



# SUPER FAST RECTIFIER

## SF51 THRU SF58

VOLTAGE RANGE  
CURRENT

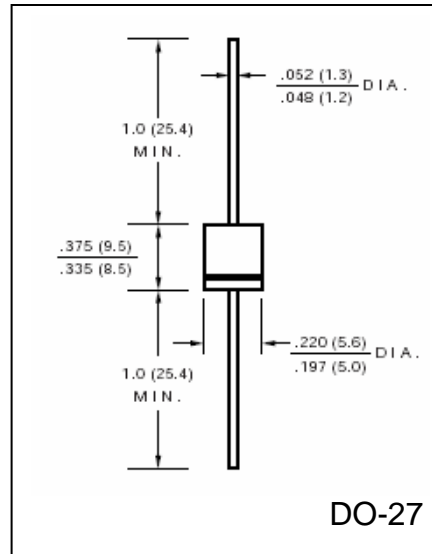
50 to 600 Volts  
5.0 Ampere

### FEATURES

- Super fast switching speed
- Low power loss, high efficiency
- Low Leakage
- High Surge Capacity
- High Temperature soldering guaranteed:
- 260°C / 10 second, 0.375" (9.5mm) lead length

### MECHANICAL DATA

- Case: Transfer molded plastic
- Epoxy: UL94V – 0 rate flame retardant
- Polarity: Color Band denotes cathode end
- Lead: Plated axial lead, solderable per MIL – STD-202E Method 208C
- Mounting Position: Any
- Weight: 0.042 ounce, 1.19 gram



### 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%

	SYMBOLS	SF51	SF52	SF53	SF54	SF55	SF56	SF57	SF58	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	500	600	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	350	420	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	500	600	Volts
Maximum Average Forward Rectified Current, 0.375" (9.5mm) lead length at $T_A = 55^\circ C$ (Note 1)	$I_{(AV)}$	5.0								Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150								Amps
Maximum Instantaneous Forward Voltage @ 5.0A	$V_F$	0.95				1.25				Volts
Maximum DC Reverse Current at Rated $T_A = 25^\circ C$	$I_R$	5.0								$\mu A$
DC Blocking Voltage per element $T_A = 125^\circ C$		150								
Maximum Reverse Recovery Time Test conditions $I_F = 0.5A$ , $I_R = 1.0A$ , $I_{RR} = 0.25A$	$t_{rr}$	35								nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	50				30				pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	30								$^\circ C/W$
Operating Junction Temperature Range	$T_J$	(-65 to +150)								$^\circ C$
Storage Temperature Range	$T_{STG}$	(-65 to +150)								$^\circ C$

### Notes:

1. Thermal resistance from junction to ambient with 0.375" (9.5mm) lead length, PCB mounted



# RATINGS AND CHARACTERISTIC CURVES SF51 THRU SF58

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

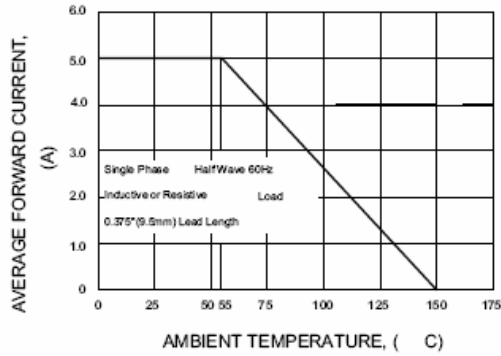


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

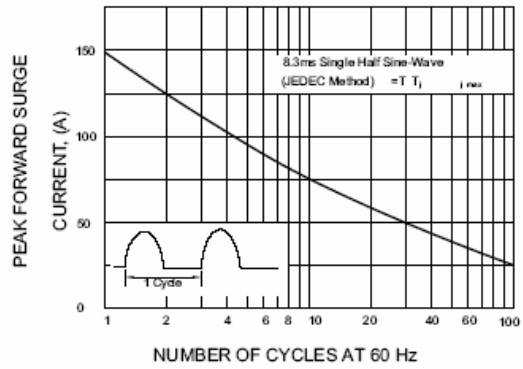


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

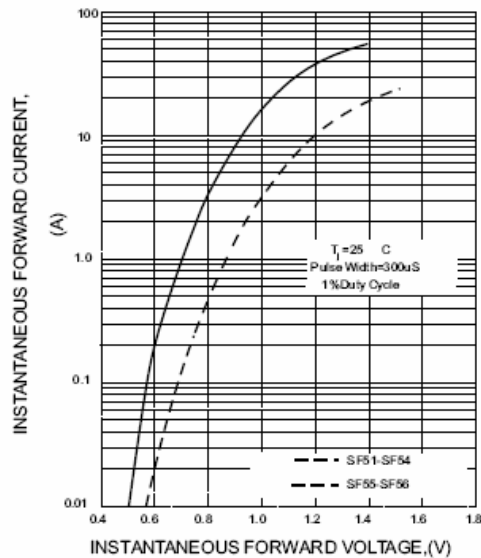


FIG.4-TYPICAL REVERSE CHARACTERISTICS

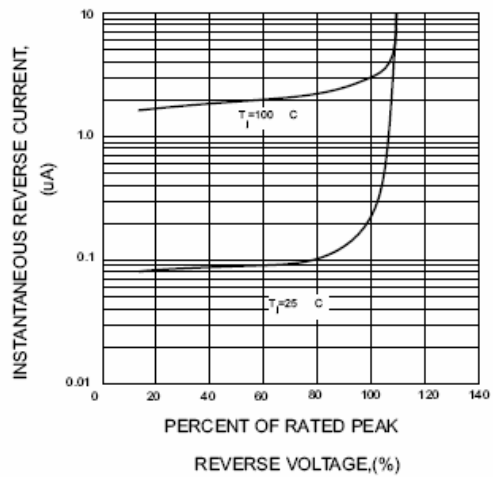


FIG.5-TYPICAL JUNCTION CAPACITANCE

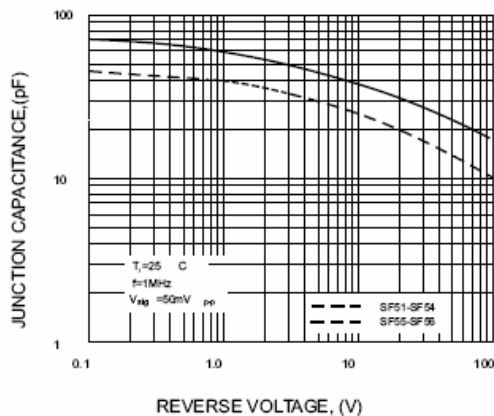


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

