



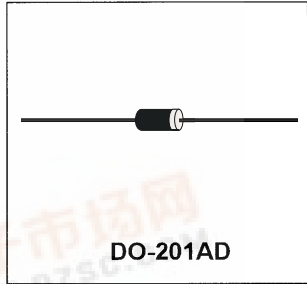
# SF57 thru SF510

## 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:

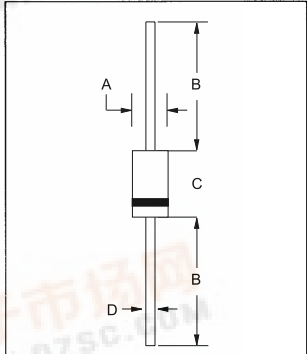
- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* Ultrafast 50 & 75 Nanosecond Recovery Time
- \* Plastic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

**ULTRA FAST RECTIFIERS**  
**5.0 AMPERES**  
**500-1000 VOLTS**



### 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, $T_C=25$ °C)	$V_F$	1.50		1.75		V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C=25$ °C) ( Rated DC Voltage, $T_C=125$ °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

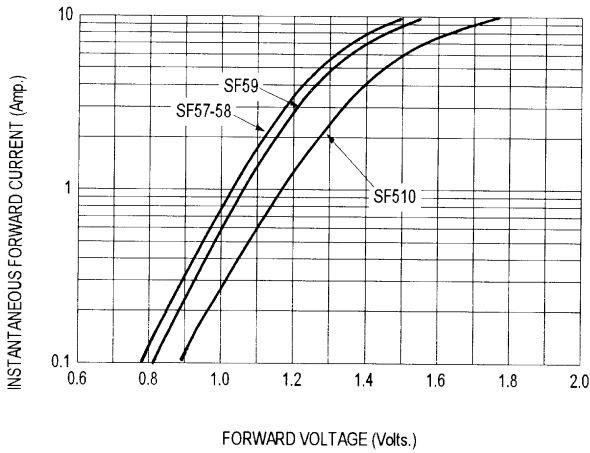
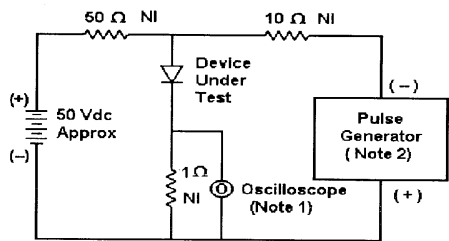
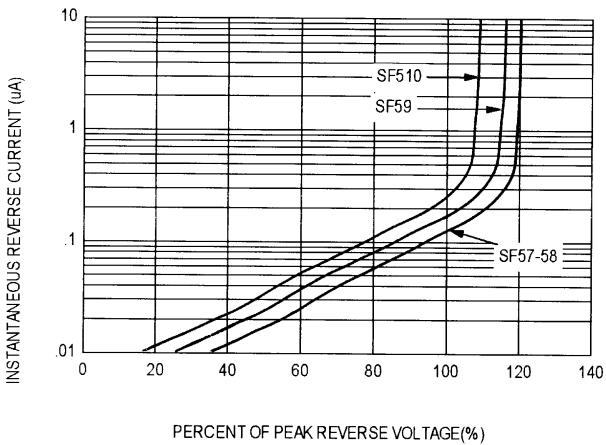


FIG-2 TYPICAL REVERSE CHARACTERISTICS



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

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

FIG-3 FORWARD CURRENT DERATING CURVE

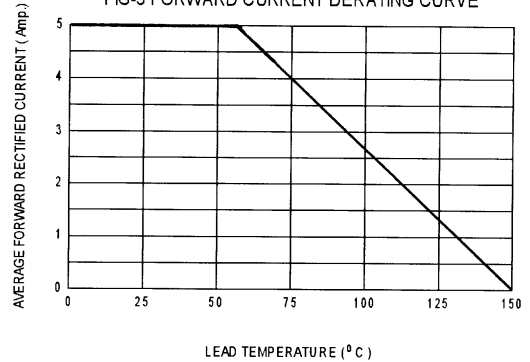


FIG-4 TYPICAL JUNCTION CAPACITANCE

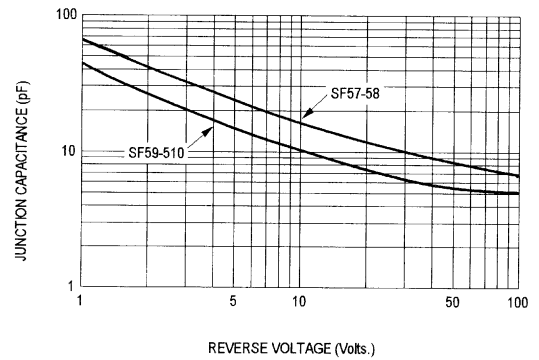
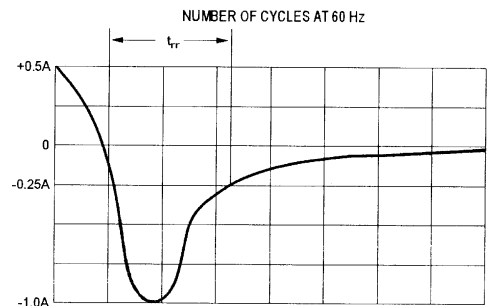
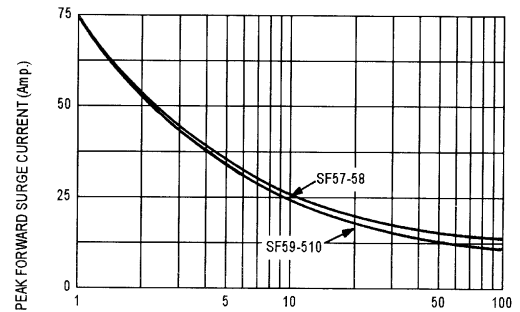


FIG-5 PEAK FORWARD SURGE CURRENT



Set time base for 20 ns/div