



# SF501 THRU SF509

## SUPER FAST RECOVERY RECTIFIER

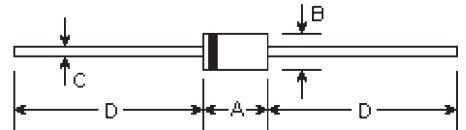
Reverse Voltage - 50 to 1000 Volts

Forward Current - 5.0 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

DIMENSIONS					Note
DIM	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.

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

For capacitive load, derate current by 20%.

	Symbols	SF 501	SF 502	SF 503	SF 504	SF 505	SF 506	SF 507	SF 508	SF 509	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 $T_A=55^\circ\text{C}$	$I_{(AV)}$	5.0									Amps
Peak forward surge current, $I_{FSM}$ (surge): 8.3mS single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method)	$I_{FSM}$	150.0									Amps
Maximum forward voltage at 5.0A 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				500.0					μA
Maximum reverse recovery time (Note 1)	$T_{rr}$	35.0				nS					
Typical junction capacitance (Note 2)	$C_J$	100.0				pF					
Typical thermal resistance (Note 3)	$R_{\theta JA}$	25.0				°C/W					
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150				°C					

#### Notes:

(1) Reverse recovery test conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{rr}=0.25A$

(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

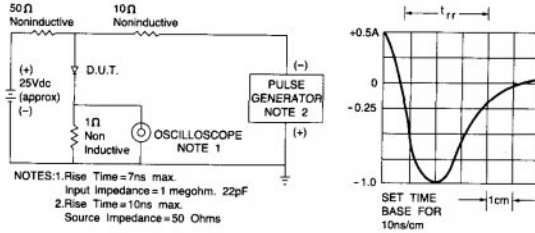


Fig. 1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

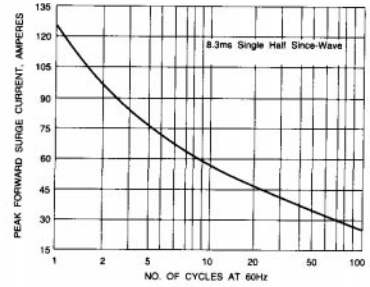


Fig. 2 - TYPICAL JUNCTION CAPACITANCE

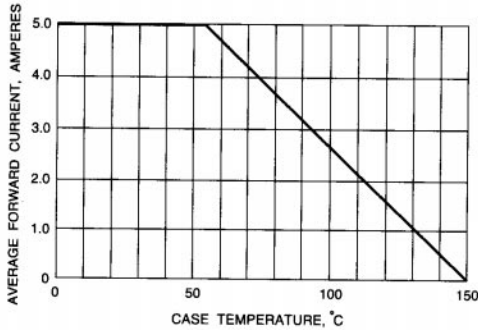


Fig. 3 - MAXIMUM AVERAGE FORWARD CURRENT RATING

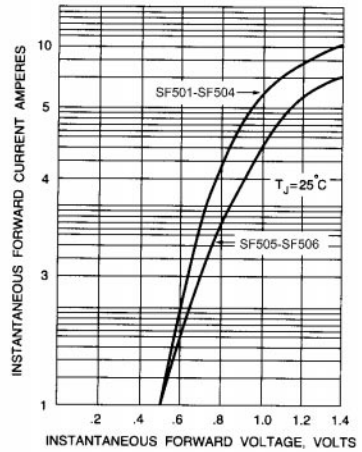


Fig. 4 - TYPICAL REVERSE CHARACTERISTICS

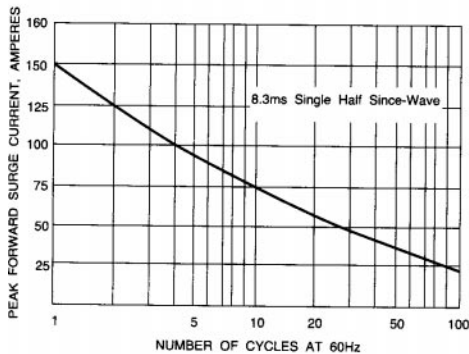


Fig. 5 - MAXIMUM NON-REPETITIVE SURGE CURRENT

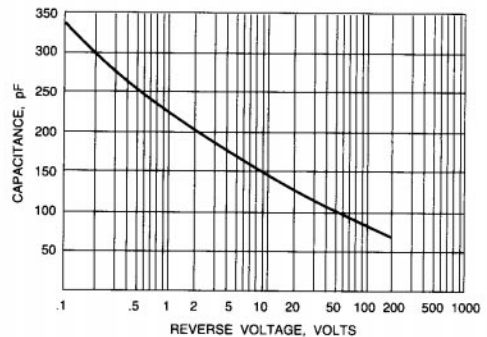


Fig. 6 - TYPICAL JUNCTION CAPACITANCE