# Fast Diode

RoHS Compliant

## Features:

- High surge current capability
- Void-free plastic in a DO-41 package
- 1A operation at $T_A$ = 55°C with no thermal runaway
- Fast switching for high efficiency
- Exceeds environmental standards of MIL-S-19500/228

## Specifications:

**Mechanical Data:**

| | |
|---|---|
| Case | : Moulded plastic, DO-41 |
| Terminals | : Axial leads, solderable per MIL-STD-202, Method 208 |
| Polarity | : Colour band denotes cathode |
| Mounting position | : Any |
| Weight | : 0.012 oz, 0.3g |

## Maximum Ratings and Electrical Characteristics:

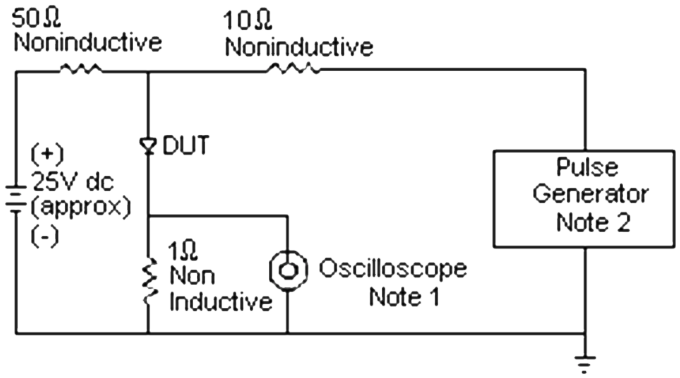
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

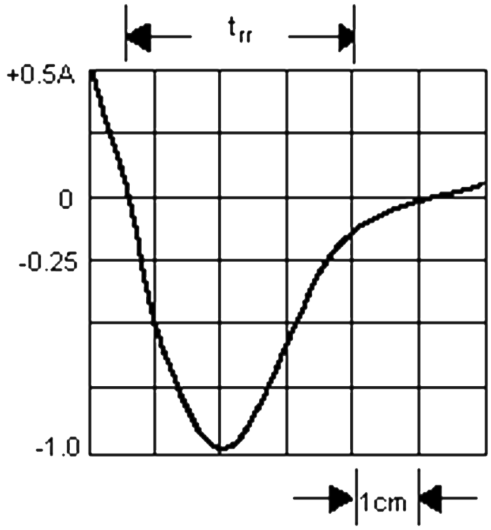
| Parameters | BA157 | BA159 | Units |
|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | 400 | 1,000 | V |
| Maximum RMS Voltage | 280 | 700 | |
| Maximum DC Blocking Voltage | 400 | 1,000 | |
| Maximum Average Forward Rectified Current 0.375" (9.5mm) Lead Length at $T_A$ = 55°C | 1 | | A |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) | 30 | | |
| Maximum Forward Voltage at 1A | 1.3 | | V |
| Maximum reverse current $T_J$ = 25°C<br>at rated DC blocking voltage $T_J$ = 100°C | 5<br>500 | | µA |

| Parameters | BA157 | BA159 | Units |
|---|---|---|---|
| Typical Junction Capacitance (Note 1) | 12 | | pF |
| Maximum reverse recovery time (Note 2) | 150 | 250 | °C/W |
| Operating and Storage Temperature Range | -50 to +150 | | °C |

**Notes:**
1. Measured at 1MHz and applied reverse voltage of 4V.
2. Reverse recovery test conditions: $I_F$ = 0.5A, $I_R$ = 1A, $I_{RR}$ = 0.25A.

## Ratings and Characteristic Curves




Set Time Base For 50nS/cm

**Notes:**
1. Rise Time = 7nS maximum Input Impedance = 1MΩ, 22pF
2. Rise Time = 10nS maximum Source Impedance = 50Ω

**Figure 1 - Reverse Recovery Time Characteristics and Test Circuit Diagram**

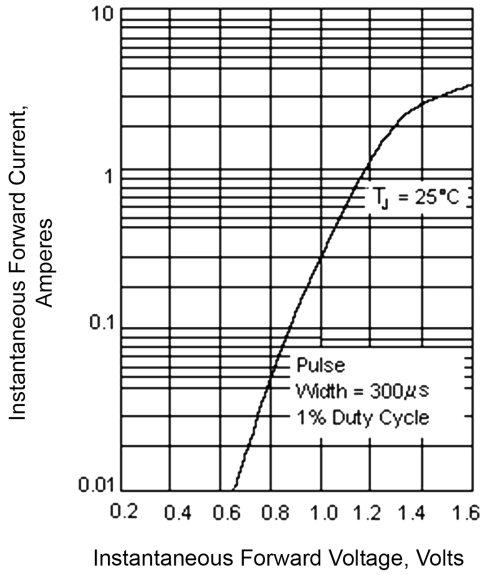



**Figure 2 - Typical Instantaneous Forward Characteristics**

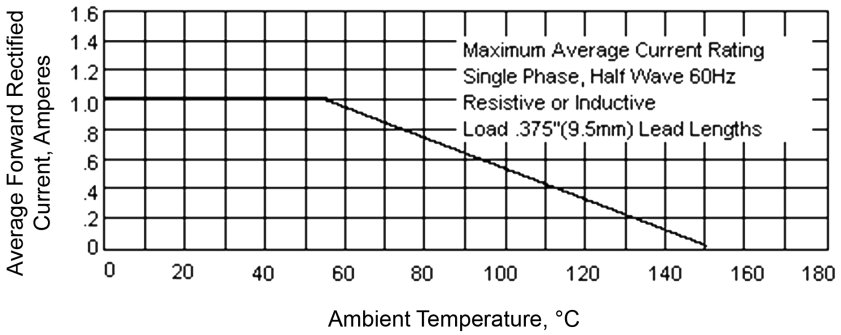



**Figure 3 - Forward Current Derating Curve**

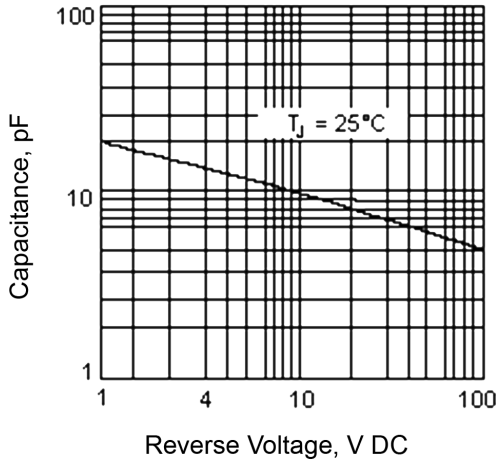



**Figure 4 - Typical Junction Capacitance**

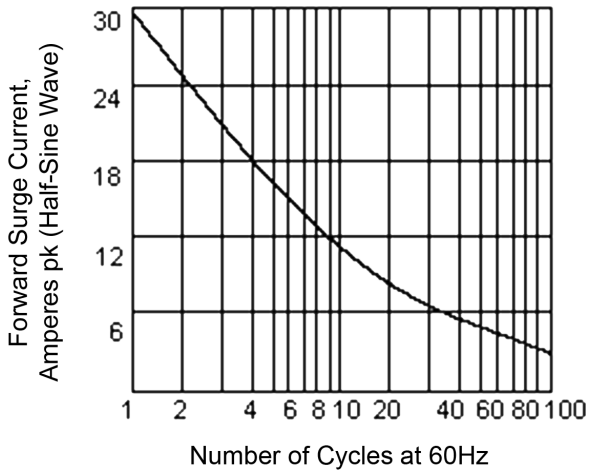
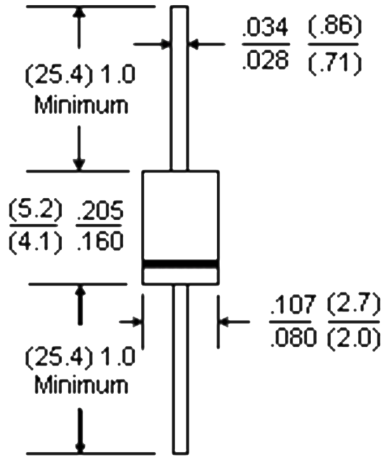



**Figure 5 - Peak Forward Surge Current**

**DO-41**




Dimensions : Inches (Millimetres)

## Part Number Table

| Description | Part Number |
|---|---|
| Diode, Fast, 1A, 400V | BA157 |
| Diode, Fast, 1A, 1,000V | BA159 |