

# SF51 thru SF56

## SUPER FAST RECTIFIER



**CHENG-YI  
ELECTRONIC**



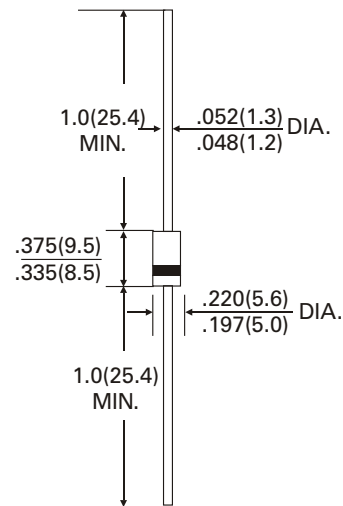
### FEATURES

- High reliability
- Low leakage
- Low forward voltage
- High current capability
- Super fast switching speed
- High surge capability
- Good for switching mode circuit

### MECHANICAL DATA

- Case: Molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Lead: MIL-STD-202E method 208C quaranted
- Mounting position: Any
- Weigh: 1.18 grams

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VOLTAGE RANGE-50 to 400 Volts  
CURRENT-5.0 Amperese



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Signle phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

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

RATINGS	SYMBOL	SF51	SF52	SF53	SF54	SF55	SF56	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	Volts
Maximum Average Forward Rectified Current .375" (9.5mm) lead length @ $T_A=55^\circ\text{C}$	$I_o$	5.0						Amps
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150						Amps
Typical Junction Capacitance (Note 2)	$C_J$	50				30		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	SF51	SF52	SF53	SF54	SF55	SF56	UNITS
Maximum Instantaneous Forward Voltage at 5.0A DC	$V_F$	0.95				1.25		Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@ $T_A=25^\circ\text{C}$	5.0						$\mu\text{Amps}$
	@ $T_A=150^\circ\text{C}$	150						$\mu\text{Amps}$
Maximum Reverse Recovery Time (Note 1)	$t_{rr}$	35						nSec

Notes : 1. Test Condition:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

# SF51 thru SF56

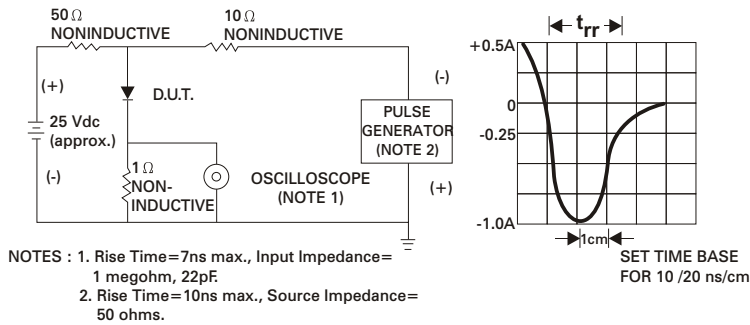
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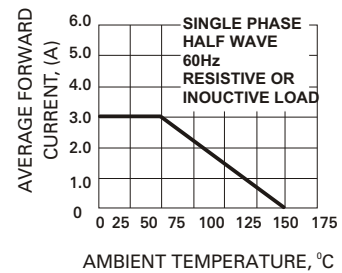
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### RATING AND CHARACTERISTICS CURVES SF51 THRU SF56

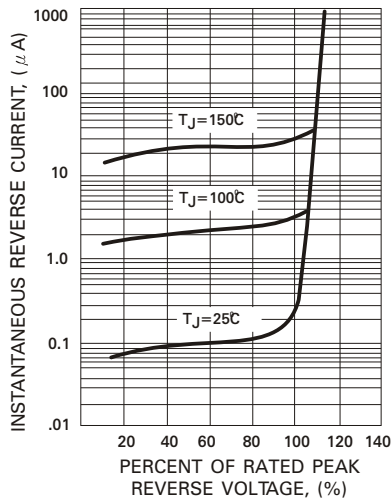
**Fig.1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



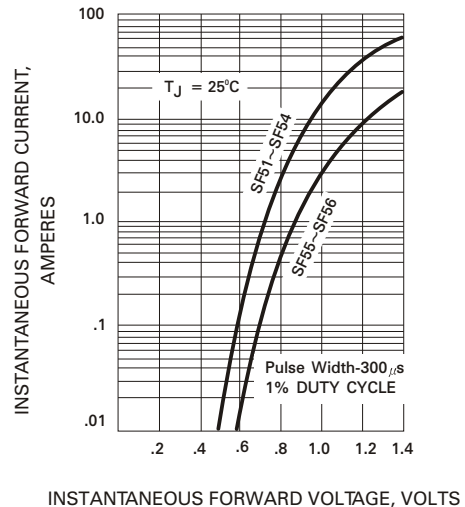
**Fig. 2 - TYPICAL FORWARD CURRENT DERATING CURVE**



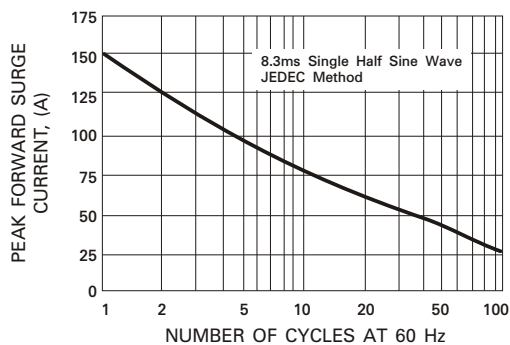
**Fig.3 - TYPICAL REVERSE CHARACTERISTICS**



**Fig. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**Fig.5 -MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**Fig.6 - TYPICAL JUNCTION CAPACITANCE**

