RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

FR101 THRU FR107

FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

FEATURES

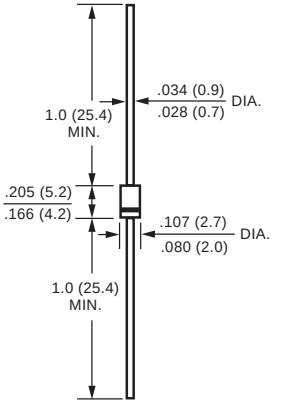
* Fast switching
* Low leakage
* Low forward voltage drop
* High current capability
* High surge capability
* High reliability

MECHANICAL DATA

* Case: Molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.33 gram



DO-41



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	FR101	FR102	FR103	FR104	FR105	FR105P	FR106	FR107	FR107P	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	400	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	1.0									Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30									Amps
Typical Junction Capacitance (Note 2)	C_J	15									pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150									°C

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

CHARACTERISTICS	SYMBOL	FR101	FR102	FR103	FR104	FR105	FR105P	FR106	FR107	FR107P	UNITS
Maximum Instantaneous Forward Voltage at 1.0A 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 Full Cycle Average, .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

2002-11

RATING AND CHARACTERISTIC CURVES (FR101 THRU FR107)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

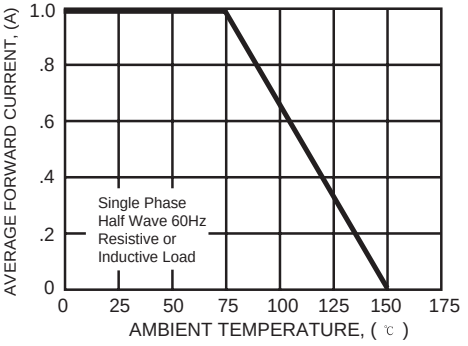


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

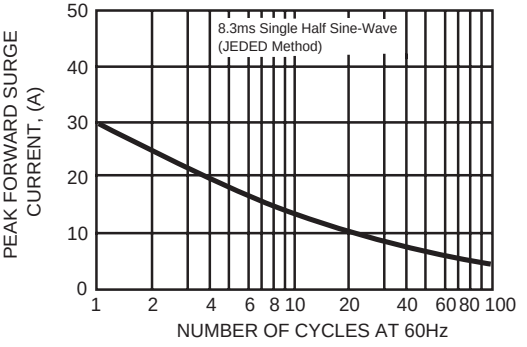


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

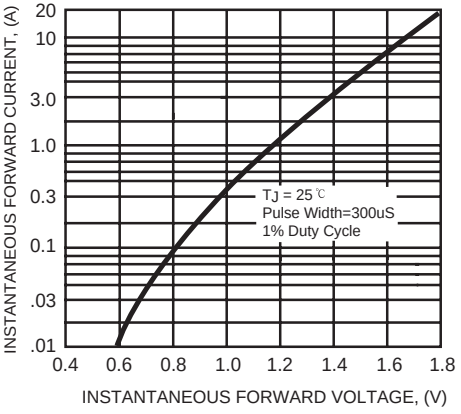


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

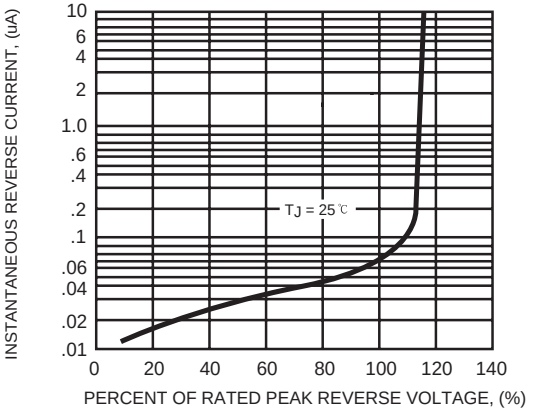


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

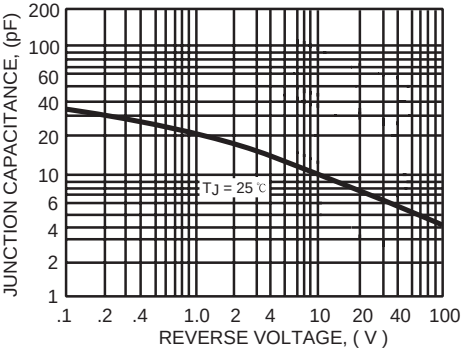
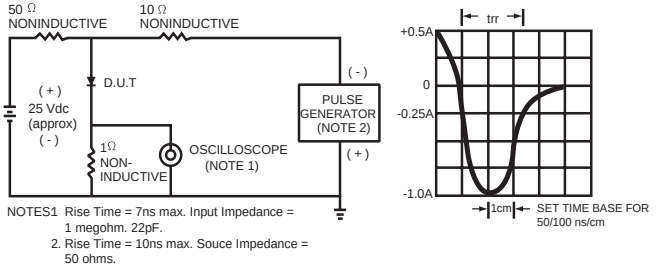


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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