

# FR301 thru FR307

## FAST SWITCHING RECTIFIER

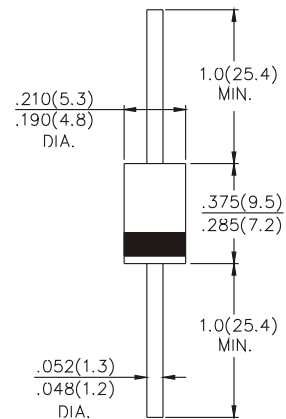


**CHENG-YI  
ELECTRONIC**



VOLTAGE RANGE 50 TO 1000 Volts  
CURRENT 3.0 Amperes

### DO-201AD



Dimensions in inches and (millimeters)

#### FEATURE

- Low forward voltage
- High current capability
- Low leakage current
- High surge capability
- Low cost

#### MECHANICAL DATA

- Case: Mold plastic use UL 94V-0 recognized flame retardant epoxy
- Terminals: Axial leads, solderable per MIL-STD-202, method 208
- Polarity: Color band denotes cathode
- Mounting Position: Any

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

	FR301	FR302	FR303	FR3104	FR305	FR306	FR307	UNITS
Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current, .375", (9.5mm) Lead Length at $T_A = 55^\circ\text{C}$	3.0							A
Peak Forward Surge Current 8.3 ms single half sine-wave	150							A
Maximum Forward Voltage at 3.0A Peak	1.3							V
Maximum Full Load Reverse Current, Full Cycle Average, .375", (9.5mm) Lead Length $T_A = 55^\circ\text{C}$	50							$\mu\text{A}$
Maximum DC Reverse Current, at Rated DC Blocking Voltage	5							$\mu\text{A}$
Maximum Reverse Recovery Time (Note 1)	150	150	150	150	250	500	500	nS
Typical Junction Capacitance (Note 2)	65							pF
Operating and Storage Temperature Range	-65 to +175							$^\circ\text{C}$

Notes : 1. Reverse Recovery Test Conditions :  $I_F = .5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = .25\text{A}$   
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.

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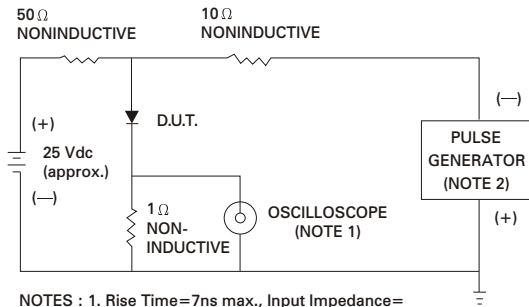
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### RATING AND CHARACTERISTICS CURVES FR301 THRU FR307

Fig. 1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

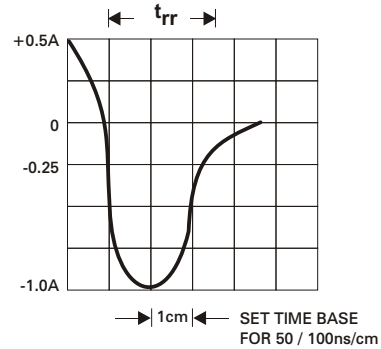


Fig. 2 - FORWARD CURRENT DERATING CURVE

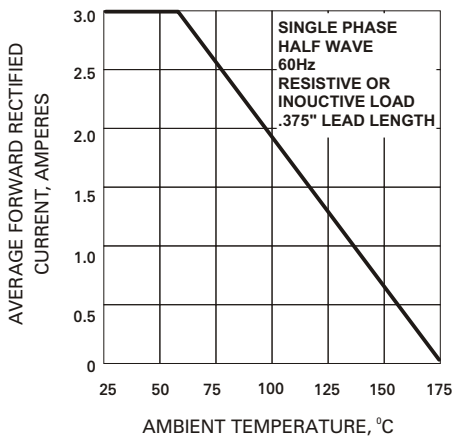


Fig. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

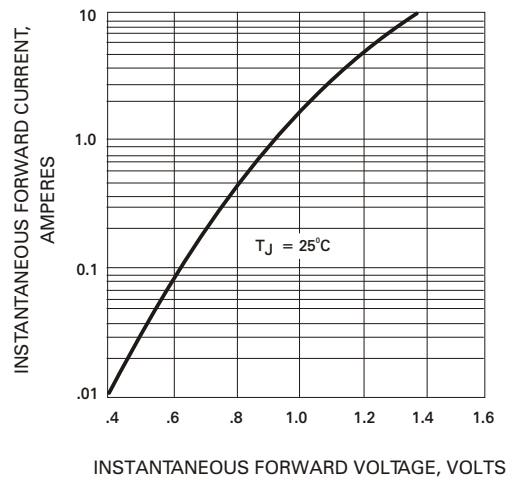


Fig. 4 - TYPICAL JUNCTION CAPACITANCE

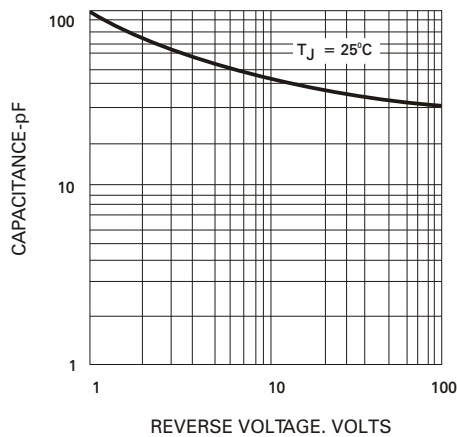


Fig. 5 - PEAK FORWARD SURGE CURRENT

