



FAST RECOVERY RECTIFIER

VOLTAGE RANGE-50 to 1000 Volts CURRENT-1.5 Amperes

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 rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.38 gram

DO-15

Dimensions in inches and (millimeters)

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%.

MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	FR151	FR152	FR153	FR154	FR155	FR155P	FR156	FR157	FR157P	UNITS	
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	200	400	600	600	800	1000	1000	Volts	
Maximum RMS Voltage	V _{RMS}	35	70	140	280	420	420	560	700	700	Volts	
Maximum DC Blocking Voltage	V _{DC}	50	100	200	400	600	600	800	1000	1000	Volts	
Maximum Average Forward Rectified Current .375" (9.5mm) lead length at T _A = 75°C	I _O	1.5										Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I _{FSM}	60										Amps
Typical Junction Capacitance (Note 2)	C _J	40										pF
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150										°C

ELECTRICAL CHARACTERISTICS (At T_A = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	FR151	FR152	FR153	FR154	FR155	FR155P	FR156	FR157	FR157P	UNITS	
Maximum Instantaneous Forward Voltage at 1.5A DC	V _F	1.3										Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T _A = 25°C	I _R	5.0										μAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T _L = 55°C	I _R	100										μAmps
Maximum Reverse Recovery Time (Note 1)	t _{rr}	150			250		150	500		250	nSec	

NOTES: 1. Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATING AND CHARACTERISTIC CURVES (FR151 THRU FR157)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

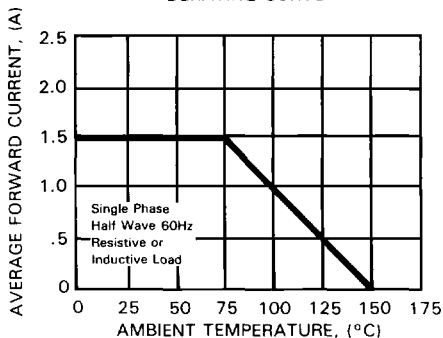


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

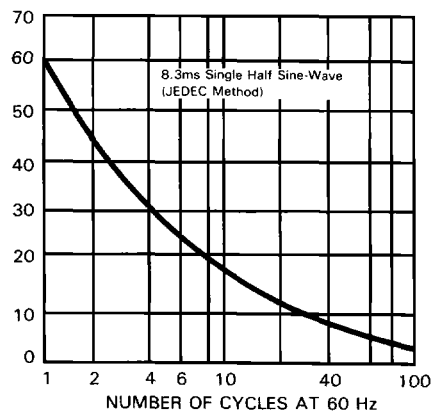


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

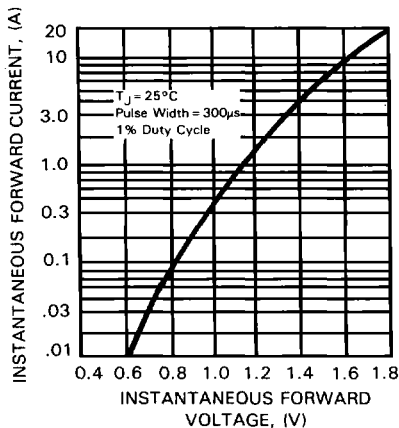


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

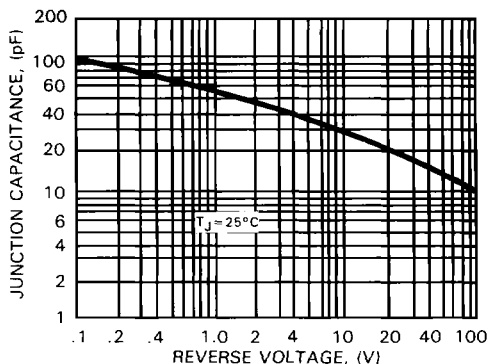
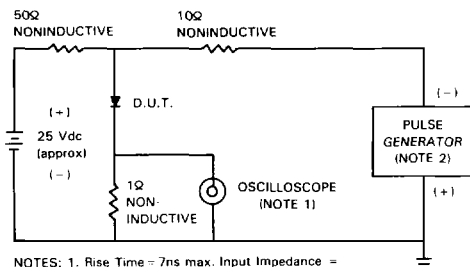


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



- NOTES: 1. Rise Time = 7ns max. Input Impedance = 1 megohm. 22pF.
2. Rise Time = 10ns max. Source Impedance \approx 50 ohms.

