



## FAST RECOVER RECTIFIER

FR151 THRU FR157

VOLTAGE RANGE  
CURRENT

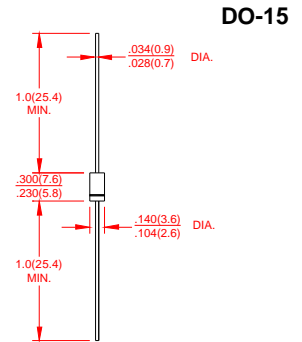
50 to 1000 Volts  
1.5 Ampere

### FEATURES

- Low coat construction
- Fast switching for high efficiency.
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 secods/.375”(9.5mm)lead length at 5 lbs(2.3kg) tension

### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V-O rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.012 ounce, 0.33 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%

	SYMBOLS	FR 151	FR 152	FR 153	FR 154	FR 155	FR 156	FR 157	UNITS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	75	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 0.375”(9.5mm) lead length at $T_A=75^\circ\text{C}$	$I_{(AV)}$	1.5							Amp
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	60							Amps
Maximum Instantaneous Forward Voltage @ 1.5A	$V_F$	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	200							
Maximum Reverse Recovery Time (Note 3) $T_J=25^\circ\text{C}$	$t_{rr}$	150				250	500		ns
Typical Junction Capacitance (Note 1)	$C_J$	25							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	50							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	(-55 to +150)							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-55 to +150)							$^\circ\text{C}$

#### Notes:

- 1.Measured at 1.0MHz and Applied Reverse Voltage of 4.0Volts.
- 2 Thermal Resistance from junction to Ambient at .375”(9.5mm)lead length, P.C.board mounted.
- 3.Reverse Recovery Test Conditions: $I_f=0.5\text{A}, I_r=1.0\text{A}, I_{rr}=0.25\text{A}$



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## RATING AND CHARACTERISTIC CURVES FR151 THRU FR157

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

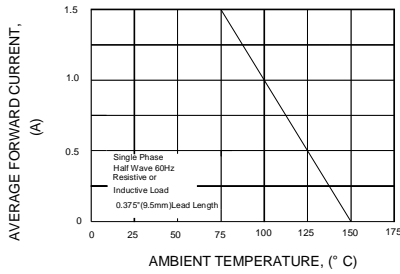


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

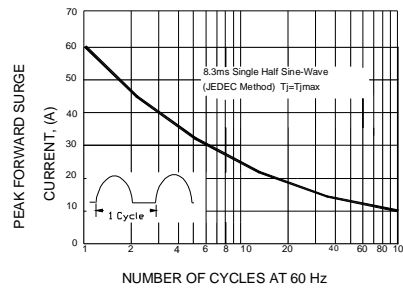


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

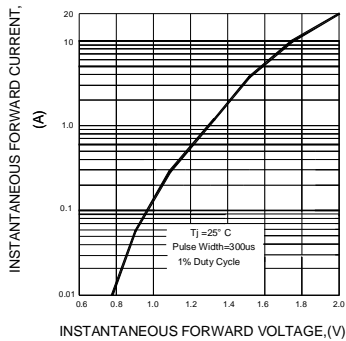


FIG.4-TYPICAL REVERSE CHARACTERISTICS

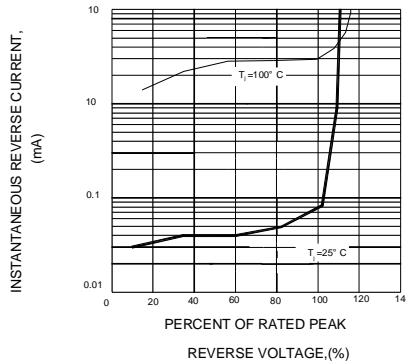


FIG.5-TYPICAL JUNCTION CAPACITANCE

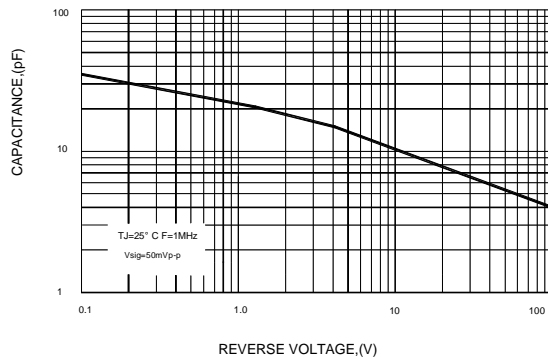
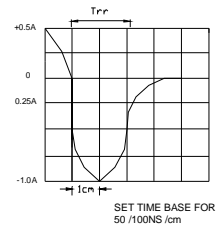
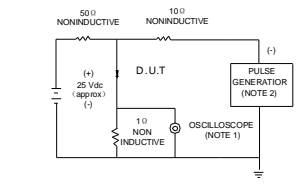


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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