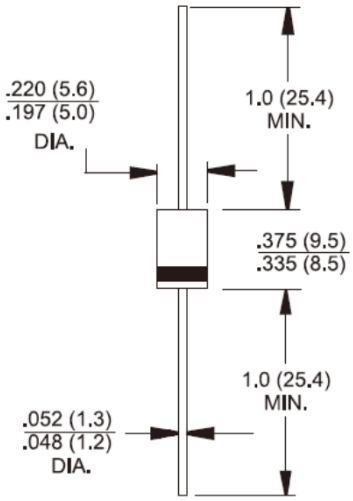
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

SF31G - SF38G

3.0AMPS. Glass Passivated Super Fast Rectifiers

DO-201AD



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

- ✧ Case: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering: 260℃/10 seconds/.375",(9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- ✧ Mounting position: Any
- ✧ Weight: 1.1 grams

Marking Diagram

SF3XG	= Specific Device Code
G	= Green Compound
Y	= Year
WW	= Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ 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 31G	SF 32G	SF 33G	SF 34G	SF 35G	SF 36G	SF 37G	SF 38G	Unit
Maximum Repetitive 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 = 50℃	$I_{F(AV)}$	3								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	125								A
Maximum Instantaneous Forward Voltage (Note 1) @ 3 A	V_F	0.95				1.3		1.7		V
Maximum DC Reverse Current at Rated T_A=25 ℃ DC Blocking Voltage T_A=125 ℃	I_R	5 100								uA
Maximum Reverse Recovery Time (Note 2)	Trr	35								nS
Typical Junction Capacitance (Note 3)	Cj	80				60				pF
Typical Thermal Resistance (Note 4)	$R_{\theta jA}$ $R_{\theta jL}$ $R_{\theta jC}$	35 10 9								^{O}C/W
Operating Temperature Range	T_J	- 65 to + 150								^{O}C
Storage Temperature Range	T_{STG}	- 65 to + 150								^{O}C

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 4: Mount on Heatsink size of 2" x 3" x 0.25"

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RATINGS AND CHARACTERISTIC CURVES (SF31G THRU SF38G)

FIG.1 FORWARD CURRENT DERATING CURVE

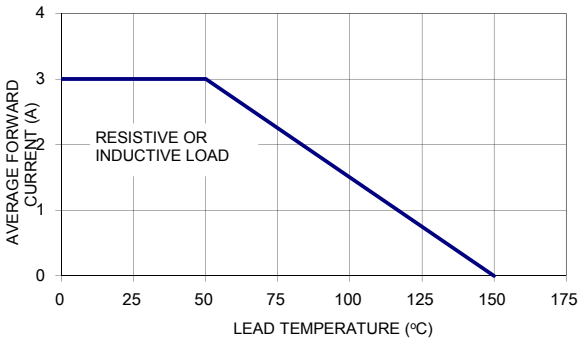

FIG. 2 TYPICAL REVERSE CHARACTERISTICS

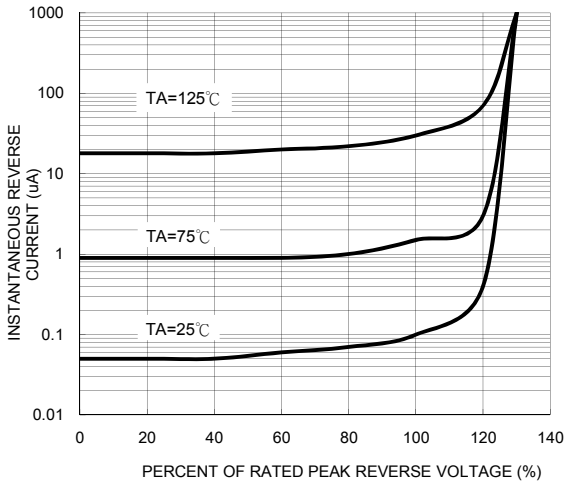

FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

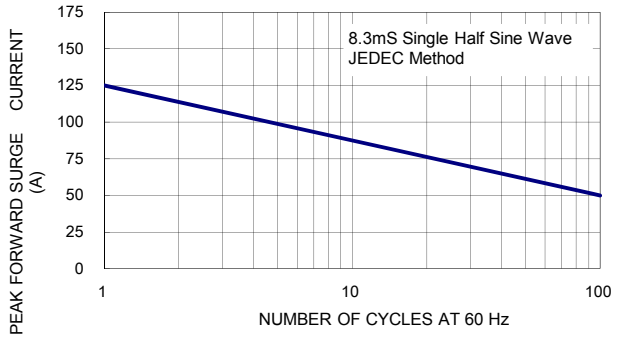

FIG. 4 TYPICAL FORWARD CHARACTERISRICS

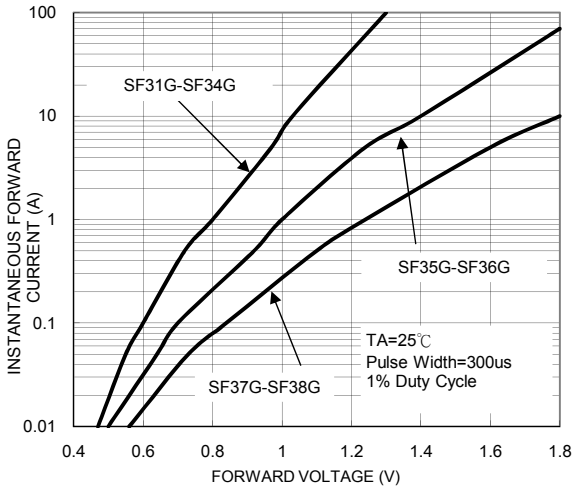

FIG. 5 TYPICAL JUNCTION CAPACITANCE

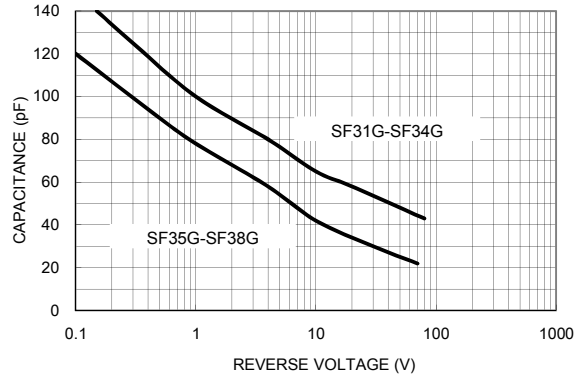

FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM