



# SF31 THRU SF38

## SUPERFAST RECOVERY RECTIFIER

**REVERSE VOLTAGE:** 50 to 600 VOLTS

**FORWARD CURRENT:** 3.0 AMPERE

### FEATURES

- High surge capability
- Low forward voltage, high current capability
- Hermetically sealed
- Superfast recovery times
- Low leakage.
- Suffix "H" indicates Halogen-free parts, ex. SF31H

### MECHANICAL DATA

Case : Molded plastic, DO-201AD

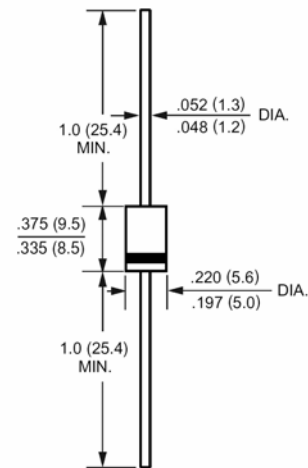
Epoxy : UL 94V-O rate flame retardant

Lead : Axial leads, solderable per MIL-STD-202,  
method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any

### DO-201AD



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Parameter	Symbols	SF31	SF32	SF33	SF34	SF35	SF36	SF38	Units	
Maximum Recerrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	Volts	
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	Volts	
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	Volts	
Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	3.0							Amp	
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	125.0							Amp	
Maximum Forward Voltage at 3.0A DC and 25°C	$V_F$	0.95				1.3		1.7	Volts	
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	$I_R$	5.0				100				uAmp
Typical Junction Capacitance (Note 1)	$C_J$	80				70				pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	20.0							°C/W	
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	35							nS	
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150							°C	

#### NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance Junction to Ambient and form junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted.

3- Reverse Recovery Test Conditions:  $I_F=.5A$ ,  $I_R=1A$ ,  $I_{RR}=.25A$ .



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### RATINGS AND CHARACTERISTIC CURVES

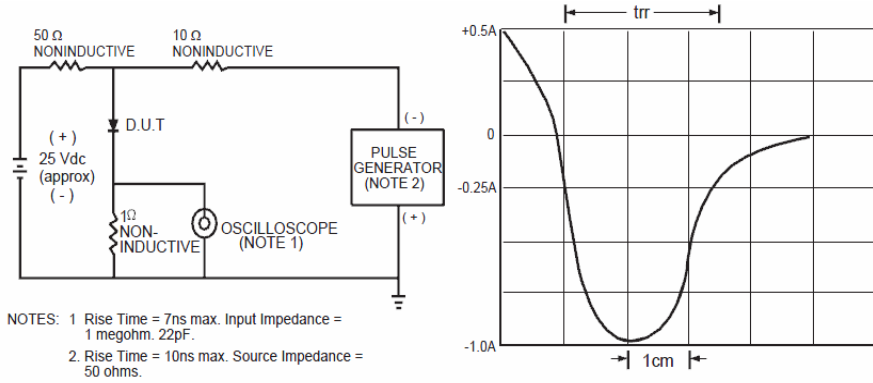


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

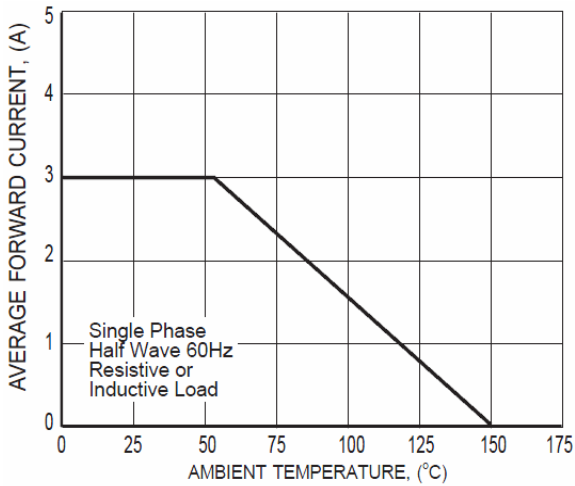


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

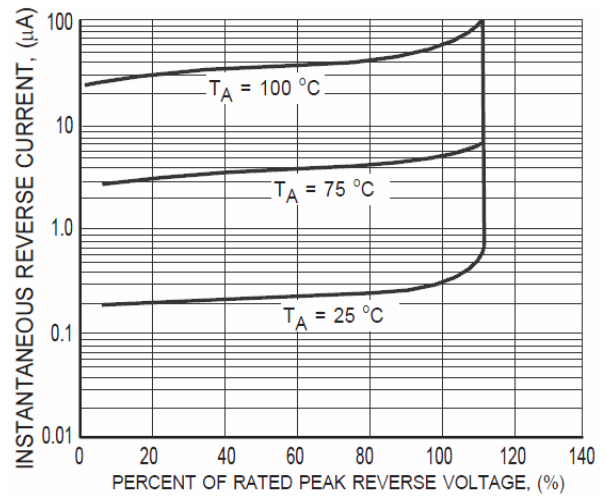


FIG.3 TYPICAL REVERSE CHARACTERISTICS

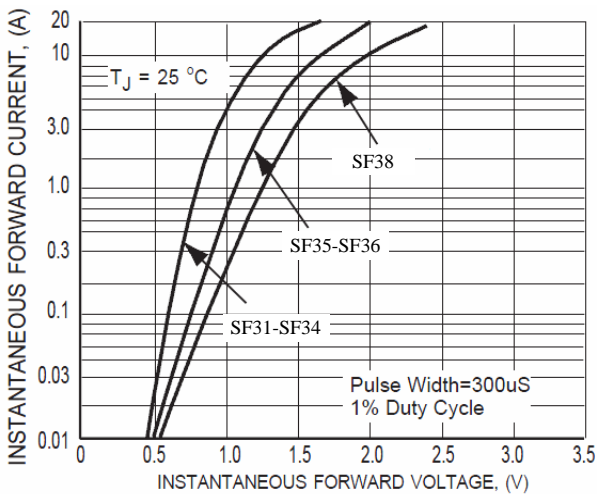


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

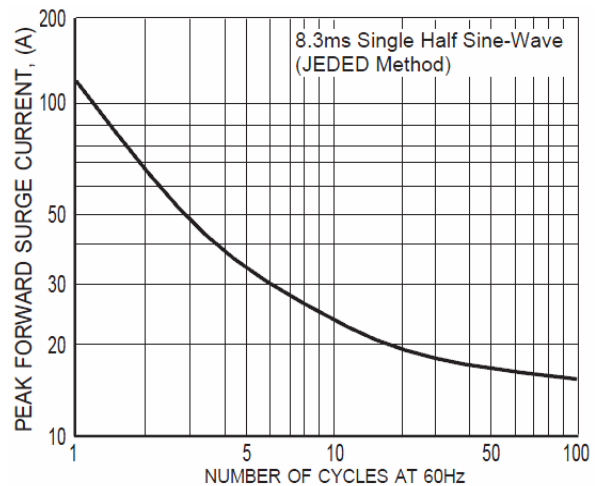


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT