

Switchmode Power Rectifiers

... Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following features:

- * High Surge Capacity
- * Low Power Loss, High efficiency
- * Glass Passivated chip junctions
- * 150 °C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction
- * Low Forward Voltage , High Current Capability
- * Ultrafast 50 & 75 Nanosecond Recovery Time
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**ULTRA FAST
RECTIFIERS**

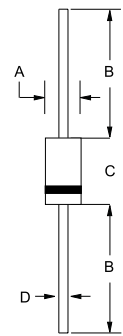
**5.0 AMPERES
500-1000 VOLTS**



DO-201AD

MAXIMUM RATINGS

Characteristic	Symbol	SF57	SF58	SF59	SF510	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	500	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	350	420	560	700	V
Average Rectifier Forward Current	I_o	5.0				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	75				A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	- 65 to + 150				°C



DIM	MILLIMETERS	
	MIN	MAX
A	5.00	5.60
B	25.40	---
C	8.50	9.50
D	1.20	1.30

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	SF57	SF58	SF59	SF510	Unit
Maximum Instantaneous Forward Voltage ($I_F=5.0$ Amp, $T_c = 25\text{ }^{\circ}\text{C}$)	V_F	1.50		1.75		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_c = 25\text{ }^{\circ}\text{C}$) (Rated DC Voltage, $T_c = 125\text{ }^{\circ}\text{C}$)	I_R	5.0 70				uA
Reverse Recovery Time ($I_F = 0.5$ A, $I_R = 1.0$, $I_{rr} = 0.25$ A)	T_{rr}	50			75	ns
Typical Junction Capacitance (Reverse Voltage of 4 volt & f=1 MHz)	C_P	30		25		pF

CASE---
Transfer molded
plastic

POLARITY---
Cathode indicated
polarity band

SF57 Thru SF510

FIG-1 TYPICAL FORWARD CHARACTERISTICS

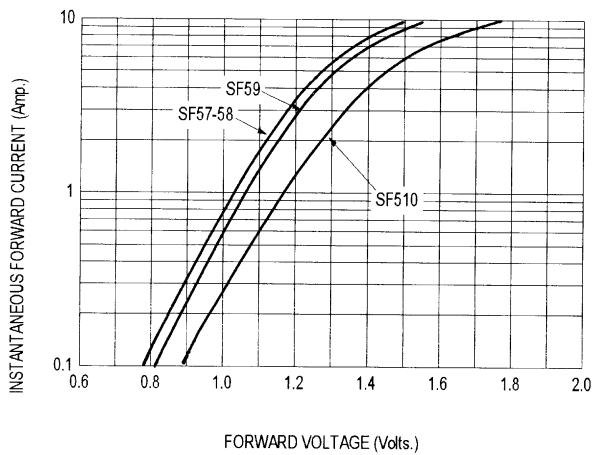


FIG-2 TYPICAL REVERSE CHARACTERISTICS

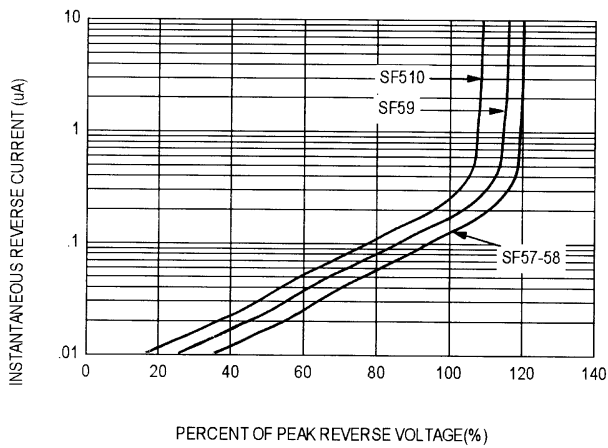


FIG-3 FORWARD CURRENT DERATING CURVE

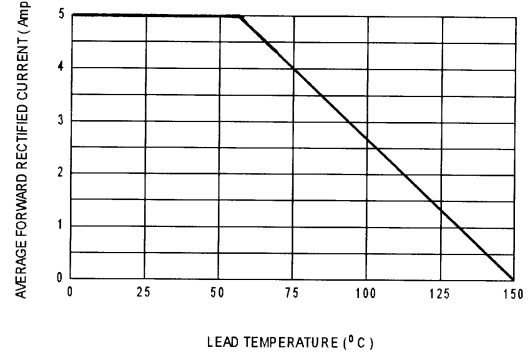


FIG-4 TYPICAL JUNCTION CAPACITANCE

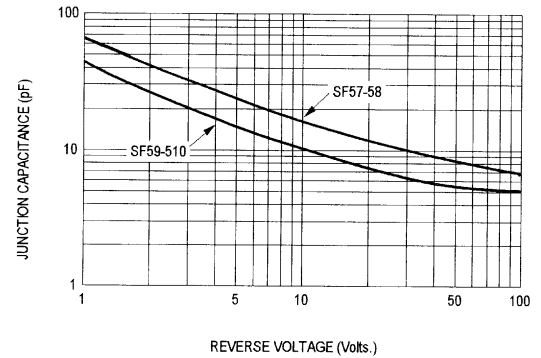
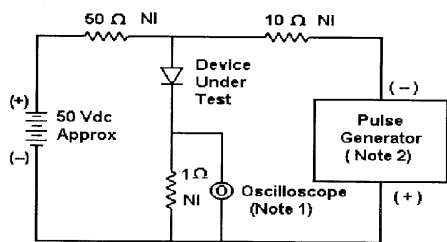
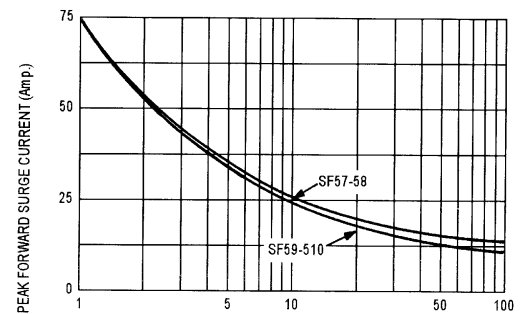
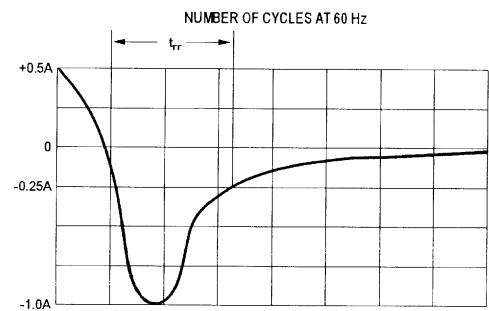


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:
1. Rise Time = 7 ns max. Input Impedance = 1 M Ω , 22 pF
 2. Rise Time = 10 ns max. Input Impedance = 50 Ω



Set time base for 20 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram