



# FR101 - FR107

# FAST RECOVERY RECTIFIER

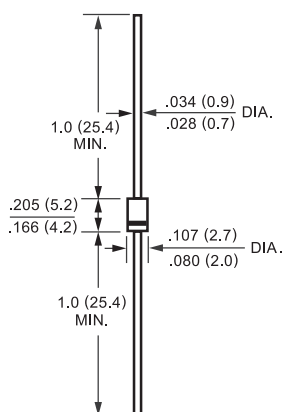
VOLTAGE RANGE - 50 to 1000 Volts CURRENT - 1.0 Ampere

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Mounting position: Any
- \* Weight: 0.33 gram

## FEATURES

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



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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%.

PARAMETER	SYMBOL	FR101	FR102	FR103	FR104	FR105	FR106	FR107	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current $T_A = 75^\circ\text{C}$	$I_o$	1.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave Superimposed on rated load (JEDEC Method)	$I_{FSM}$	30							Amps
Maximum Instantaneous Forward Voltage at 1.0A DC	$V_F$	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$	$I_R$	5.0							uAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at $T_L = 55^\circ\text{C}$		100							uAmps
Typical Junction Capacitance ( Note 1 )	$C_J$	15							pF
Maximum Reverse Recovery Time ( Note 2 )	$T_{rr}$	150	150	150	150	250	500	500	nSec
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150							$^\circ\text{C}$

NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4 Volts  
2. Test Conditions:  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{RR} = 0.25A$



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## RATING AND CHARACTERISTIC CURVES

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

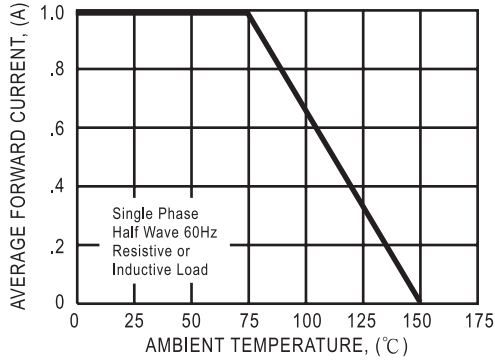


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

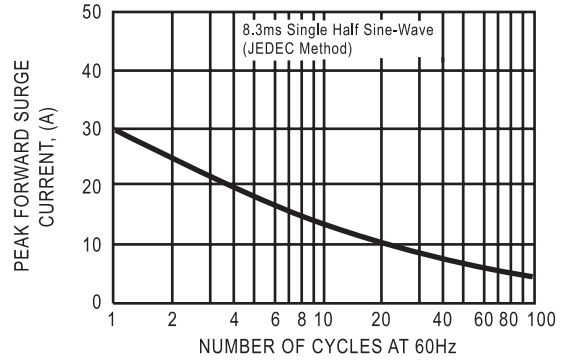


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

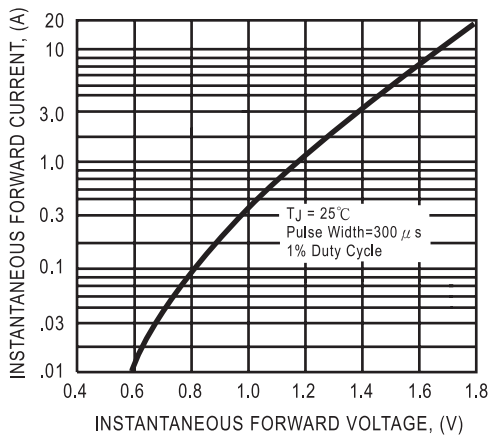


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

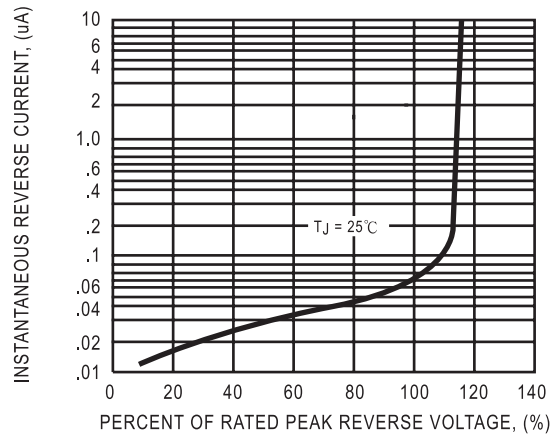


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

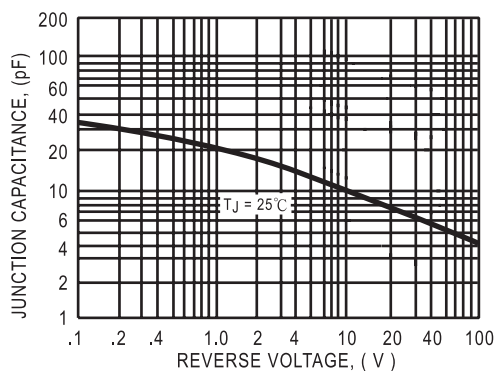
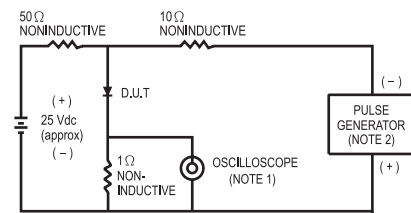


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

