



DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

FR151  
THRU  
FR157

TECHNICAL SPECIFICATIONS OF FAST RECOVERY RECTIFIER

VOLTAGE RANGE - 50 to 1000 Volts

CURRENT - 1.5 Ampere

FEATURES

- \* Fast switching
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* High current surge
- \* High reliability

MECHANICAL DATA

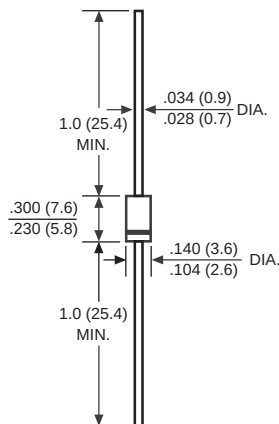
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rated flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.38 gram approx.

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



Dimensions in inches and (millimeters)

|                                                                                                      | SYMBOL   | FR151       | FR152 | FR153 | FR154 | FR155 | FR156 | FR157 | UNITS |
|------------------------------------------------------------------------------------------------------|----------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                               | VRRM     | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | Volts |
| Maximum RMS Voltage                                                                                  | VRMS     | 35          | 70    | 140   | 280   | 420   | 560   | 700   | Volts |
| Maximum DC Blocking Voltage                                                                          | VDC      | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | Volts |
| Maximum Average Forward Rectified Current<br>at TA = 55°C                                            | Io       | 1.5         |       |       |       |       |       |       | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC Method) | IFSM     | 60          |       |       |       |       |       |       | Amps  |
| Maximum Instantaneous Forward Voltage at 1.0A DC                                                     | VF       | 1.3         |       |       |       |       |       |       | Volts |
| Maximum DC Reverse Current<br>at Rated DC Blocking Voltage TA=25°C                                   | IR       | 5.0         |       |       |       |       |       |       | μAmps |
| Maximum Full Load Reverse Current Average, Full Cycle<br>.375"(9.5mm) lead length at T L = 55°C      |          | 100         |       |       |       |       |       |       |       |
| Maximum Reverse Recovery Time (Note 1)                                                               | trr      | 150         |       |       |       | 250   | 500   |       | nSec  |
| Typical Junction Capacitance (Note 2)                                                                | Cj       | 40          |       |       |       |       |       |       | pF    |
| Operating and Storage Temperature Range                                                              | TJ, TSTG | -65 to +150 |       |       |       |       |       |       | °C    |

NOTES : 1. Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A

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

# RATING AND CHARACTERISTIC CURVES (FR151 THRU FR157)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

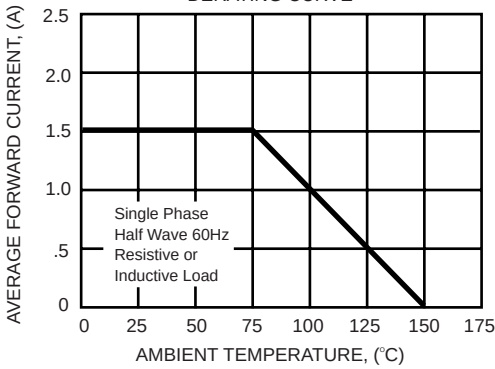


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

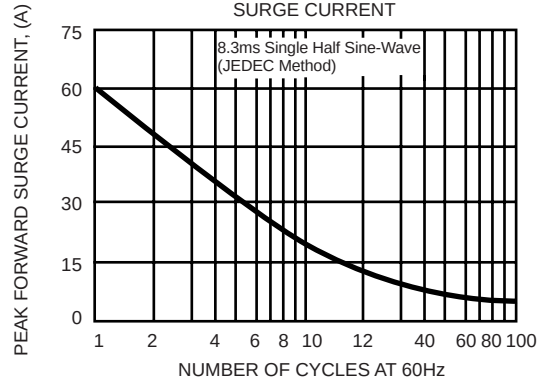


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

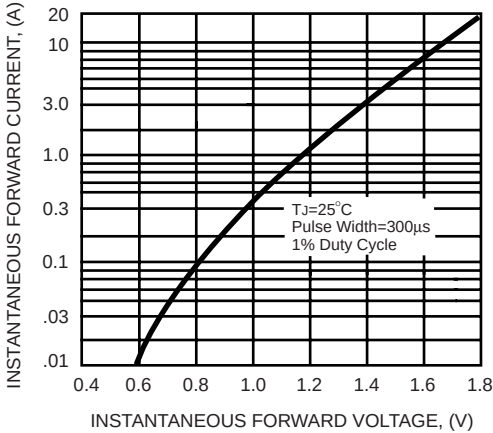


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

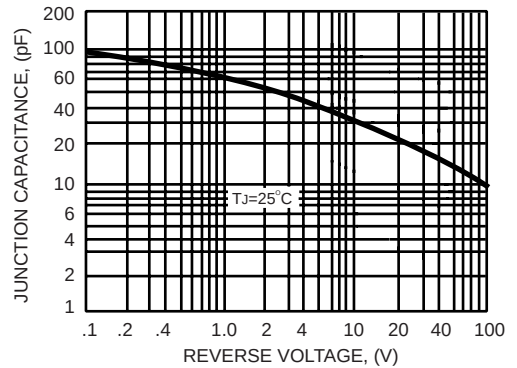
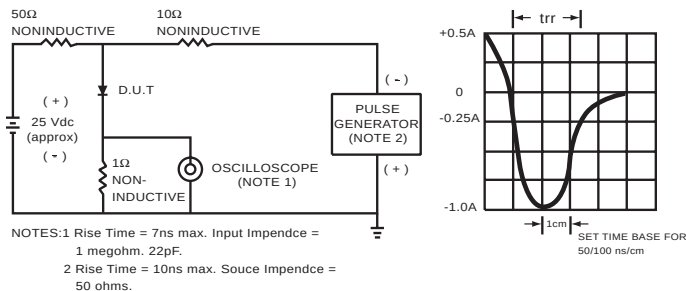


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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