RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

FR251 THRU FR257

FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 2.5 Amperes

FEATURES

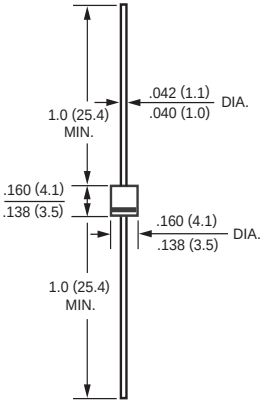
* Fast switching
* Low leakage
* Low forward voltage drop
* High current capability
* High current surge
* High reliability

MECHANICAL DATA

* Case: Molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.54 gram



R-3



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	FR251	FR252	FR253	FR254	FR255	FR255P	FR256	FR257	FR257P	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 at T_A= 75°C	I_O	2.5									Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	150									Amps
Typical Junction Capacitance (Note 2)	C_J	60									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	FR251	FR252	FR253	FR254	FR255	FR255P	FR256	FR257	FR257P	UNITS
Maximum Instantaneous Forward Voltage at 2.5A DC	V_F	1.3									Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	5.0									uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at T_L = 55°C		100									uAmps
Maximum Reverse Recovery Time (Note 1)	trr	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 (FR251 THRU FR257)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

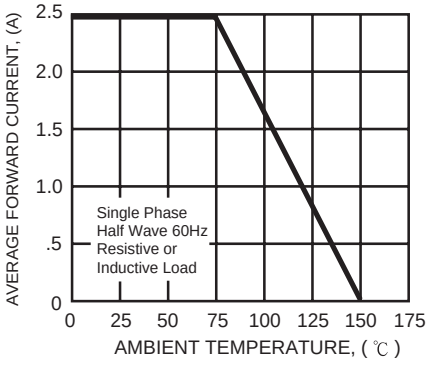


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

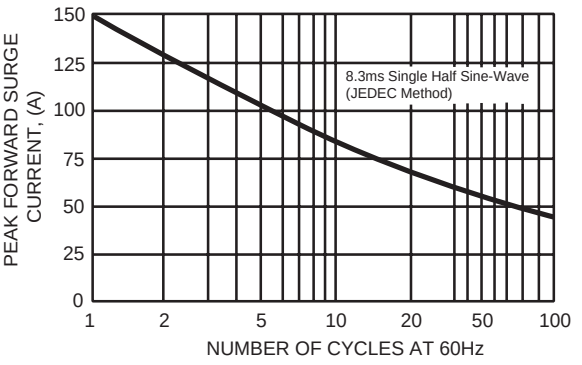


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

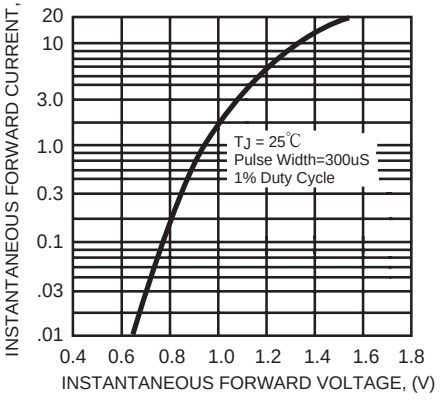


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

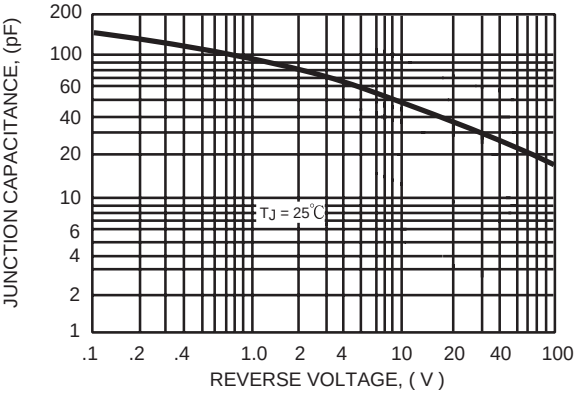
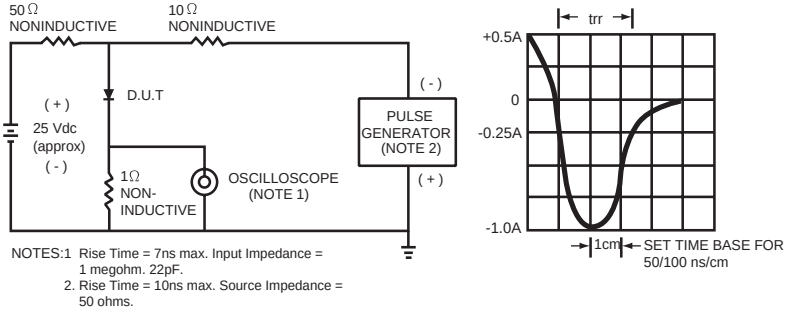


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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