

## 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:

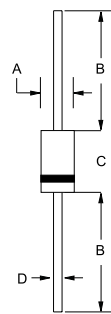
- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* Ultrafast 35 & 50 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**ULTRA FAST  
RECTIFIERS**

**1.0 AMPERES  
50 -- 400 VOLTS**



**DO-41**



DIM	MILLMETERS	
	MIN	MAX
A	2.00	2.70
B	25.40	---
C	4.10	5.20
D	0.70	0.90

CASE---  
Transfer molded plastic

POLARITY---  
Cathode indicated polarity band

### MAXIMUM RATINGS

Characteristic	Symbol	SF						Unit
		11	12	13	14	15	16	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	150	200	300	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	V
Average Rectifier Forward Current	$I_O$	1.0						A
Non-Repetitive Peak Surge Current ( Surge applied at rate load conditions halfwave, single phase, 60Hz )	$I_{FSM}$	30				25		A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	- 65 to + 150						°C

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	SF						Unit
		11	12	13	14	15	16	
Maximum Instantaneous Forward Voltage ( $I_F=1.0$ Amp, $T_C = 25$ °C)	$V_F$	0.95				1.30		V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25$ °C) ( Rated DC Voltage, $T_C = 125$ °C)	$I_R$	5.0 50						uA
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)	$C_P$	25				20		pF

# SF11 Thru SF16

FIG-1 TYPICAL FORWARD CHARACTERISTICS

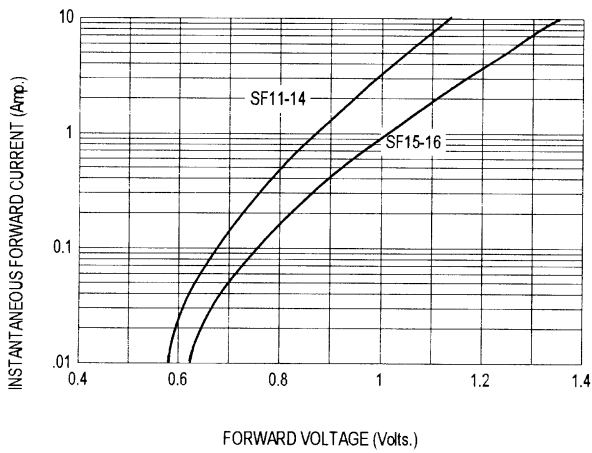


FIG-3 FORWARD CURRENT DERATING CURVE

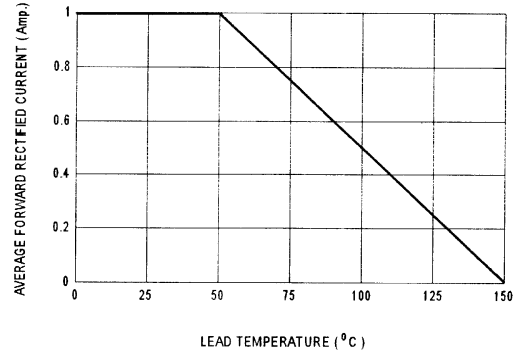


FIG-4 TYPICAL JUNCTION CAPACITANCE

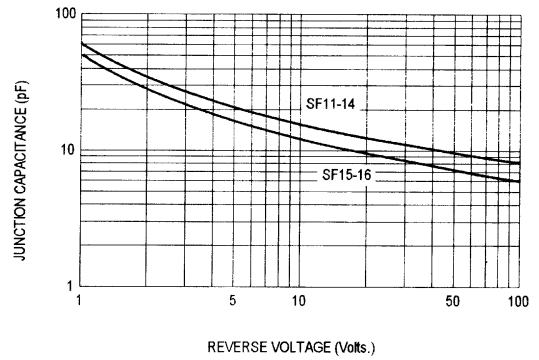


FIG-2 TYPICAL REVERSE CHARACTERISTICS

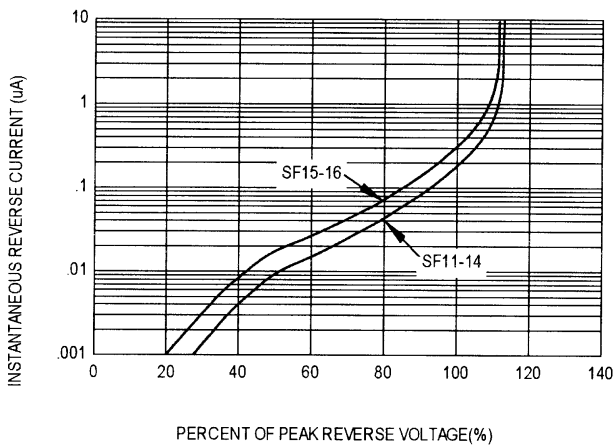
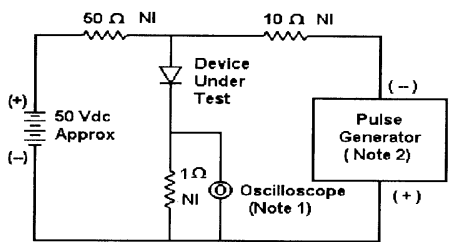
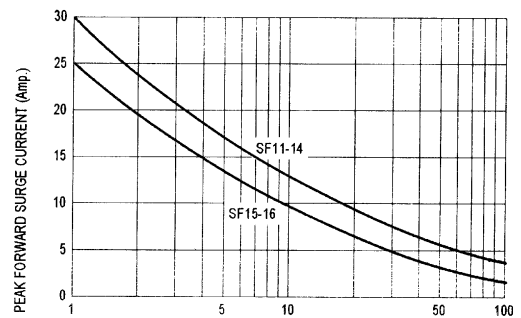
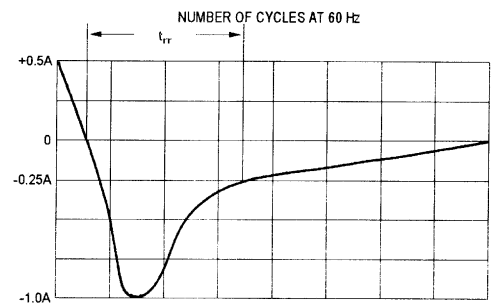


FIG-5 PEAK FORWARD SURGE CURRENT



- 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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