

# Power Diode - Fast Recovery



## Features:

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability

## Mechanical specifications:

|                                       |                                                                            |
|---------------------------------------|----------------------------------------------------------------------------|
| Cases                                 | : Moulded plastic                                                          |
| Lead                                  | : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed.          |
| Polarity                              | : Colour band denotes cathode end.                                         |
| High temperature soldering guaranteed | : 260°C/10 seconds/0.375", (9.5mm) lead lengths at 5lbs., (2.3kg) tension. |

## Maximum Ratings and Electrical Characteristics

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

| Type Number                                                                                                      | Symbol          | FR107       | Unit               |
|------------------------------------------------------------------------------------------------------------------|-----------------|-------------|--------------------|
| Maximum recurrent peak reverse voltage                                                                           | $V_{RRM}$       | 1,000       | V                  |
| Maximum RMS voltage                                                                                              | $V_{RMS}$       | 700         |                    |
| Maximum DC blocking voltage                                                                                      | $V_{DC}$        | 1,000       |                    |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 55^\circ\text{C}$                 | $I_{(AV)}$      | 3           | A                  |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)                | $I_{FSM}$       | 150         |                    |
| Maximum instantaneous forward voltage at 1.0A                                                                    | $V_F$           | 1.2         | V                  |
| Maximum DC reverse current at $T_A = 25^\circ\text{C}$ at rated DC blocking voltage at $T_A = 100^\circ\text{C}$ | $I_R$           | 5<br>100    | $\mu\text{A}$      |
| Maximum reverse recovery time (Note 1)                                                                           | $T_{rr}$        | 500         | ns                 |
| Typical junction capacitance (Note 2)                                                                            | $C_j$           | 60          | pF                 |
| Typical thermal resistance (Note 3)                                                                              | $R_{\theta JA}$ | 40          | $^\circ\text{C/W}$ |
| Operating temperature range                                                                                      | $T_J$           | -65 to +150 | $^\circ\text{C}$   |
| Storage temperature range                                                                                        | $T_{STG}$       |             |                    |

### Notes:

1. Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 0.25\text{A}$
2. Measured at 1MHz and applied reverse voltage of 4V DC
3. Mount on Cu-Pad Size 5mm × 5mm on PCB

## Ratings and Characteristic Curves

Figure 1 Maximum Forward Current Derating Curve

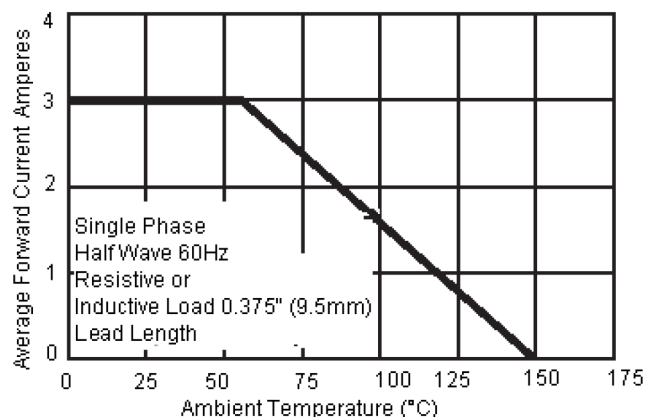


Figure 2 Maximum Non-Repetitive Forward Surge Current

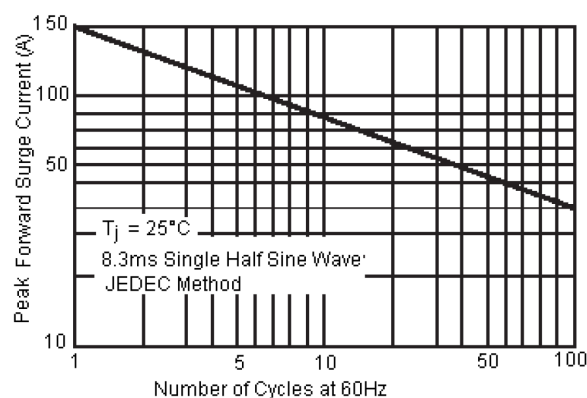


Figure 3 Typical Forward Characteristics

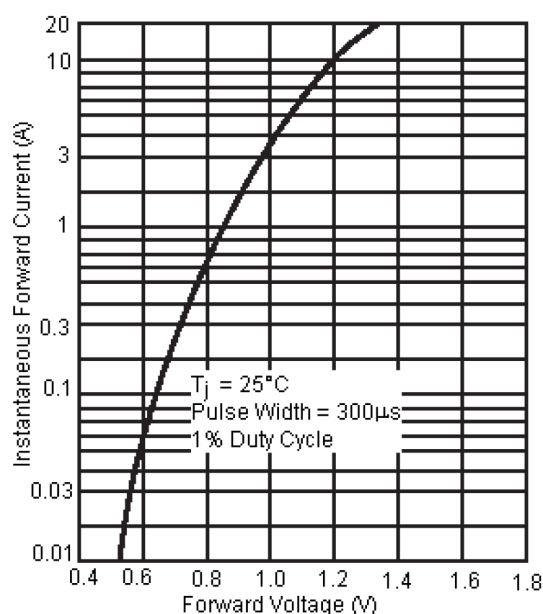
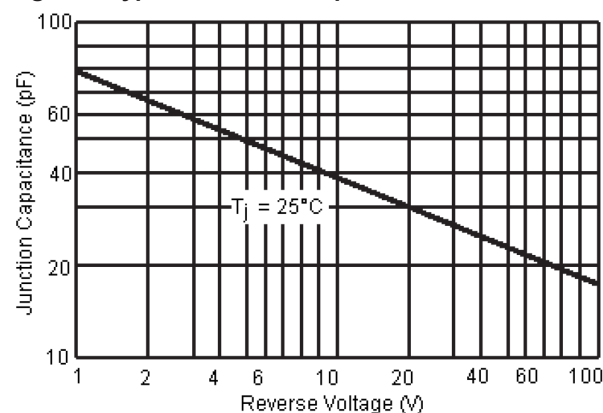
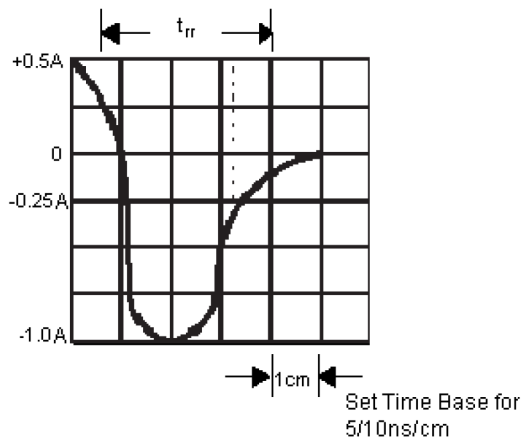
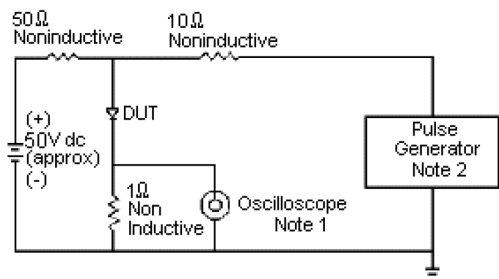


Figure 4 Typical Junction Capacitance



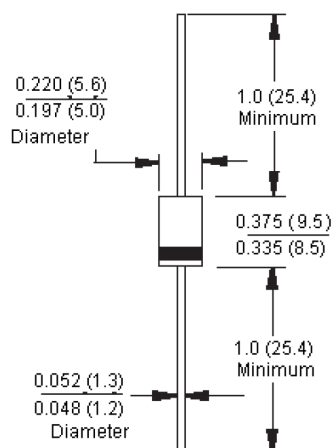
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**Figure 5 Reverse Recovery Time Characteristic and Test Circuit Diagram**



- Note: 1. Rise Time = 7nS Max.  
Input Impedance = 1MΩ, 22pF
2. Rise Time = 10nS Max.  
Source Impedance = 50Ω

## DO-201AD



Dimensions : Inches (Millimetres)

## Part Number Table

| Description                  | Length | Diameter | Part Number |
|------------------------------|--------|----------|-------------|
| Power Diodes - Fast Recovery | 9.5mm  | 5.6mm    | FR307       |

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