



95 E. Jeffryn Boulevard  
Deer Park, NY 11729  
Tel (631) 595-1818  
Fax (631) 595-1283

## FR601 thru FR607

Fast Recovery Rectifiers  
Reverse Voltage 50 to 1000 Volts Forward Current 6.0 Amperes

### Features

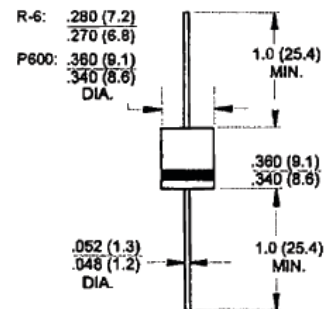
- ◆ Low forward voltage drop
- ◆ High current capability
- ◆ High reliability
- ◆ High surge current capability
- ◆  $T_J$  is 150°C (Max.) and  $T_{STG}$  is 175°C (Max.) with PI glue



R-6 or P600

### Mechanical Data

- ◆ Case: Molded plastic R-6
- ◆ Epoxy: UL 94V-O rate flame retardant
- ◆ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ◆ Polarity: Color band denotes cathode end
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds .375" (9.5mm) lead  
lengths at 5 lbs., (2.3kg) tension
- ◆ Weight: 0.074 ounce, 2.1 grams



Dimensions in inches and (millimeters)

### 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%

| Parameter                                                                                                         | 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              |
| Maximum average forward rectified current<br>0.375" (9.5mm) lead length at $T_A=55^{\circ}\text{C}$               | $I_{AV}$  | 6.0         |       |       |       |       |       |       | Amps               |
| Peak forward surge current, 8.3 ms single<br>half sine-wave superimposed on rated load<br>(JEDEC Method)          | $I_{FSM}$ | 200.0       |       |       |       |       |       |       | Amps               |
| Maximum instantaneous forward voltage @ 6.0A                                                                      | $V_F$     | 1.3         |       |       |       |       |       |       | Volts              |
| Maximum DC reverse current @ $T_A=25^{\circ}\text{C}$<br>at rated DC blocking voltage @ $T_A=100^{\circ}\text{C}$ | $I_R$     | 10.0<br>200 |       |       |       |       |       |       | $\mu\text{A}$      |
| Maximum reverse recovery time (Note 1)                                                                            | $t_r$     | 150         |       |       |       | 250   |       | 500   | nS                 |
| Typical junction capacitance (Note 2)                                                                             | $C_j$     | 100         |       |       |       |       |       |       | pF                 |
| Operating temperature range                                                                                       | $T_J$     | -55 to +125 |       |       |       |       |       |       | $^{\circ}\text{C}$ |
| Storage temperature range                                                                                         | $T_{STG}$ | -55 to +150 |       |       |       |       |       |       | $^{\circ}\text{C}$ |

**Notes:** 1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$   
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

www.surgecomponents.com



95 E. Jeffry Boulevard  
Deer Park, NY 11729  
Tel (631) 595-1818  
Fax (631) 595-1283

## RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

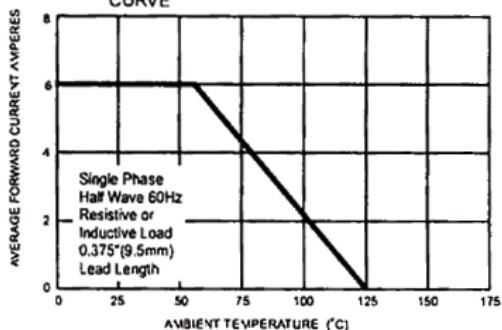


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

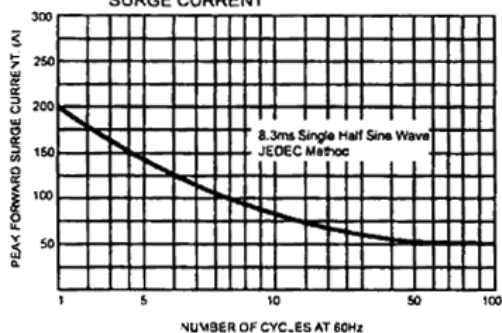


FIG.3- TYPICAL FORWARD CHARACTERISTICS

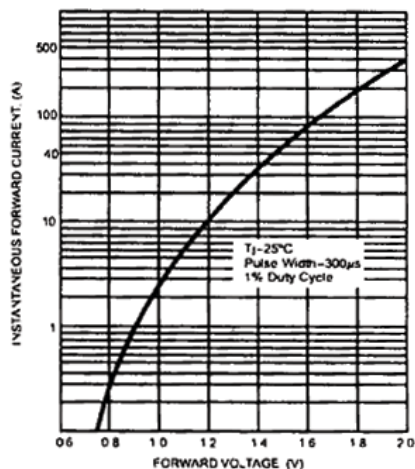


FIG.4- TYPICAL JUNCTION CAPACITANCE

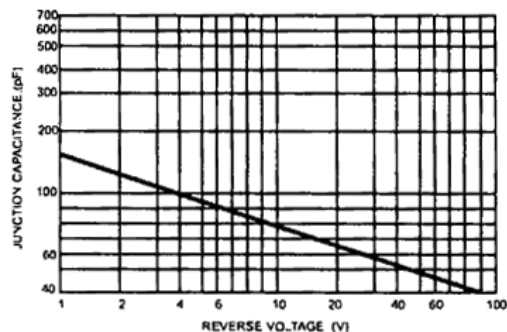


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

