



# SF301 THRU SF309

## SUPER FAST RECOVERY RECTIFIER

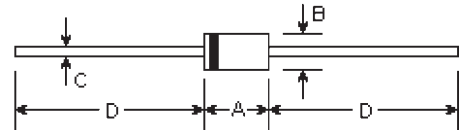
Reverse Voltage - 50 to 1000 Volts

Forward Current - 3.0 Amperes

### Features

- Superfast recovery times
- Low forward voltage, high current capability
- Hermetically sealed
- Low leakage
- High surge capability
- Plastic package has Underwriters Laboratories Flammability classification 94V-0 utilizing Flame retardant epoxy molding compound

### DO-201AD



### Mechanical Data

- **Case:** Molded plastic, DO-201AD
- **Terminals:** Axial leads, solderable to MIL-STD-202, method 208
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.042 ounce, 1.19 grams

DIM	DIMENSIONS				Note
	inches		mm		
	Min.	Max.	Min.	Max.	
A	0.283	0.374	7.20	9.50	
B	0.189	0.208	4.80	5.30	ϕ
C	0.048	0.051	1.20	1.30	ϕ
D	1.000	-	25.40	-	

### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Resistive or inductive load, 60Hz.

	Symbols	SF 301	SF 302	SF 303	SF 304	SF 305	SF 306	SS 307	SF 308	SF 309	Units
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	600	800	1000	Volts
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	420	560	700	Volts
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	600	800	1000	Volts
Maximum average forward current 0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	3.0									Amps
Peak forward surge current, $I_{FSM}$ (surge): 8.3mS single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method)	$I_{FSM}$	125.0									Amps
Maximum forward voltage at 3.0A DC	$V_F$	0.95			1.25		1.40			Volts	
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	$I_R$	5.0				400.0				μA	
Maximum reverse recovery time (Note 1)	$T_{rr}$	35.0									nS
Typical junction capacitance (Note 2)	$C_j$	95.0									pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$	20.0									°C/W
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150									°C

#### Notes:

- (1) Reverse recovery test conditions:  $I_F=0.5A, I_R=1.0A, I_T=0.25A$
- (2) Measured at 1.0MHz and applied reverse voltage of 4.0 VDC
- (3) Thermal resistance from junction to ambient and from junction to lead length 0.375" (9.5mm) P.C.B. mounted

# RATINGS AND CHARACTERISTIC CURVES

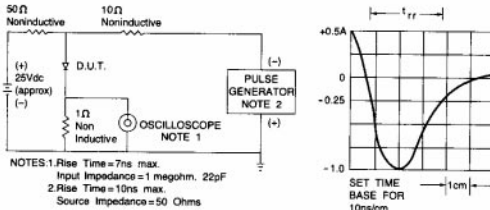


Fig. 1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

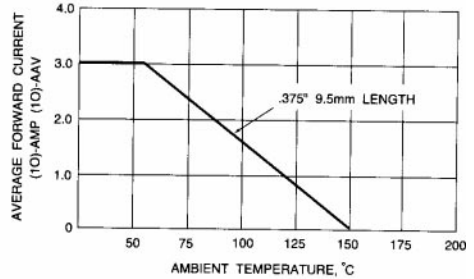


Fig. 2 - MAXIMUM AVERAGE FORWARD CURRENT RATING

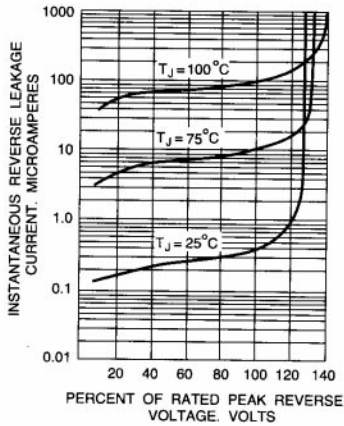


Fig. 3 - TYPICAL REVERSE CHARACTERISTICS

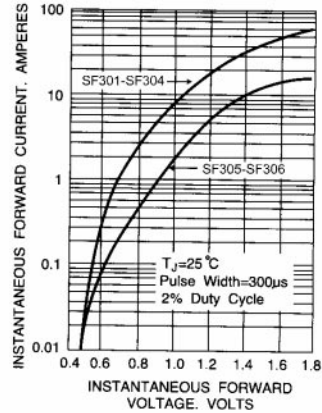


Fig. 4 - TYPICAL JUNCTION CAPACITANCE

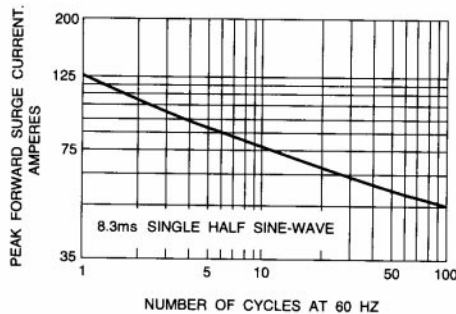


Fig. 5 - MAXIMUM NON-REPETITIVE SURGE CURRENT

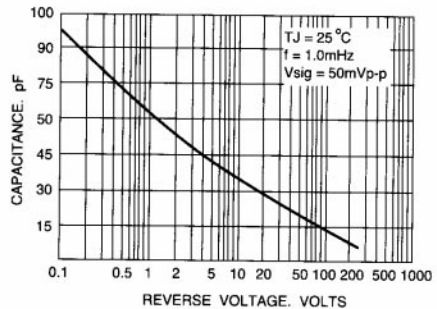


Fig. 6 - TYPICAL JUNCTION CAPACITANCE