



# FR151S THRU FR157S

## 1.5 AMPS. Fast Recovery Rectifiers



Voltage Range  
50 to 1000 Volts  
Current  
1.5 Amperes

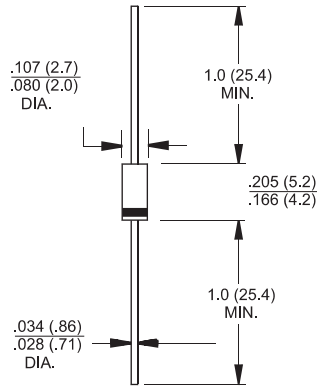
### Features

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

### Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 0.32 gram

### DO-41



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number  | Symbol          | FR 151S     | FR 152S | FR 153S | FR 154S | FR 155S | FR 156S | FR 157S | Units                          |
|--|-----------------|-------------|---------|---------|---------|---------|---------|---------|--------------------------------|
| Maximum Recurrent Peak Reverse Voltage   | $V_{RRM}$       | 50          | 100     | 200     | 400     | 600     | 800     | 1000    | V                              |
| Maximum RMS Voltage  | $V_{RMS}$       | 35          | 70      | 140     | 280     | 420     | 560     | 700     | V                              |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 50          | 100     | 200     | 400     | 600     | 800     | 1000    | V                              |
| Maximum Average Forward Rectified Current .375" (9.5mm) Lead Length @ $T_A = 55^\circ\text{C}$             | $I_{(AV)}$      | 1.5         |         |         |         |         |         |         | A                              |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)         | $I_{FSM}$       | 50          |         |         |         |         |         |         | A                              |
| Maximum Instantaneous Forward Voltage @ 1.5A   | $V_F$           | 1.2         |         |         |         |         |         |         | V                              |
| Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100^\circ\text{C}$ | $I_R$           | 5.0<br>100  |         |         |         |         |         |         | $\mu\text{A}$<br>$\mu\text{A}$ |
| Maximum Reverse Recovery Time ( Note 1 )   | $T_{rr}$        | 150         |         |         | 250     |         | 500     |         | nS                             |
| Typical Junction Capacitance ( Note 2 )  | $C_j$           | 30          |         |         |         |         |         |         | pF                             |
| Typical Thermal Resistance ( Note 3 )  | $R_{\theta JA}$ | 60          |         |         |         |         |         |         | $^\circ\text{C/W}$             |
| Operating Temperature Range  | $T_J$           | -65 to +150 |         |         |         |         |         |         | $^\circ\text{C}$               |
| Storage Temperature Range  | $T_{STG}$       | -65 to +150 |         |         |         |         |         |         | $^\circ\text{C}$               |

Notes:1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.

3. Mount on Cu-Pad Size 10mm x 10mm on P.C.B.

## RATINGS AND CHARACTERISTIC CURVES (FR151S THRU FR157S)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

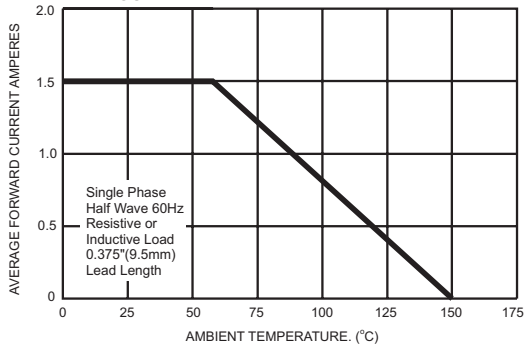


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

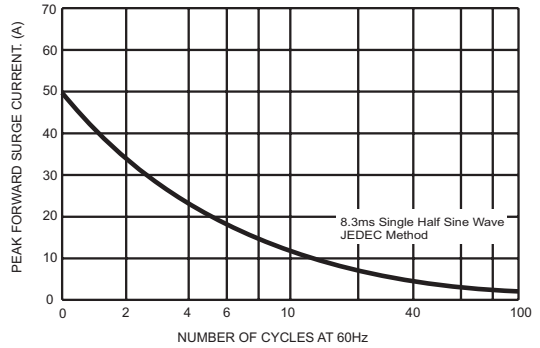


FIG.3- TYPICAL FORWARD CHARACTERISTICS

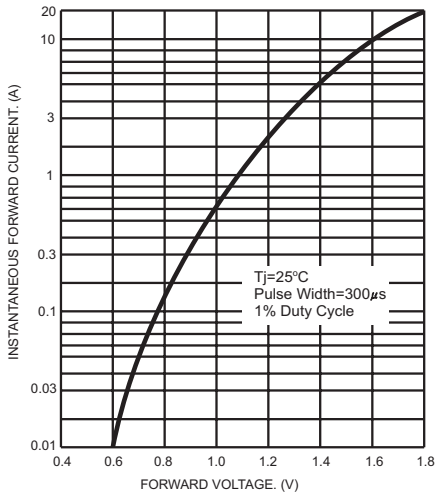


FIG.4- TYPICAL JUNCTION CAPACITANCE

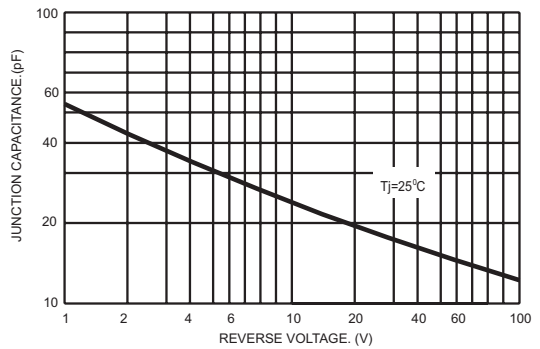
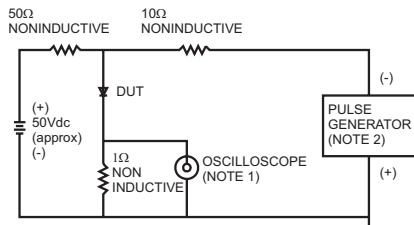


FIG.5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance=1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance=50 ohms

