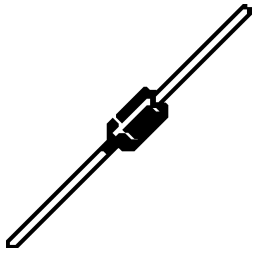
Semiconductor *Data Sheet*

5.0 Amp SUPER FAST PLASTIC RECTIFIERS

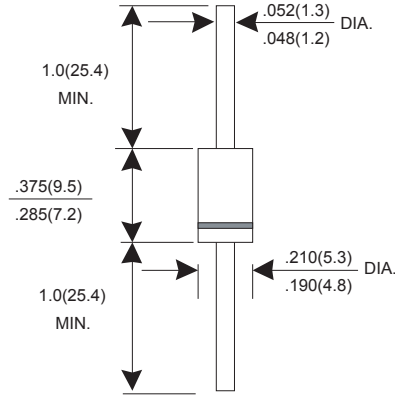
SF51~58

Description



DO-201AD

Mechanical Dimensions



Dimensions in inches and (millimeters)

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Epoxy: UL 94V-O rate flame retardant
- ✧ Lead: Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375",(9.5mm) lead lengths at 5 lbs., (2.3kg) tension

Features

- ✧ Low forward voltage drop
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Mounting postion: Any
- ✧ Weight :1.2 grams

Maximum Ratings and Electrical Characteristics

Rating at 25℃ 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	SF51	SF52	SF54	SF56	SF58	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	100	200	400	600	750	V
Maximum RMS Voltage	V_{RMS}	70	140	280	420	525	V
Maximum DC Blocking Voltage	V_{DC}	100	200	400	600	750	V
Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T_A = 55℃	$I_{(AV)}$	5.0					A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	135					A
Maximum Instantaneous Forward Voltage @ 5.0A	V_F	0.95		1.4	1.7		V
Maximum DC Reverse Current @ T_A=25℃ at Rated DC Blocking Voltage @ T_A=100℃	I_R	5.0 50					uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	35					nS
Typical Junction Capacitance (Note 2)	Cj	120			60		pF
Typical Thermal Resistance (Note 3)	$R\theta_{JA}$ $R\theta_{JL}$	20 5.0					℃/W
Operating Temperature Range	T_J	-65 to +125					℃
Storage Temperature Range	T_{STG}	-65 to +150					℃

Notes: 1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=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 P.C.B.

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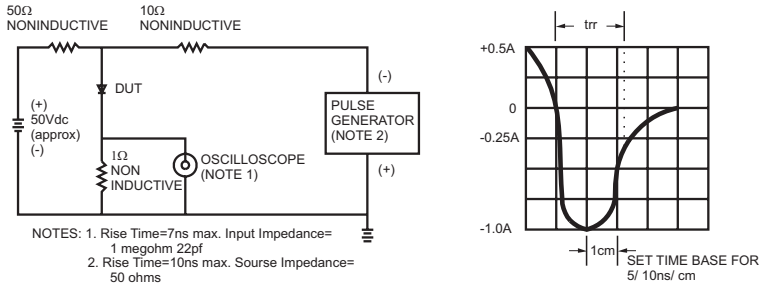
RATINGS AND CHARACTERISTIC CURVES (SF54 THRU SF58)

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



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

FIG.2- MAXIMUM AVERAGE FORWARD CURRENT DERATING

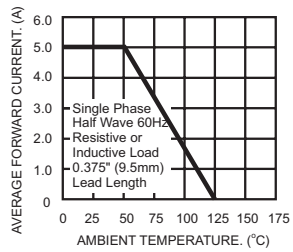


FIG.3- TYPICAL REVERSE CHARACTERISTICS

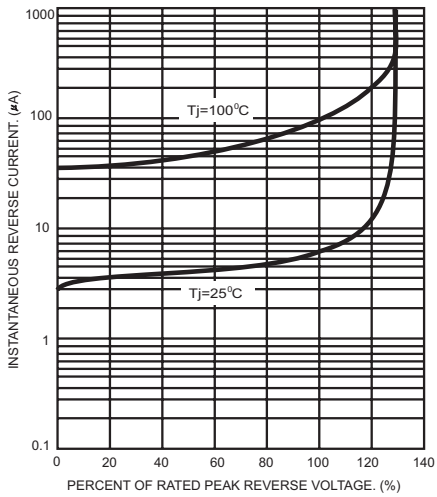


FIG.4- TYPICAL FORWARD CHARACTERISTICS

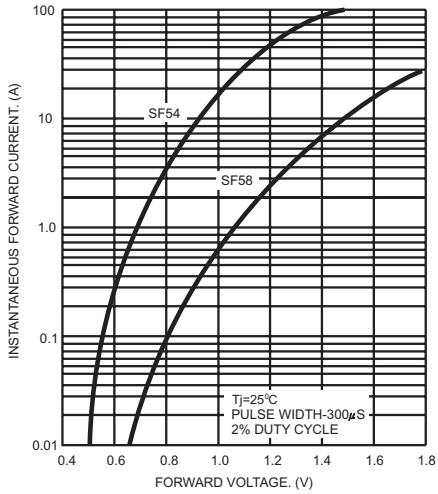


FIG.5- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

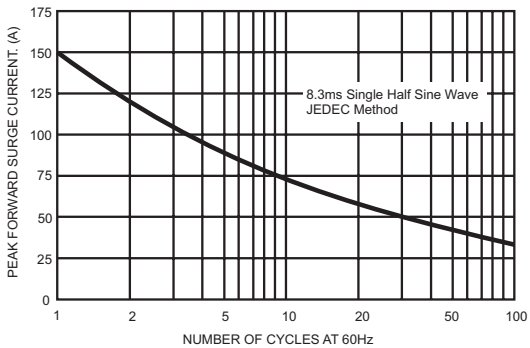


FIG.6- TYPICAL JUNCTION CAPACITANCE