



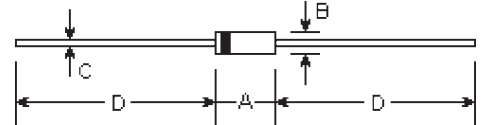
# FR101 THRU FR107

**FAST RECOVERY RECTIFIER**  
**Reverse Voltage - 50 to 1000 Volts**  
**Forward Current - 1.0 Ampere**

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Construction utilizes void-free molded plastic technique
- 1.0 ampere operation at  $T_A=55^\circ\text{C}$  with no thermal runaway
- High temperature soldering guaranteed:  $250^\circ\text{C}/10$  seconds, 0.375"(9.5mm) lead length, 5 lbs. (2.3kg) tension

## DO-41



## Mechanical Data

- **Case:** DO-41 molded plastic body
- **Terminals:** Plated axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.012 ounce, 0.33 gram

| DIM | DIMENSIONS |       |       |      | Note |
|-----|------------|-------|-------|------|------|
|     | inches     |       | mm    |      |      |
|     | Min.       | Max.  | Min.  | Max. |      |
| A   | 0.165      | 0.205 | 4.2   | 5.2  |      |
| B   | 0.079      | 0.106 | 2.0   | 2.7  | ϕ    |
| C   | 0.028      | 0.034 | 0.71  | 0.86 | ϕ    |
| D   | 1.000      | -     | 25.40 | -    |      |

## Maximum Ratings and Electrical Characteristics @25°C unless otherwise specified

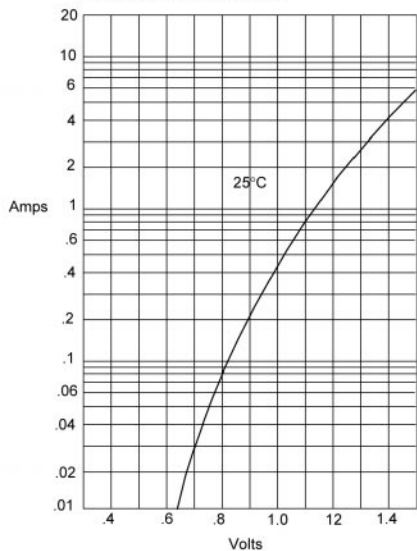
|  | Symbols        | FR 101       | FR 102 | FR 103 | FR 104 | FR 105 | FR 106 | FR 107 | FR 107-STR | Units |
|--|----------------|--------------|--------|--------|--------|--------|--------|--------|------------|-------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | 1000       | Volts |
| Maximum RMS voltage  | $V_{RMS}$      | 35           | 70     | 140    | 280    | 420    | 560    | 700    | 700        | Volts |
| Maximum DC blocking voltage  | $V_{DC}$       | 50           | 100    | 200    | 400    | 600    | 800    | 1000   | 1000       | Volts |
| Average forward rectified current at $T_A=55^\circ\text{C}$  | $I_{(AV)}$     | 1.0          |        |        |        |        |        |        |            | Amp   |
| Peak forward surge current 8.3mS single half sine-wave   | $I_{FSM}$      | 30.0         |        |        |        |        |        |        |            | Amps  |
| Maximum instantaneous forward voltage $I_{FM}=1.0\text{A}, T_A=25^\circ\text{C}$ (Note 3)              | $V_F$          | 1.3          |        |        |        |        |        |        |            | Volts |
| Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$ | $I_R$          | 5.0<br>100.0 |        |        |        |        |        |        |            | mA    |
| Maximum reverse recovery time (Note 1)   | $T_{rr}$       | 150          |        |        | 250    | 500    | 250    | nS     |            |       |
| Typical junction capacitance (Note 2)  | $C_J$          | 15.0         |        |        |        |        |        |        |            | pF    |
| Operating and Storage temperature range  | $T_J, T_{STG}$ | -65 to +175  |        |        |        |        |        |        |            | °C    |

### Notes:

- (1) Reverse recovery test conditions:  $I_r=0.5\text{A}, I_{FR}=1.0\text{A}, I_{rr}=0.25\text{A}$
- (2) Measured at 1.0MHz and applied reverse voltage of 4.0 volts
- (3) Pulse test: pulse width 300uSec, Duty cycle 1%

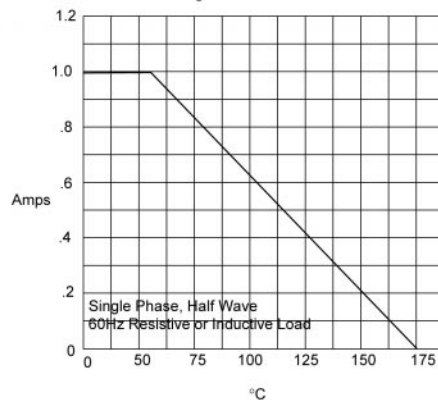
# RATINGS AND CHARACTERISTIC CURVES

Figure 1  
Typical Forward Characteristics



Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

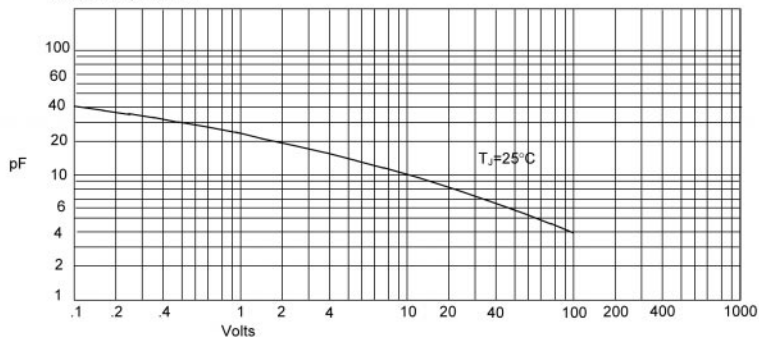
Figure 2  
Forward Derating Curve



Single Phase, Half Wave  
60Hz Resistive or Inductive Load

Average Forward Rectified Current - Amperes *versus*  
Ambient Temperature - °C

Figure 3  
Junction Capacitance



Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

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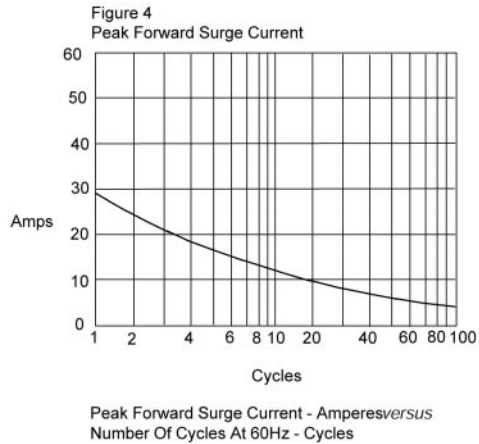


Figure 5  
Reverse Recovery Time Characteristic And Test Circuit Diagram

