



SF51 THRU SF58

SUPERFAST RECOVERY RECTIFIER

REVERSE VOLTAGE: 50 to 600 VOLTS
FORWARD CURRENT: 5.0 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. SF51H

MECHANICAL DATA

Case : Molded plastic, DO-201AD

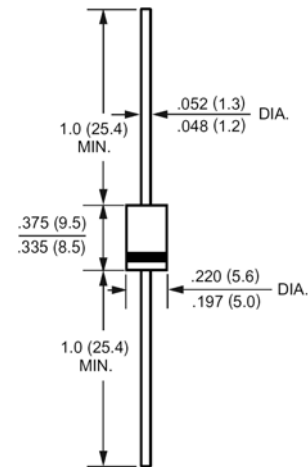
Epoxy : UL 94V-O rate flame retardant

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	SF51	SF52	SF53	SF54	SF55	SF56	SF58	Units	
Maximum Recurrent 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 $T_A=55^\circ\text{C}$	$I_{(AV)}$	5.0							Amp	
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	150.0							Amp	
Maximum Forward Voltage at 5.0A 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	120				60				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 from junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted.

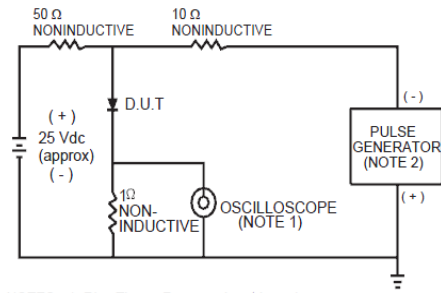
3- Reverse Recovery Test Conditions: $I_F=5A$, $I_R=1A$, $I_{RR}=25A$.



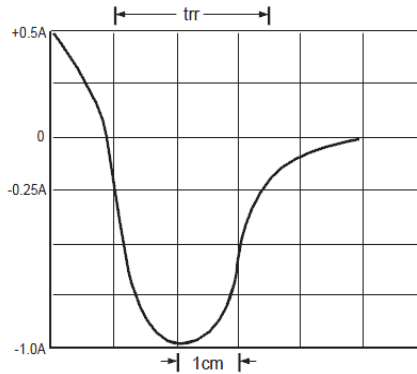
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RATINGS AND CHARACTERISTIC CURVES



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



SET TIME BASE FOR 50/100 ns/cm

FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

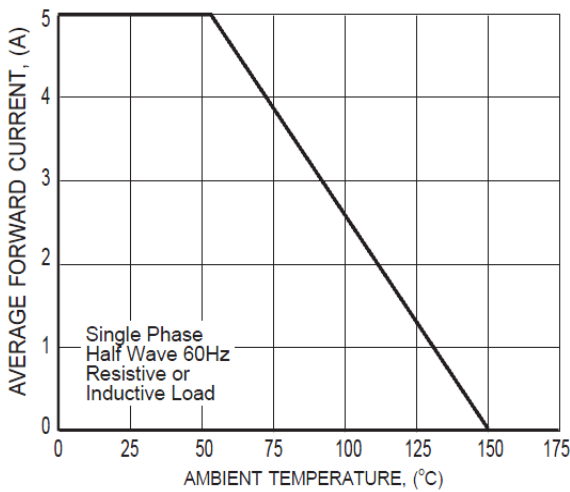


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

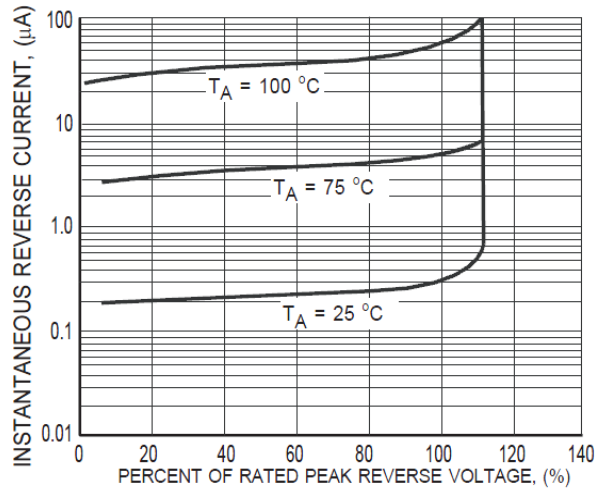


FIG.3 TYPICAL REVERSE CHARACTERISTICS

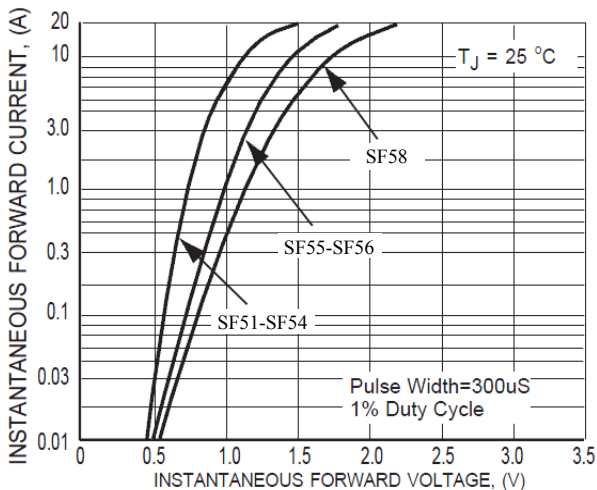


FIG.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

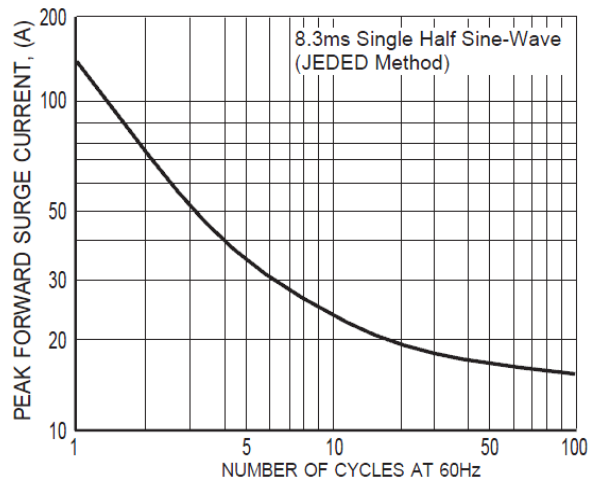


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT