



# SF31 - SF310

## 3.0 AMPS. Super Fast Rectifiers



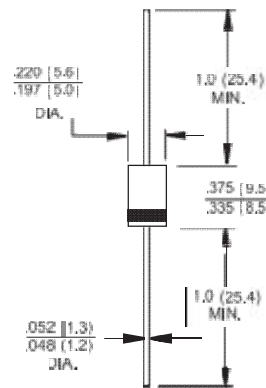
### DO-201AD

### 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	SF 39	SF 310	Units	
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	150	200	300	400	500	600	800	1000	V	
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	105	140	210	280	350	420	560	700	V	
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	150	200	300	400	500	600	800	1000	V	
Maximum Average Forward Rectified Current .375 (9 .5mm) Lead Length @T <sub>A</sub> = 55 °C	I(AV)	3.0										A	
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )	I <sub>FSM</sub>	100										A	
Maximum Instantaneous Forward Voltage @ 3 .0A	V <sub>F</sub>	0.95			1.3		1.7		2.6			V	
Maximum DC Reverse Current @ T <sub>A</sub> =25 °C at Rated DC Blocking Voltage @ T <sub>A</sub> =100 °C	I <sub>R</sub>	5.0						100					uA uA
Maximum Reverse Recovery Time (Note 1)	T <sub>rr</sub>	35											nS
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	80				70							pF
Typical Thermal resistance	R θJA	35										°C/W	
Operating Temperature Range	T <sub>J</sub>	-65 to +150										°C	
Storage Temperature Range	T <sub>STG</sub>	-65 to +150										°C	

- Notes:
- 1 . Reverse Recovery Test Conditions: I<sub>F</sub> =0 .5A, I<sub>R</sub> =1 .0A, I<sub>RR</sub> =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 .



## RATINGS AND CHARACTERISTIC CURVES (SF31 THRU SF310)

FIG. 1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

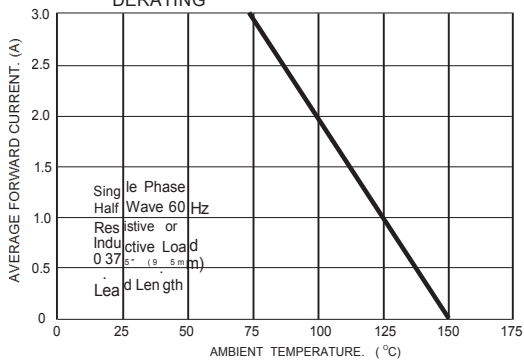


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

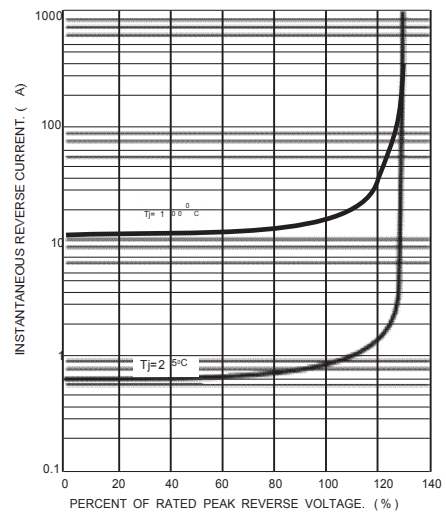


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

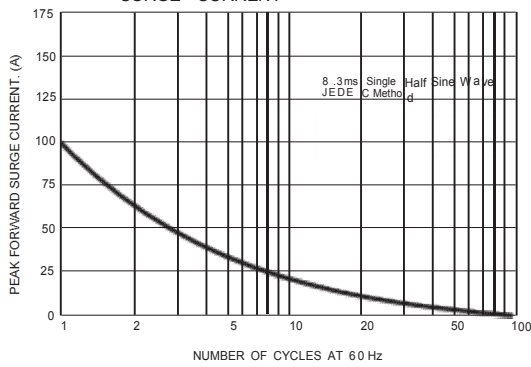


FIG. 5- TYPICAL FORWARD CHARACTERISTICS

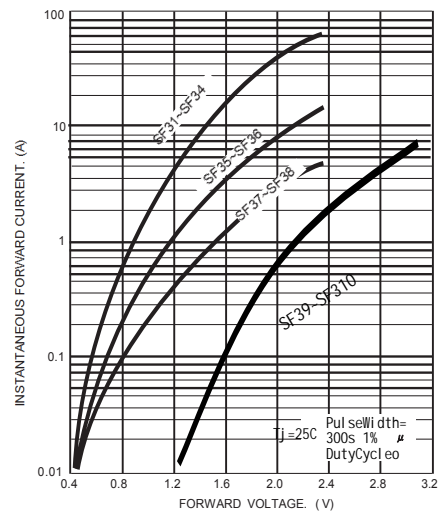


FIG. 4- TYPICAL JUNCTION CAPACITANCE

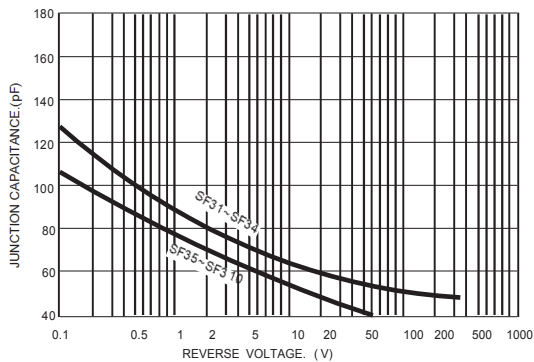
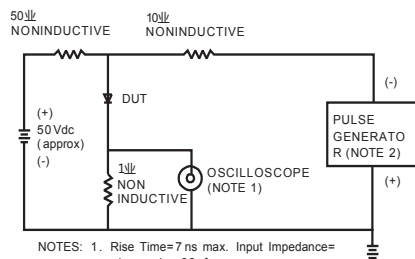
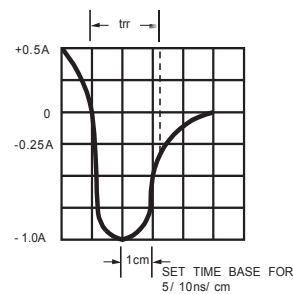


FIG. 6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time = 7 ns max. Input Impedance = 1 megohm 22 pf  
2. Rise Time = 10 ns max. Source Impedance = 50 ohms



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