

# SF31 - SF38

3.0 AMPS. Super Fast Rectifiers



## DO-201AD/DO-27

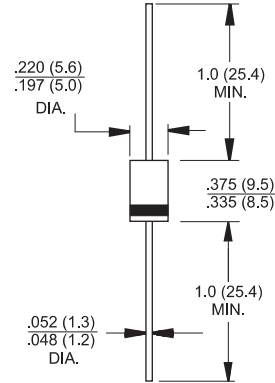


### Features

- ◇ High efficiency, low VF
- ◇ High current capability
- ◇ High reliability
- ◇ High surge current capability
- ◇ Low power loss.
- ◇ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application

### Mechanical Data

- ◇ Cases: Molded plastic
- ◇ Epoxy: UL 94V-0 rate flame retardant
- ◇ 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: 1.2 grams



Dimensions in inches and (millimeters)

### 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 31	SF 32	SF 33	SF 34	SF 35	SF 36	SF 37	SF 38	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 @ $T_A = 55^\circ\text{C}$	$I_{(AV)}$	3.0								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 @ 3.0A	$V_F$	0.95			1.3		1.7			V
Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100^\circ\text{C}$	$I_R$	5.0				100				uA uA
Maximum Reverse Recovery Time (Note 1)	$T_{rr}$	35								nS
Typical Junction Capacitance (Note 2)	$C_j$	80				70				pF
Typical Thermal resistance	$R_{\theta JA}$	35								°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 16mm x 16mm on PCB.

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### RATINGS AND CHARACTERISTIC CURVES (SF31 THRU SF38)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

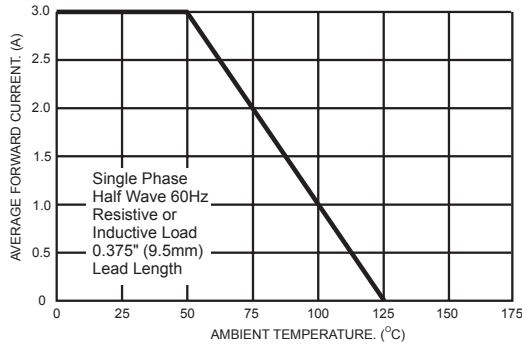


FIG.2- TYPICAL REVERSE CHARACTERISTICS

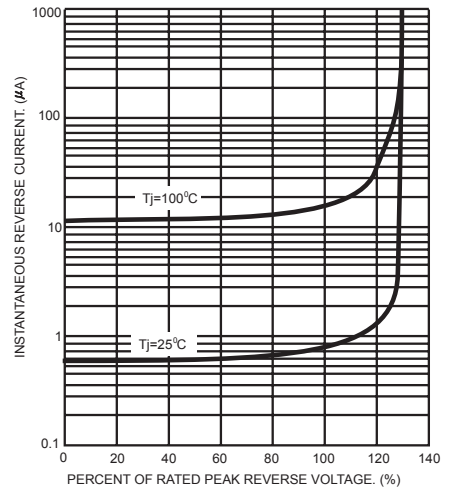


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

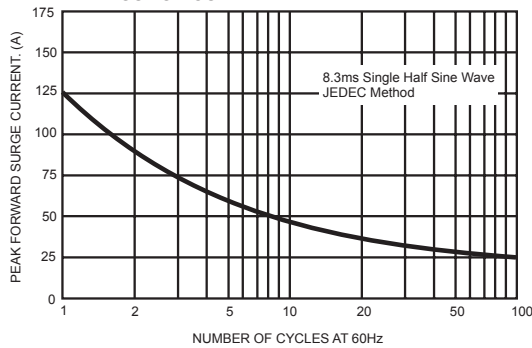


FIG.5- TYPICAL FORWARD CHARACTERISTICS

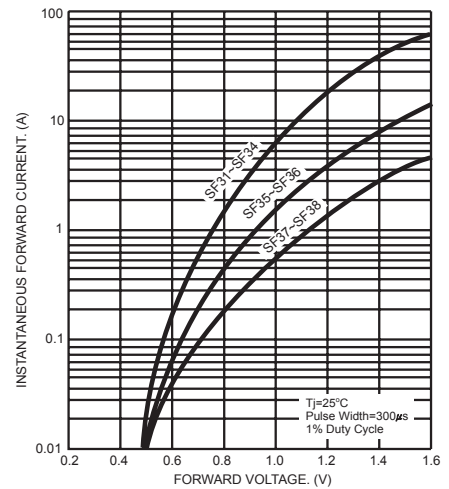


FIG.4- TYPICAL JUNCTION CAPACITANCE

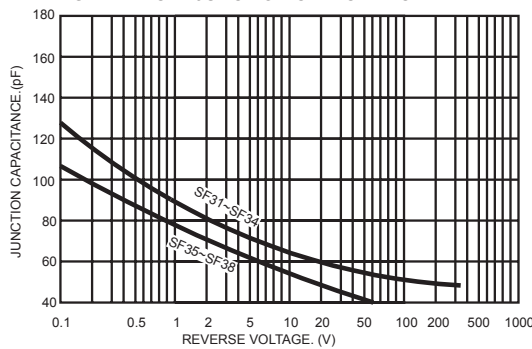
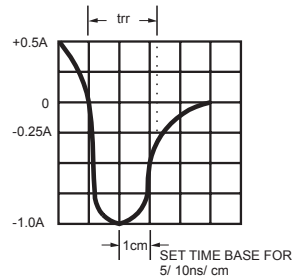
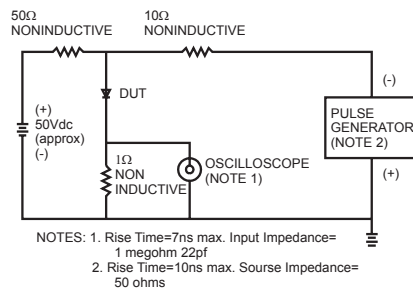


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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