



1 AMP FAST RECOVERY SILICON RECTIFIERS BA157 THRU BA159

TECHNICAL SPECIFICATION

FEATURES

- Fast recovery times for high efficiency
- Low cost construction utilizing void - free moulded plastic technique
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High surge current capability
Low leakage
- High temperature soldering capability
250°C/10 seconds/9.5mm (.375in.) lead length at 2.3kg (5lb) tension
- Easily cleaned with Freon, Alcohol, Chlorothene and other similar solvents

MECHANICAL DATA

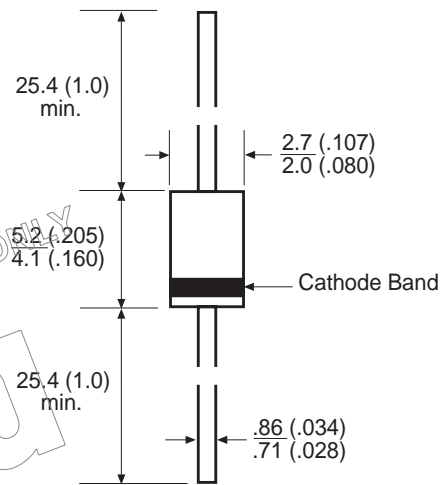
Case : JEDEC DO-41, moulded plastic.
 Terminals : Plated axial leads, solderable per MIL-STD-202, Method 208.
 Polarity : Colour band denotes cathode end.
 Mounting Position : Any
 Weight : 0.3 grams (0.012 ounce)

VOLTAGE
400 to 1000 Volts

CURRENT
1.0 Amp

DIMENSIONS - millimeters (inches)

DO-41



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 current by 20%.

| | Symbols | BA157 | BA158 | BA159 | Units |
|------------------------------------------------------------------------------------------------------|-------------|---------------------------|---------------|-------|--------------------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 400 | 600 | 1000 | V |
| Maximum RMS Voltage | V_{RMS} | 280 | 420 | 700 | V |
| Maximum DC Blocking Voltage | V_{DC} | 400 | 600 | 1000 | V |
| Maximum Average Forward Rectified Current 9.5mm (.375in.) Lead Length at $T_A = 75^\circ\text{C}$ | $I_{F(AV)}$ | | 1.0 | | A |
| Peak Forward Surge Current, 8.3 ms single half sine - wave superimposed on rated load | I_{FSM} | | 30 | | A |
| Maximum Instantaneous Forward Voltage at 1.0A | V_F | | 1.2 | | V |
| Maximum Reverse Current at Rated DC Blocking Voltage | I_R | $T_A = 25^\circ\text{C}$ | 5.0 | | μA |
| | | $T_A = 100^\circ\text{C}$ | 100 | | μA |
| Maximum Reverse Recovery Time (see Note 3) | t_{rr} | 150 | 250 | 500 | nS |
| Typical Junction Capacitance (see Note 1) | C_J | | 15 | | pF |
| Typical Thermal Resistance (see Note 2) | R_{THja} | | 50 | | $^\circ\text{C/W}$ |
| Operating Temperature Range | T_J | | - 50 to + 175 | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | | - 50 to + 175 | | $^\circ\text{C}$ |

Notes :

1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
2. Thermal Resistance from Junction to Ambient
3. Test Conditions : $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$ recovery to 0.25A

RATING AND CHARACTERISTIC CURVES

FIG. 1 - FORWARD CURRENT DERATING CURVE

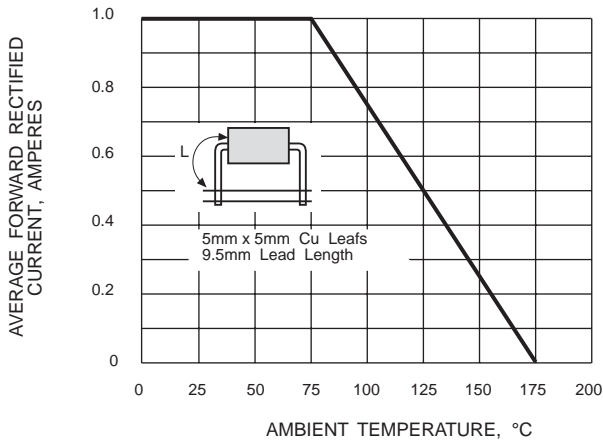


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

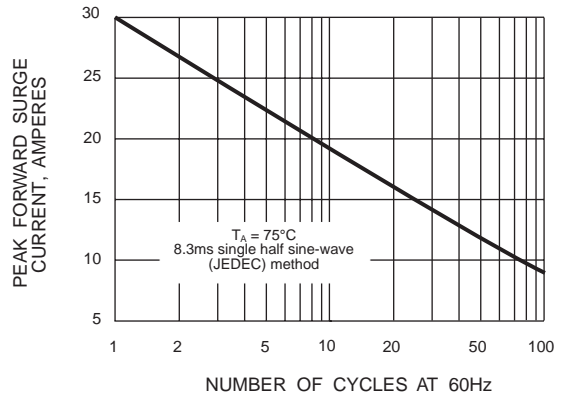


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

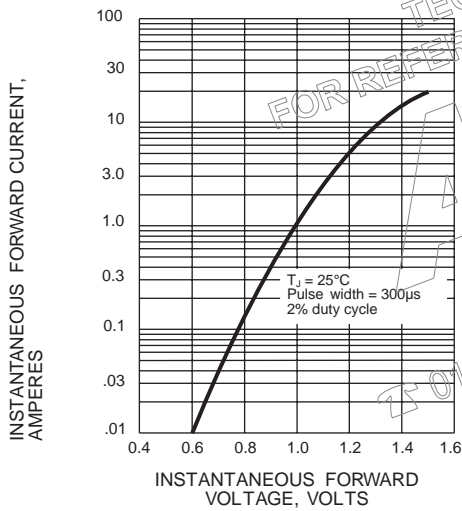


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

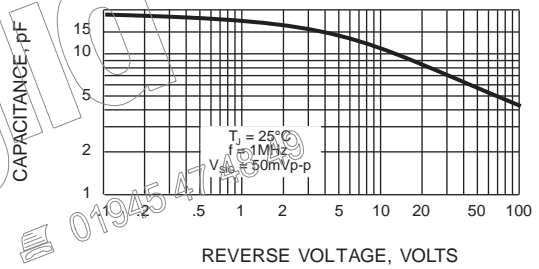
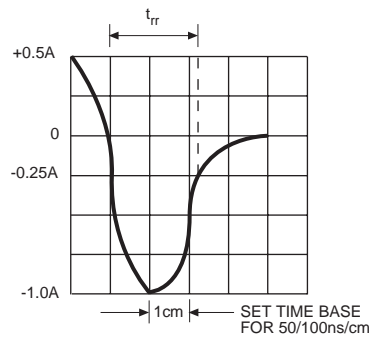
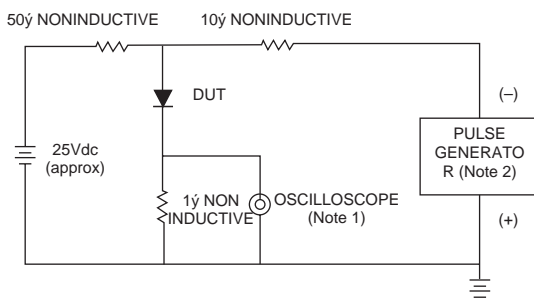


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



- NOTES
- 1 Rise Time = 7ns max, Input Impedance = 1 megaohm 22pF
 - 2 Rise Time = 10ns max, Source Impedance = 50 ohms