

**FAST RECOVERY GLASS PASSIVATED RECTIFIER**

**VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.5 Amperes**

**FEATURES**

- \* High reliability
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* Glass passivated junction
- \* High switching capability

**MECHANICAL DATA**

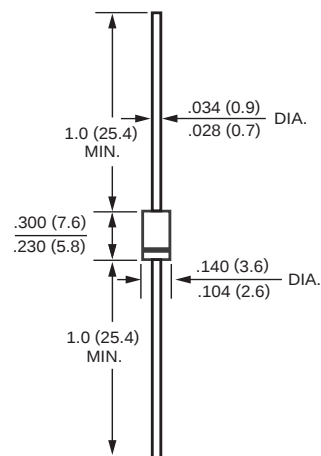
- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-0
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.38 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings 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%.



**DO-15**



**MAXIMUM RATINGS** (At  $T_A = 25^\circ\text{C}$  unless otherwise noted)

| RATINGS                                                                                              | SYMBOL         | FR151G      | FR152G | FR153G | FR154G | FR155G | FR156G | FR157G | UNITS            |
|------------------------------------------------------------------------------------------------------|----------------|-------------|--------|--------|--------|--------|--------|--------|------------------|
| Maximum Recurrent 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>at $T_A = 55^\circ\text{C}$                             | $I_o$          | 1.5         |        |        |        |        |        |        | Amps             |
| Peak Forward Surge Current 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC method) | $I_{FSM}$      | 60          |        |        |        |        |        |        | Amps             |
| Typical Junction Capacitance (Note 2)                                                                | $C_J$          | 20          |        |        |        |        |        |        | pF               |
| Operating and Storage Temperature Range                                                              | $T_J, T_{STG}$ | -55 to +150 |        |        |        |        |        |        | $^\circ\text{C}$ |

**ELECTRICAL CHARACTERISTICS** (At  $T_A = 25^\circ\text{C}$  unless otherwise noted)

| CHARACTERISTICS                                                                                                | SYMBOL   | FR151G | FR152G | FR153G | FR154G | FR155G | FR156G | FR157G | UNITS            |
|----------------------------------------------------------------------------------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|------------------|
| Maximum Instantaneous Forward Voltage at 1.5A DC                                                               | $V_F$    | 1.3    |        |        |        |        |        |        | Volts            |
| Maximum DC Reverse Current<br>at Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$                            | $I_R$    | 5.0    |        |        |        |        |        |        | $\mu\text{Amps}$ |
| Maximum Full Load Reverse Current Average,<br>Full Cycle .375" (9.5mm) lead length at $T_L = 55^\circ\text{C}$ |          | 100    |        |        |        |        |        |        | $\mu\text{Amps}$ |
| Maximum Reverse Recovery Time (Note 1)                                                                         | $t_{rr}$ | 150    |        |        | 250    |        | 500    |        | nSec             |

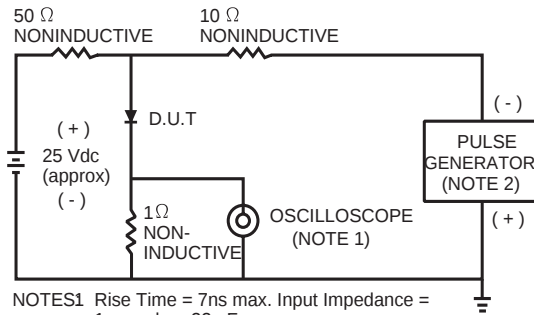
NOTES : 1. Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = -1.0\text{A}$ ,  $I_{RR} = -0.25\text{A}$

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

2002-11

## RATING AND CHARACTERISTIC CURVES ( FR151G THRU FR157G )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES1. Rise Time = 7ns max. Input Impedance = 1 megohm. 22 pF.  
2. Rise Time = 10ns max. Source Impedance = 50 ohms.

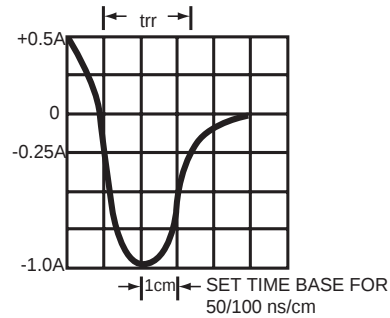


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

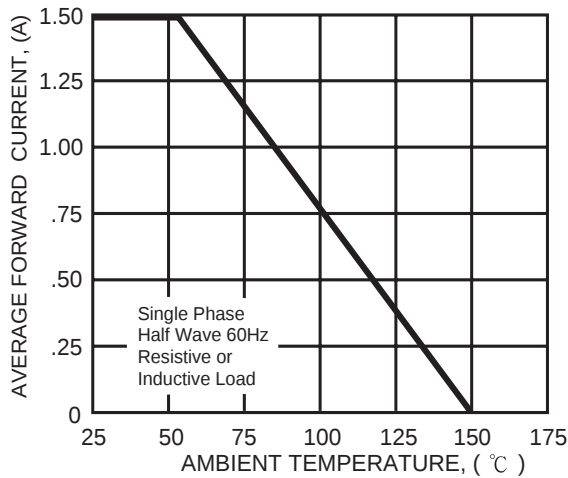


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

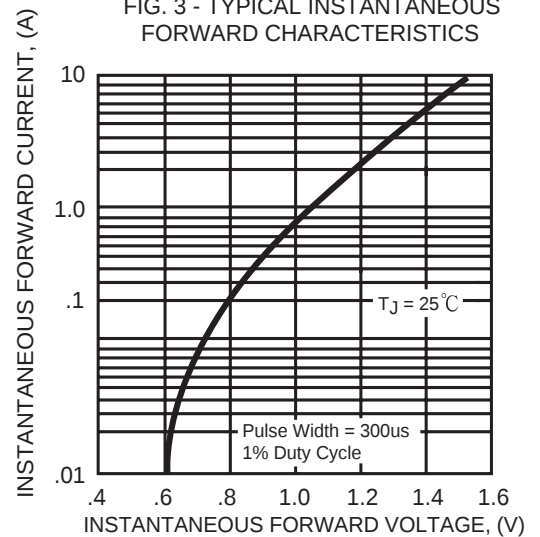


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

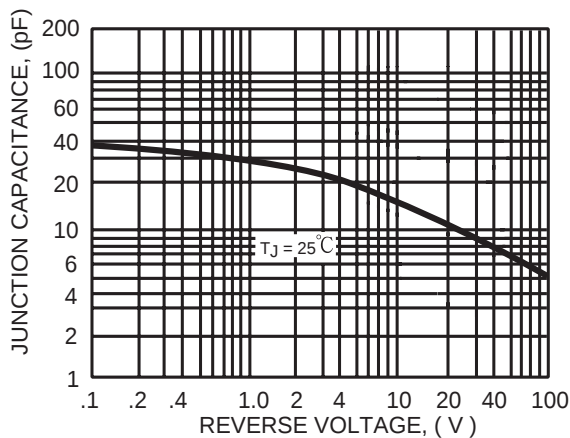


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

