

RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

FR301
THRU
FR307

FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Amperes

FEATURES

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

MECHANICAL DATA

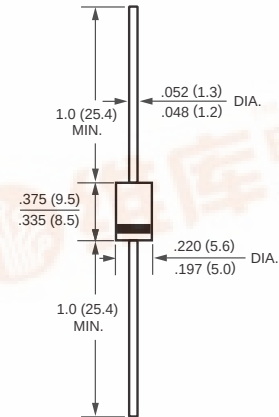
- * Case: Molded plastic
- * Epoxy: Device has UL flammability classification 94V-O
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 1.18 grams

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-201AD



Dimensions in inches and (millimeters)

MAXIMUM RATINGS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

RATINGS	SYMBOL	FR301	FR302	FR303	FR304	FR305	FR305P	FR306	FR307	FR307P	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 $T_A = 75^\circ\text{C}$	I_o	3.0									Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	200									Amps
Typical Junction Capacitance (Note 2)	C_J	65									pF
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 150									$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

CHARACTERISTICS	SYMBOL	FR301	FR302	FR303	FR304	FR305	FR305P	FR306	FR307	FR307P	UNITS
Maximum Instantaneous Forward Voltage at 3.0A DC	V_F	1.3									Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$	I_R	10									uAmps
Maximum Full Load Reverse Current Average, Full Cycle, 3.75" (9.5mm) lead length at $T_L = 55^\circ\text{C}$		150									uAmps
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 (FR301 THRU FR307)

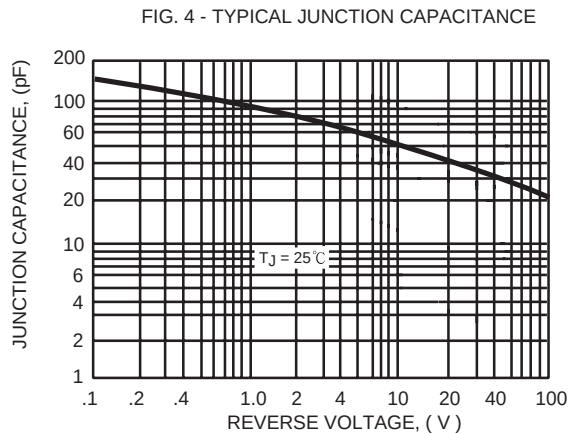
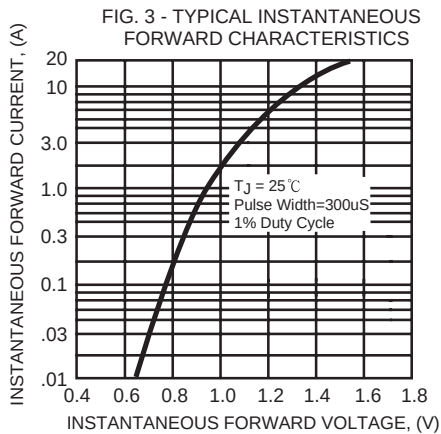
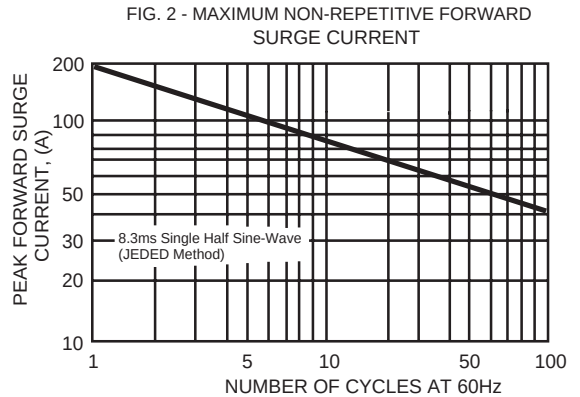
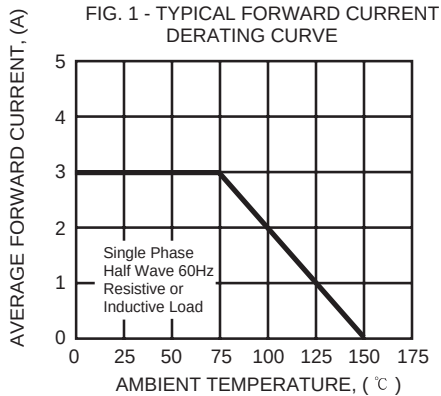
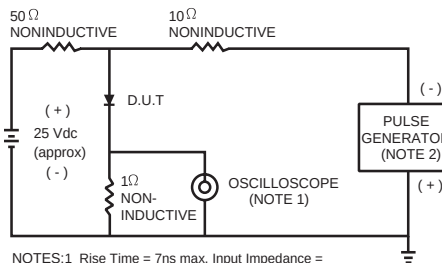


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

