

### TECHNICAL SPECIFICATIONS OF 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

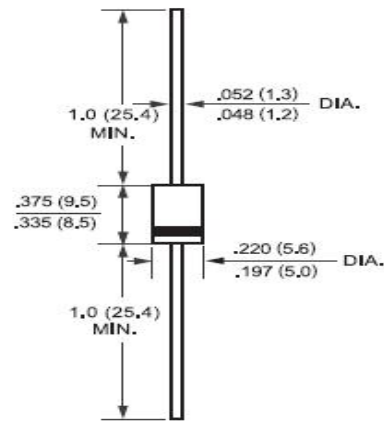
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Mounting position: Any
- \* Weight: 1.18 grams

#### 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-27



Dimensions in inches and (millimeters)

	SYMBOL	FR301	FR302	FR303	FR304	FR305	FR306	FR307	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at T <sub>A</sub> = 75°C	I <sub>O</sub>	3.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	200							Amps
Maximum Instantaneous Forward Voltage at 3.0A DC	V <sub>F</sub>	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T <sub>A</sub> = 25°C	I <sub>R</sub>	10							uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375*(9.5mm) lead length at T <sub>L</sub> = 55°C		150							uAmps
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	150			250	500		nSec	
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	65							pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to + 150							°C

NOTES : 1. Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A  
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

## RATING AND CHARACTERISTIC CURVES ( FR301 THRU FR307 )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

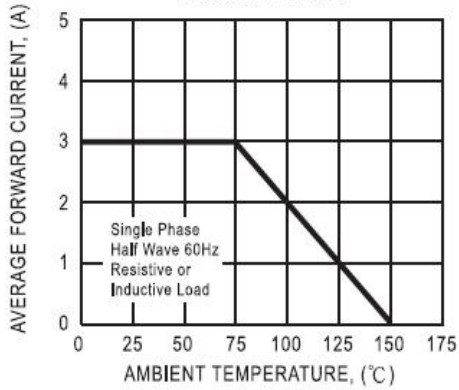


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

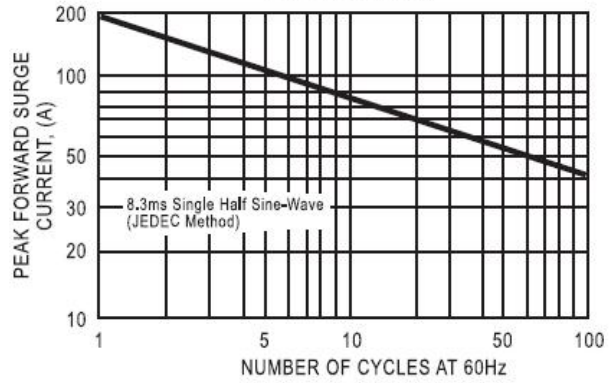


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

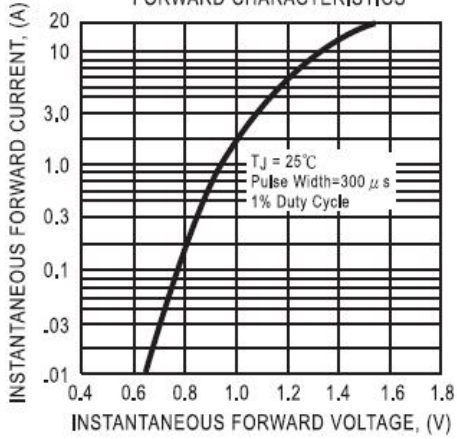


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

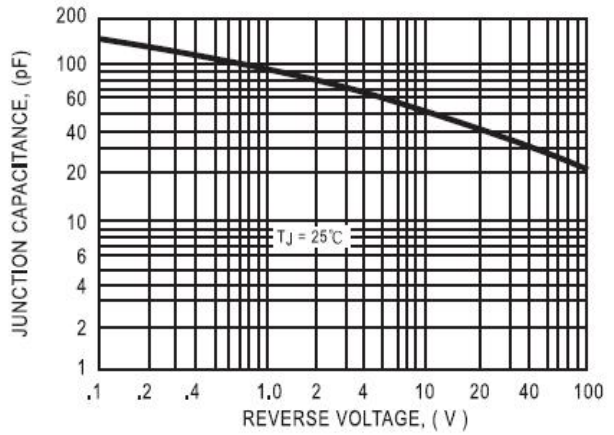
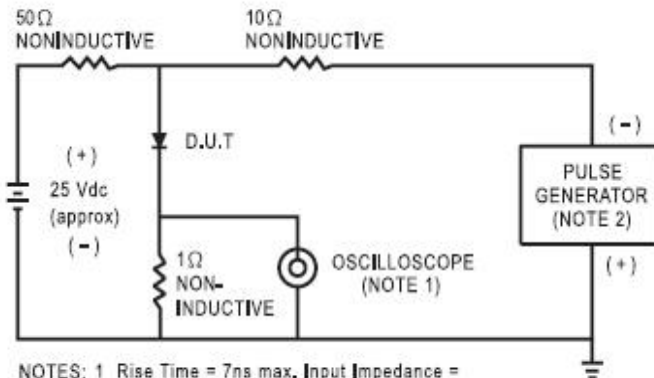


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

