



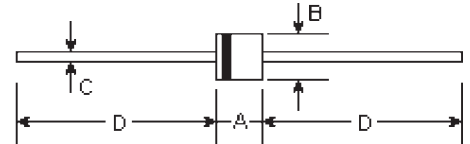
# FR601 THRU FR607

**FAST RECOVERY RECTIFIER**  
**Reverse Voltage - 50 to 1000 Volts**  
**Forward Current - 6.0 Amperes**

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Construction utilizes void-free molded plastic technique
- 6.0 ampere operation at  $T_A=75^\circ\text{C}$  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

**R-6**



## Mechanical Data

- **Case:** R-6 molded plastic body
- **Terminals:** Plated axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.074 ounce, 2.1 grams

| DIM | DIMENSIONS |       |       |      | Note |
|-----|------------|-------|-------|------|------|
|     | inches     |       | mm    |      |      |
|     | Min.       | Max.  | Min.  | Max. |      |
| A   | 0.339      | 0.358 | 8.6   | 9.1  |      |
| B   | 0.339      | 0.358 | 8.6   | 9.1  | φ    |
| C   | 0.047      | 0.052 | 1.2   | 1.3  | φ    |
| D   | 1.000      | -     | 25.40 | -    |      |

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

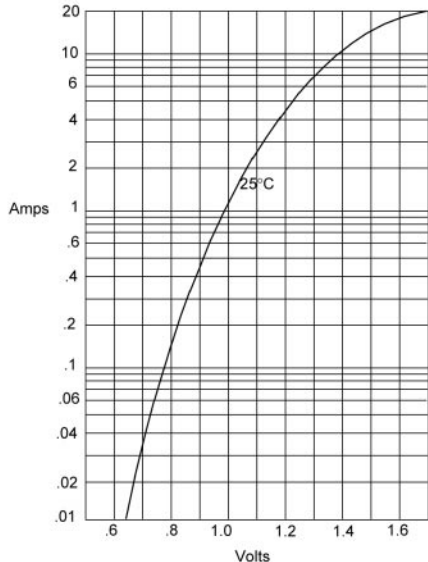
|   | Symbols        | FR601         | FR602 | FR603 | FR604 | FR605 | FR606 | FR607 | Units            |
|---|----------------|---------------|-------|-------|-------|-------|-------|-------|------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$      | 50            | 100   | 200   | 400   | 600   | 800   | 1000  | Volts            |
| Maximum RMS voltage   | $V_{RMS}$      | 35            | 70    | 140   | 280   | 420   | 560   | 700   | Volts            |
| Maximum DC blocking voltage   | $V_{DC}$       | 50            | 100   | 200   | 400   | 600   | 800   | 1000  | Volts            |
| Average forward rectified current at $T_A=75^\circ\text{C}$   | $I_{(AV)}$     | 6.0           |       |       |       |       |       |       | Amps             |
| Peak forward surge current<br>8.3mS single half sine-wave<br>(MIL-STD-750D 4066 method)                     | $I_{FSM}$      | 300.0         |       |       |       |       |       |       | Amps             |
| Maximum instantaneous forward voltage at $I_{FM}=6.0\text{A}$ , $T_A=25^\circ\text{C}$ (Note 3)             | $V_F$          | 1.3           |       |       |       |       |       |       | Volts            |
| Maximum DC reverse current at rated DC blocking voltage<br>$T_A=25^\circ\text{C}$<br>$T_A=55^\circ\text{C}$ | $I_R$          | 10.0<br>150.0 |       |       |       |       |       |       | $\mu\text{A}$    |
| Maximum reverse recovery time (Note 1)  | $T_{rr}$       | 150           |       |       | 250   | 500   |       |       | nS               |
| Typical junction capacitance (Note 2)   | $C_J$          | 150.0         |       |       |       |       |       |       | $\mu\text{F}$    |
| Operating and storage temperature range   | $T_J, T_{STG}$ | -65 to +150   |       |       |       |       |       |       | $^\circ\text{C}$ |

**Notes:**

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

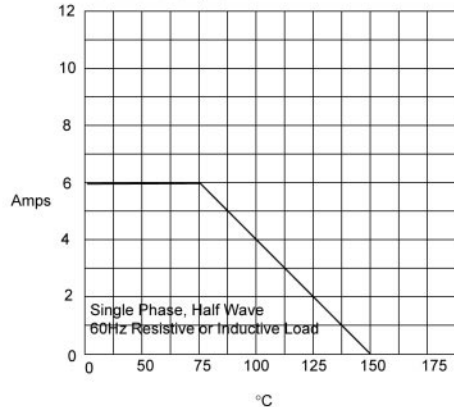
# RATINGS AND CHARACTERISTIC CURVES

Figure 1  
Typical Forward Characteristics



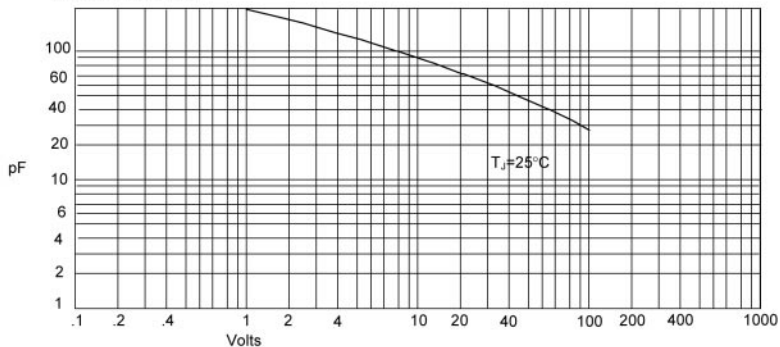
Instantaneous Forward Current - Amperes *versus*  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



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

Figure 3  
Junction Capacitance



Junction Capacitance - pF *versus*  
Reverse Voltage - Volts

# RATINGS AND CHARACTERISTIC CURVES

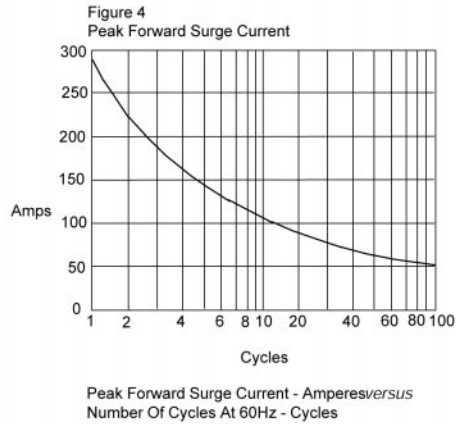
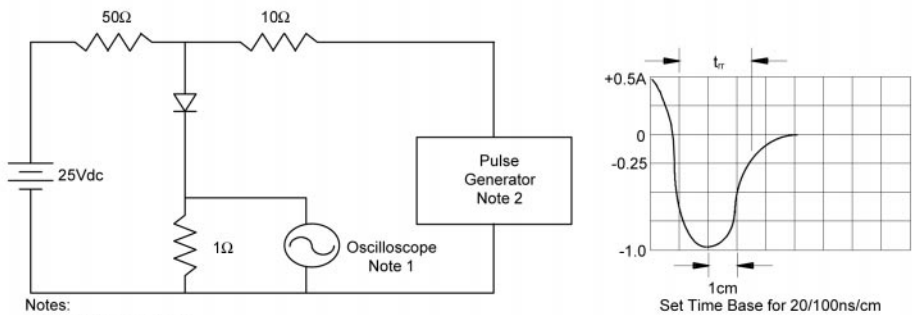


Figure 5  
Reverse Recovery Time Characteristic And Test Circuit Diagram



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