SF81 THRU SF88

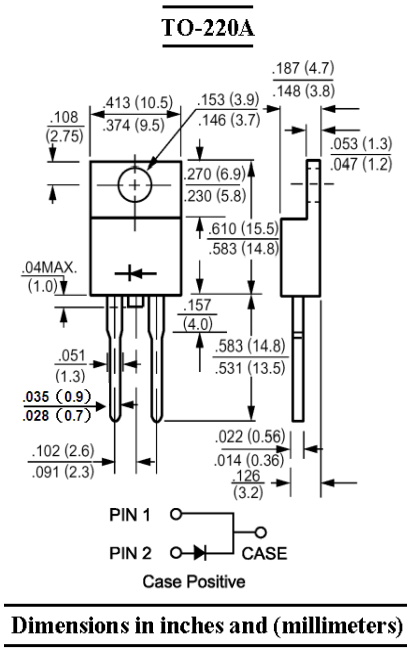
Glass Passivated Super Fast Rectifier
Reverse Voltage - 50 to 600 V
Forward Current - 8 A

Features

- Low forward voltage drop
- Low reverse leakage current
- Superfast switching time for high efficiency
- High current capability
- High surge current capability

Mechanical Data

- Case: Molded plastic, TO-220A
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: leads solderable per MIL-STD-202 method 208 guaranteed
- Polarity: As marked
- Mounting Position: Any



Dimensions in inches and (millimeters)

Absolute Maximum Ratings and 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	Symbols	SF81	SF82	SF83	SF84	SF85	SF86	SF87	SF88	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at T_C = 100 °C	$I_{(AV)}$	8								A
Peak Forward Surge Current 8.3 ms Single half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	125								A
Maximum Forward Voltage at 8 A and 25 °C	V_F	0.95			1.3		1.7			V
Maximum Reverse Current at T_A = 25 °C at Rated DC Blocking Voltage T_A = 125 °C	I_R	10 500								μA
Typical Junction Capacitance [1]	C_J	80			60					pF
Maximum Reverse Recovery Time [2]	t_{rr}	35			50					ns
Typical Thermal Resistance [3]	$R_{\theta JC}$	2.2								°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150								°C

[1] Measured at 1 MHz and applied reverse voltage of 4 V.
[2] Reverse recovery test conditions: I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A
[3] Thermal resistance from Junction to case mounted on heatsink.

RATINGS AND CHARACTERISTIC CURVES

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

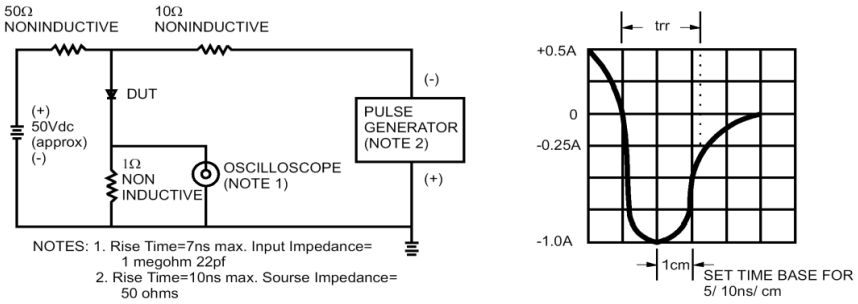


FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

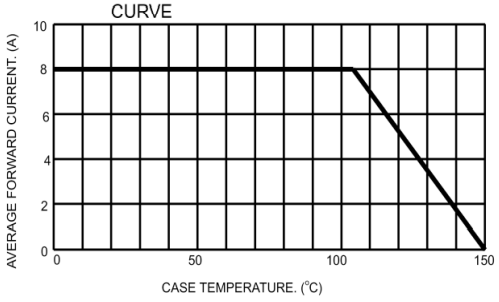


FIG.3- TYPICAL REVERSE CHARACTERISTICS

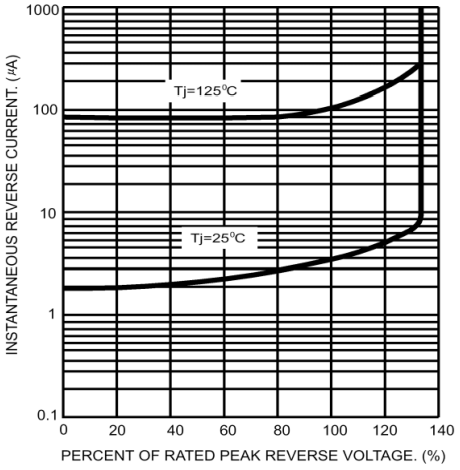


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

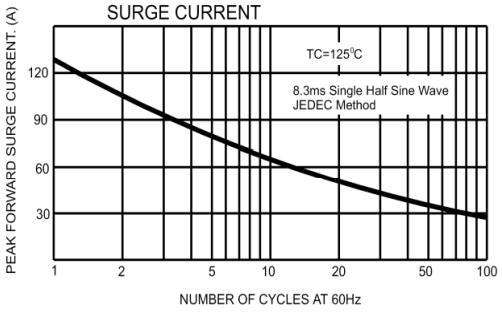


FIG.5- TYPICAL JUNCTION CAPACITANCE

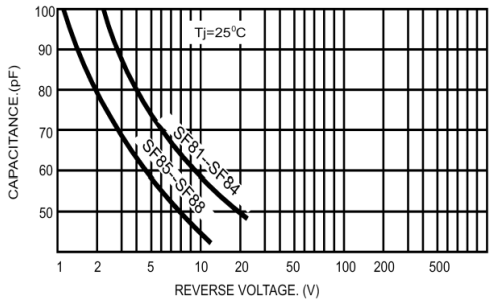


FIG.6- TYPICAL FORWARD CHARACTERISTICS