

### 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 Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* Ultrafast 35 & 50 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

Plating pb free

The marking is indicated by part no. with. "M".

ex:SF51M~SF56M

### MAXIMUM RATINGS

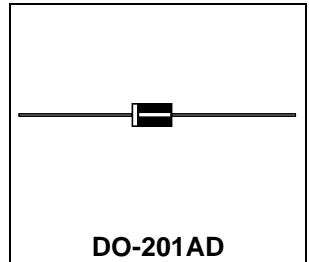
Characteristic	Symbol	SF						Unit
		51	52	53	54	55	56	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_{R50}$	50	100	150	200	300	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	V
Average Rectifier Forward Current	$I_o$	5.0						A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase,60Hz )	$I_{FSM}$	100				75		A
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +150						

### ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	SF						Unit
		51	52	53	54	55	56	
Maximum Instantaneous Forward Voltage ( $I_F=5.0$ Amp, $T_C = 25$ )	$V_F$	1.00				1.30		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25$ ) (Rated DC Voltage, $T_C = 125$ )	$I_R$	5.0 70						$\mu A$
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )	$T_{rr}$	35				50		ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	$C_P$	55				45		pF

ULTRAFAST  
RECTIFIERS

5.0 AMPERES  
50-400 VOLTS



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

CASE---  
Transfer molded plastic

POLARITY---  
Cathode indicated polarity band

# SF51 Thru SF56

FIG-1 TYPICAL FORWARD CHARACTERISTICS

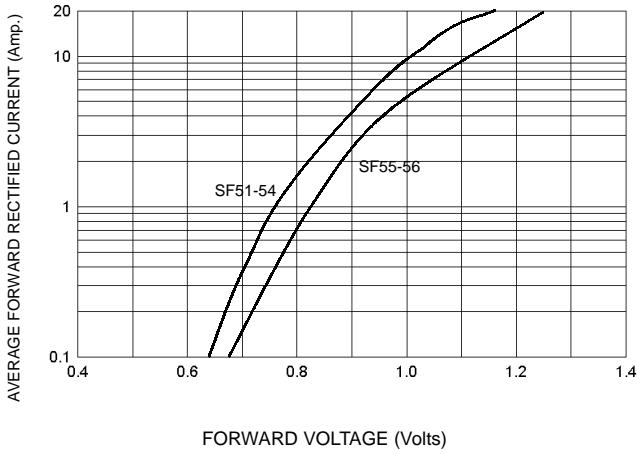


FIG-3 FORWARD CURRENT DERATING CURVE

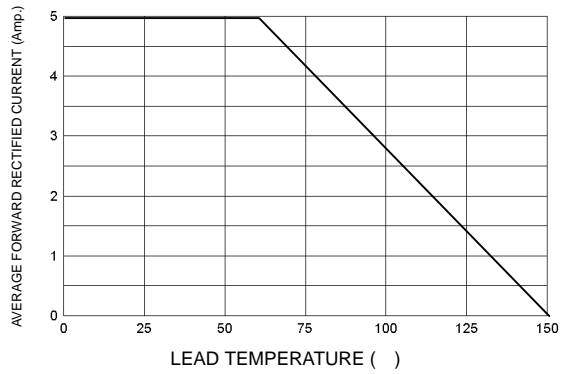


FIG-2 TYPICAL REVERSE CHARACTERISTICS

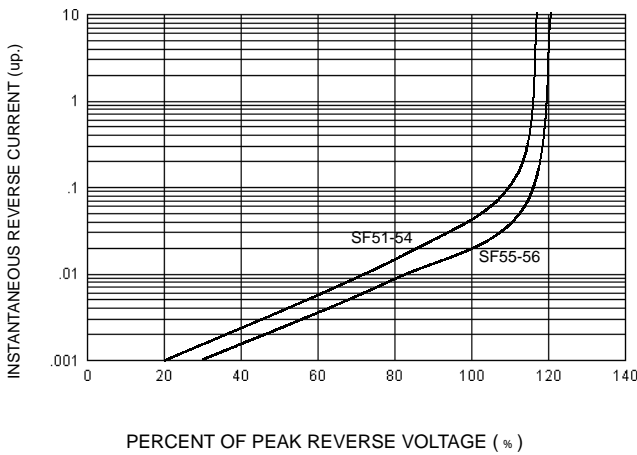


FIG-4 TYPICAL JUNCTION CAPACITANCE

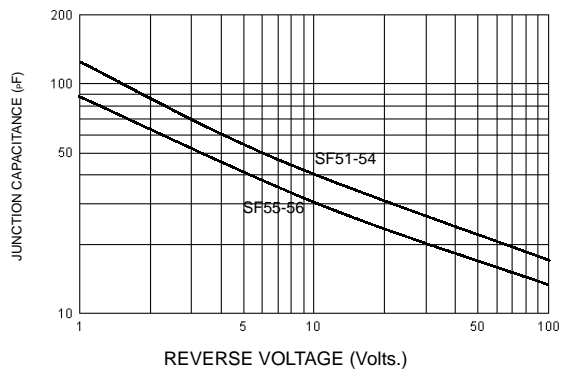
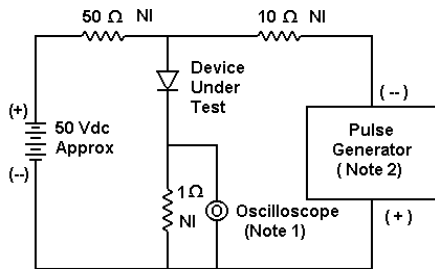
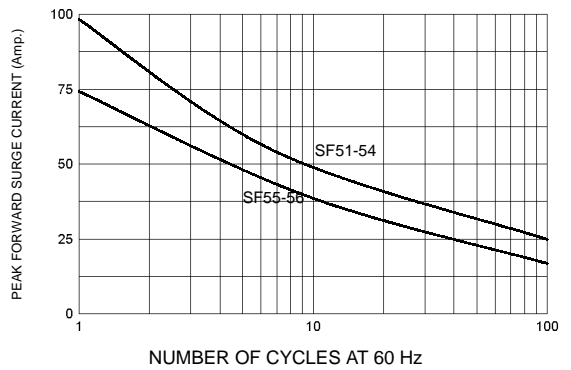
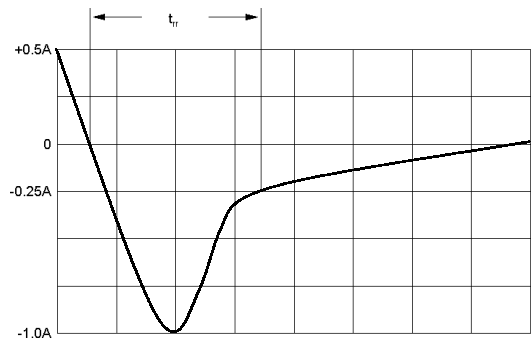


FIG-5 PEAK FORWARD SURGE CURRENT



- 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 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram