Junction to ambient at 0.375" (9.5mm) lead length mounted on PCB



# RATINGS AND CHARACTERISTIC CURVES BA157 THRU BA159

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

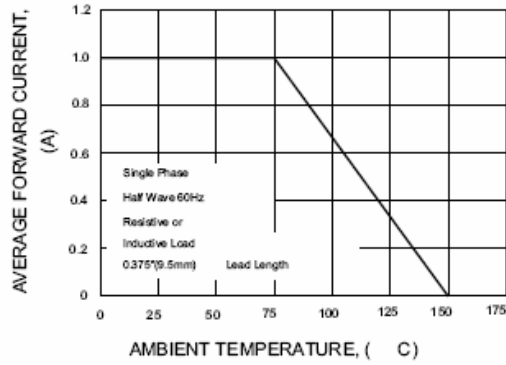


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

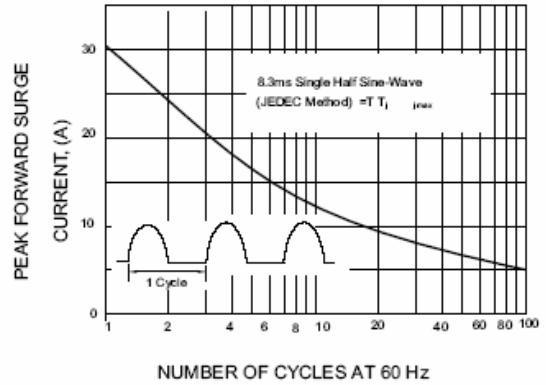


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

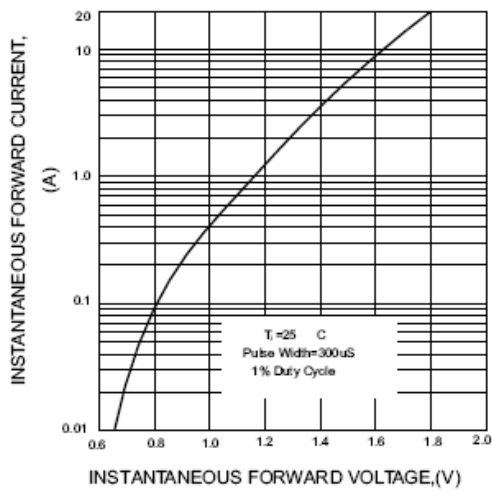


FIG.4-TYPICAL REVERSE CHARACTERISTICS

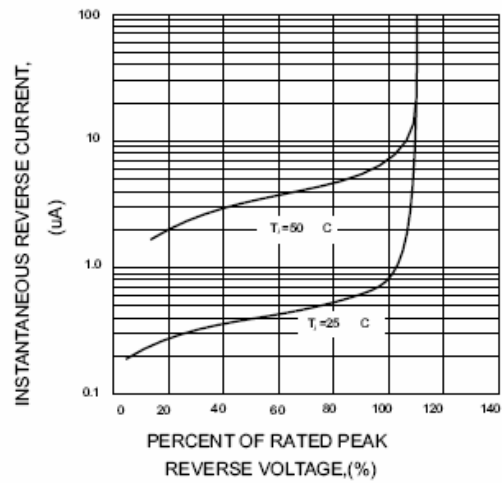


FIG.5-TYPICAL JUNCTION CAPACITANCE

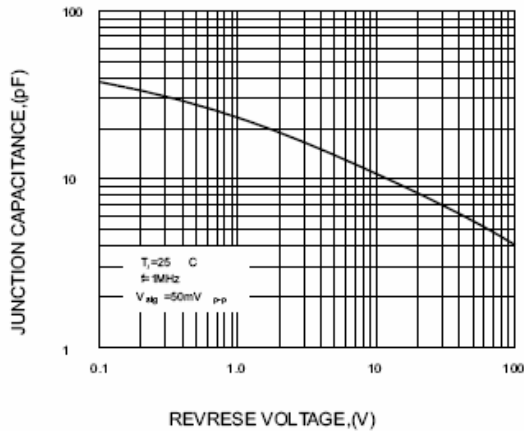
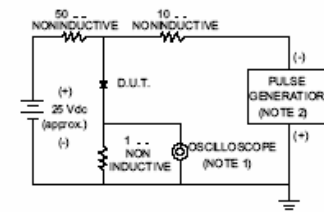


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1. Rise Time = 7ns max. Input Impedance = 1 megohm, 22pF  
2. Rise time = 10ns max. Source Impedance = 50 ohms

