

### 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

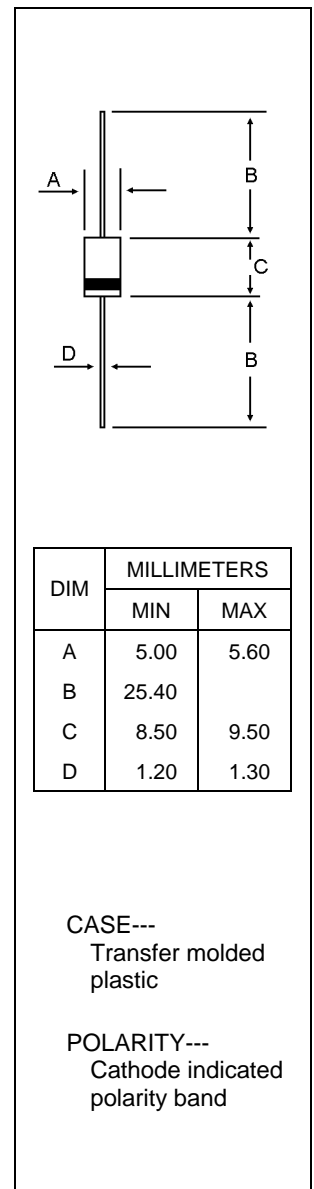
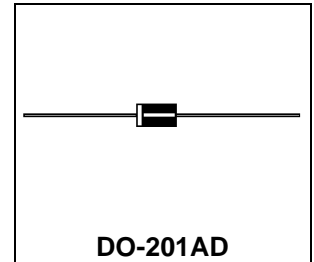
- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* Ultrafast 50 & 75 Nanosecond Recovery Time
- \* Plastic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



Plating pb free  
The marking is indicated by part no. add. "M". ex:SF47M~SF410M

**ULTRAFAST  
RECTIFIERS**

**4.0 AMPERES  
500-1000 VOLTS**



### MAXIMUM RATINGS

Characteristic	Symbol	SF47	SF48	SF49	SF410	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_{R50}$	500	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	350	420	560	700	V
Average Rectifier Forward Current	$I_O$	4.0				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase,60Hz )	$I_{FSM}$	60				A
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +150				°C

### ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	SF47	SF48	SF49	SF410	Unit
Maximum Instantaneous Forward Voltage ( $I_F=5.0$ Amp, $T_C = 25^\circ C$ )	$V_F$	1.50		1.75		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25^\circ C$ ) (Rated DC Voltage, $T_C = 125^\circ C$ )	$I_R$	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 volts & $f=1$ MHz)	$C_P$	30		25		pF

# SF47 Thru SF410

FIG-1 TYPICAL FORWARD CHARACTERISTICS

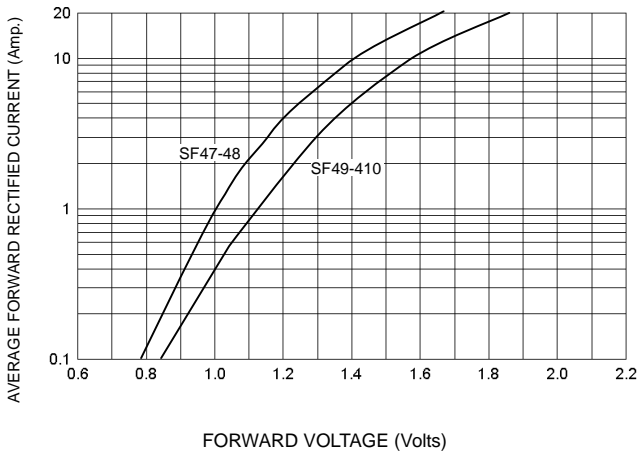


FIG-3 FORWARD CURRENT DERATING CURVE

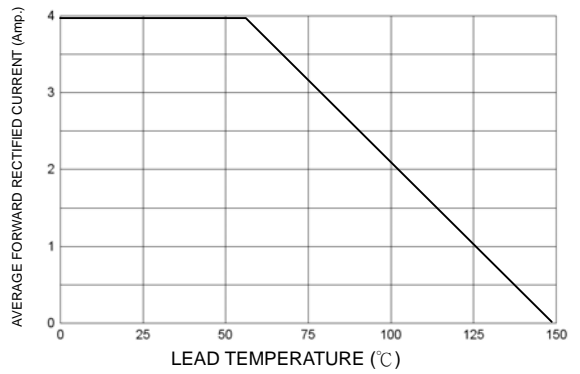


FIG-2 TYPICAL REVERSE CHARACTERISTICS

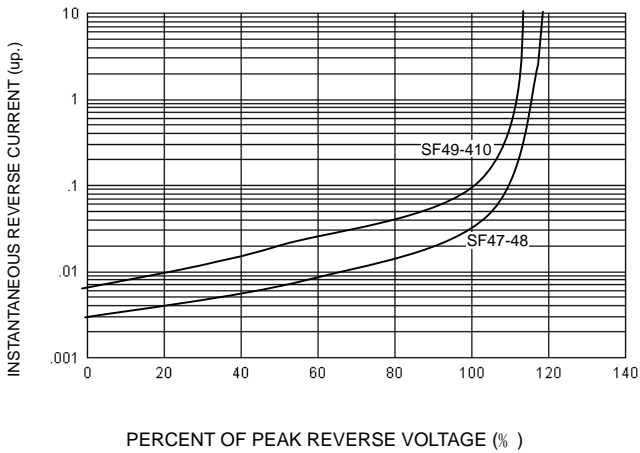


FIG-4 TYPICAL JUNCTION CAPACITANCE

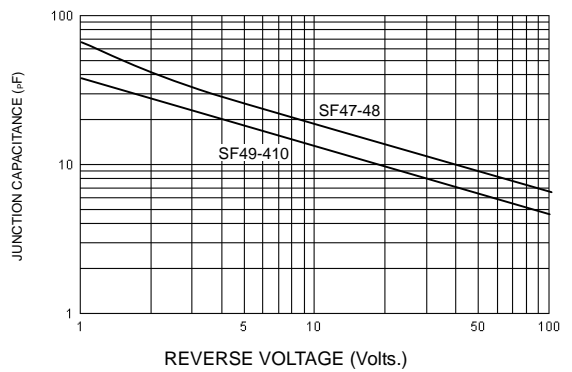
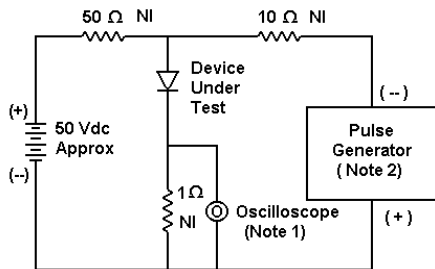
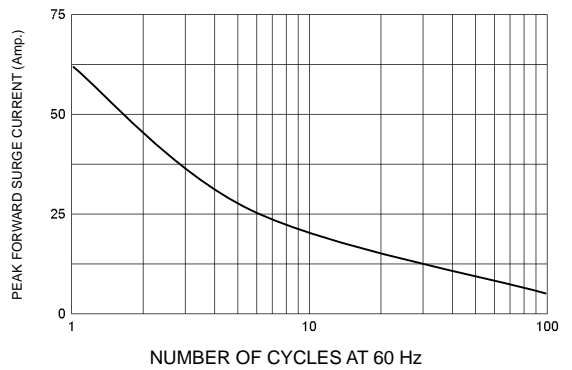
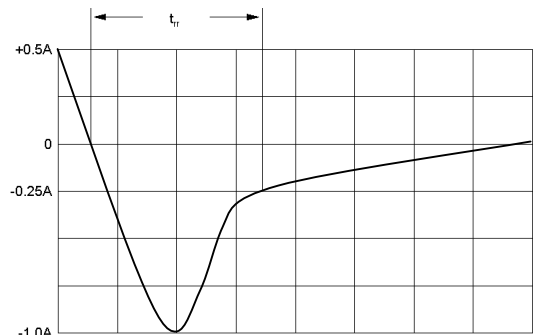


FIG-5 PEAK FORWARD SURGE CURRENT



- 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

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