



FAST RECOVER RECTIFIER

BA157 THRU BA159

VOLTAGE RANGE
CURRENT

400 to 1000 Volts
1.0 Ampere

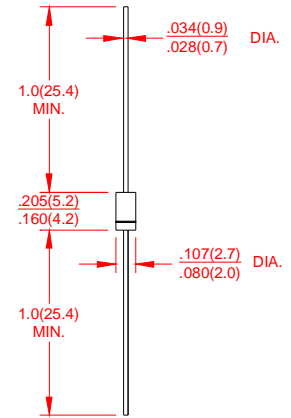
FEATURES

- Low cost construction
- Fast switching for high efficiency.
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:
260°C/10 seconds/.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

DO-41



Dimensions in inches and (millimeters)

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 $T_A = 75^\circ\text{C}$ | $I_{(AV)}$ | 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 | $T_A = 25^\circ\text{C}$ | 5.0 | | | μA |
| | $T_A = 100^\circ\text{C}$ | 100 | | | |
| Maximum Reverse Recovery Time (Note 3) $T_J = 25^\circ\text{C}$ | t_{rr} | 150 | 250 | 500 | ns |
| Typical Junction Capacitance (Note 1) | C_J | 15 | | | pF |
| Typical Thermal Resistance (Note 2) | $R_{\theta JA}$ | 50 | | | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range | T_J | (-55 to +150) | | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | (-55 to +150) | | | $^\circ\text{C}$ |

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: $I_f = 0.5\text{A}$, $I_r = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$



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RATING AND CHARACTERISTIC CURVES BA157 THRU BA159

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

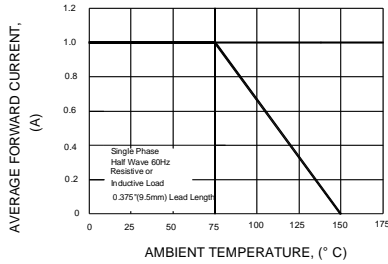


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

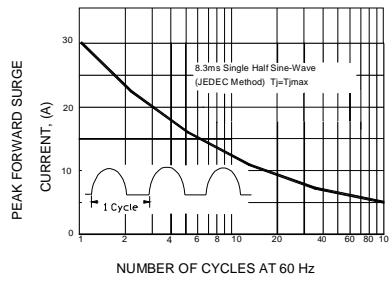


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

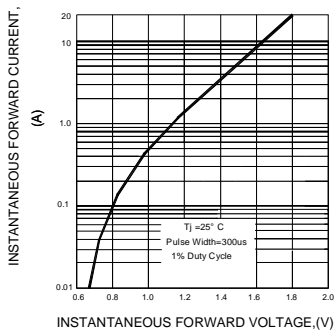


FIG.4-TYPICAL REVERSE CHARACTERISTICS

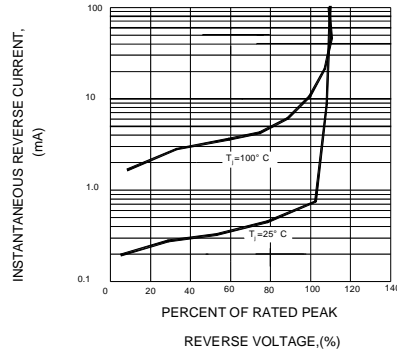


FIG.5-TYPICAL JUNCTION CAPACITANCE

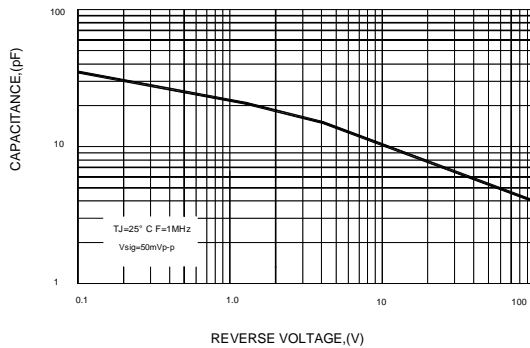
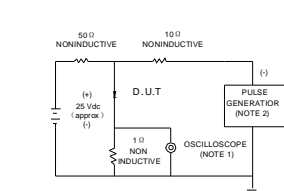


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

