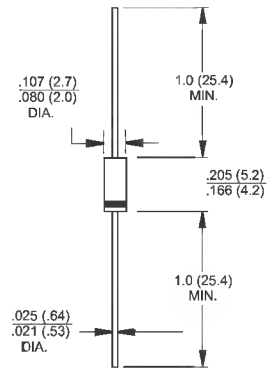
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

SF11S - SF18S

1.0 AMP. Super Fast Rectifiers

A-405



Dimensions in inches and (millimeters)

Features

- ✧ High efficiency, low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss.
- ✧ For use in low voltage, high frequency inventor, free wheeling, and polarity protection application
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Pure tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375",(9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Weight: 0.22 gram

Marking Diagram

SFXXS = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	SF 11S	SF 12S	SF 13S	SF 14S	SF 15S	SF 16S	SF 17S	SF 18S	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T_A = 55°C	$I_{(AV)}$	1.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30								A
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	0.95				1.3		1.7		V
Maximum DC Reverse Current @T_A=25°C at Rated DC Blocking Voltage @ T_A=100°C	I_R	5.0 100								uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	35								nS
Typical Junction Capacitance (Note 2)	Cj	30				15				pF
Typical Thermal Resistance	RθJA	100								°C/W
Operating Temperature Range	T_J	-65 to +125								°C
Storage Temperature Range	T_{STG}	-65 to +150								°C

Notes: 1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
3. Mount on Cu-Pad Size 5mm x 5mm on PCB.

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RATINGS AND CHARACTERISTIC CURVES (SF11S THRU SF18S)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

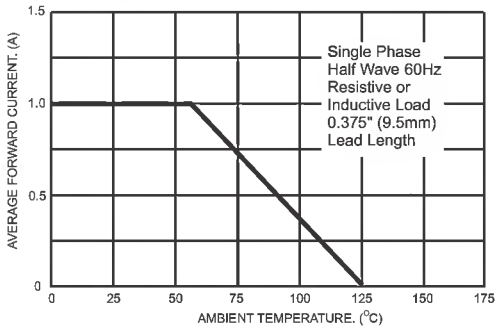

FIG.2- TYPICAL REVERSE CHARACTERISTICS

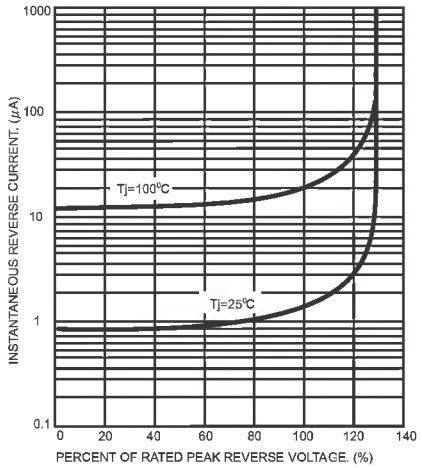

FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

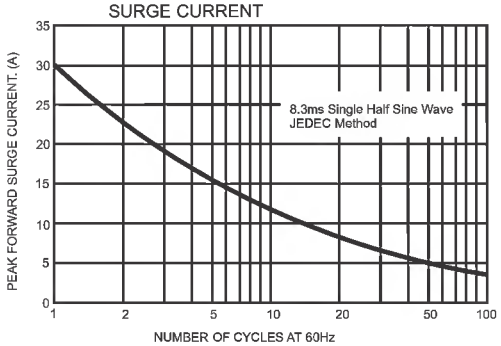

FIG.4- TYPICAL JUNCTION CAPACITANCE

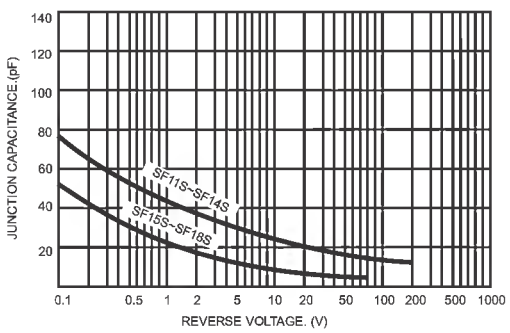

FIG.5- TYPICAL FORWARD CHARACTERISTICS

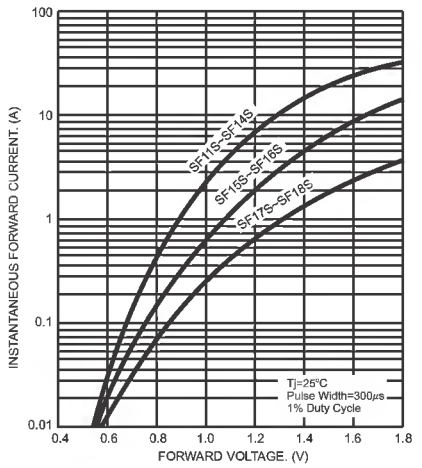

FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM