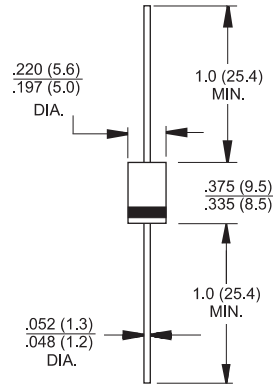




SF51-SF58

5.0 AMP. 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

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode
- High temperature soldering guaranteed: $260^{\circ}\text{C}/10$ seconds/ $.375"$ (9.5mm) lead lengths at 5 lbs., (2.3kg) tension
- Mounting position: Any
- 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 51	SF 52	SF 53	SF 54	SF 55	SF 56	SF 57	SF 58	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 @ $T_A = 55^{\circ}\text{C}$	$I_{(AV)}$	5.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150								A
Maximum Instantaneous Forward Voltage @ 5.0A	V_F	0.975			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	120				60				pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	20				5.0				$^{\circ}\text{C}/\text{W}$
Operating Temperature Range	T_J	-65 to +125								$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150								$^{\circ}\text{C}$

- Notes:
- Reverse Recovery Test Conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$
 - Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
 - Mount on Cu-Pad Size 16mm x 16mm on P.C.B

RATINGS AND CHARACTERISTIC CURVES (SF51 THRU SF58)

FIG.1- MAXIMUM AVERAGE FORWARD CURRENT DERATING

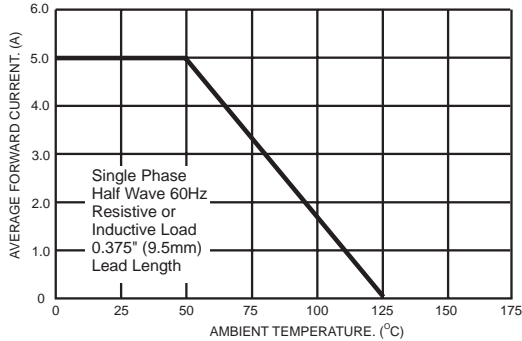


FIG.2- TYPICAL REVERSE CHARACTERISTICS

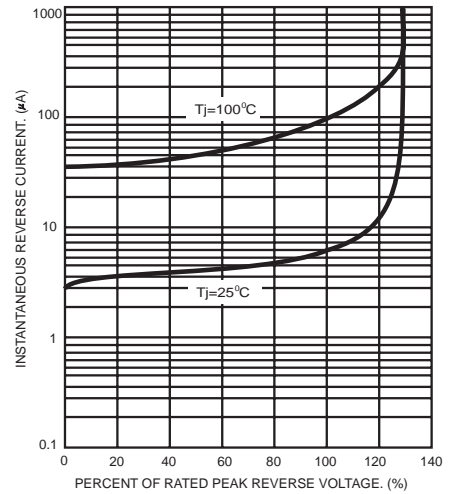


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

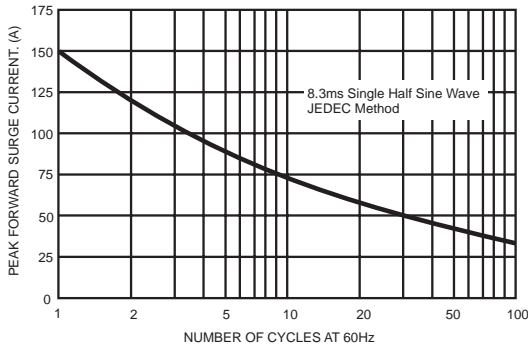


FIG.5- TYPICAL FORWARD CHARACTERISTICS

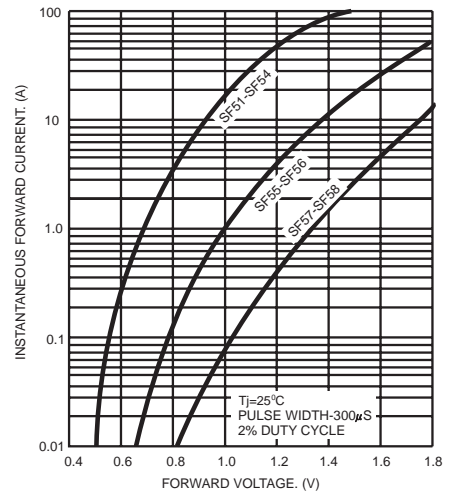


FIG.4- TYPICAL JUNCTION CAPACITANCE

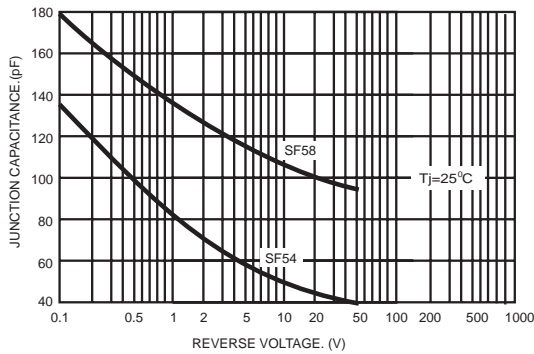


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

