

SF51 THRU SF58

SUPERFAST RECOVERY RECTIFIERS

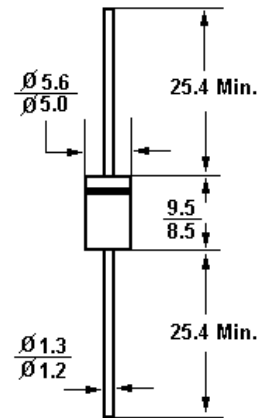
DO-201AD

Reverse Voltage – 50 to 600 Volts

Forward Current – 5.0 Amperes

Features

- Low forward voltage drop
- Low leakage
- High current capability
- Super fast switching speed
- High forward surge capability
- High reliability.



Dimensions in mm

Mechanical Data

- **Case:** JEDEC DO-201AD molded plastic body
- **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

Absolute Maximum Ratings and Characteristics

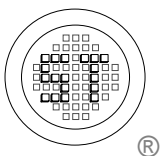
Rating at 25°C ambient temperature unless otherwise specified. Single-phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

	Symbols	SF51	SF52	SF53	SF54	SF55	SF56	SF58	Units
Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	V
RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	V
DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	V
Average Forward Rectified Current 0.375"(9.5mm) Lead Length at $T_A = 55^\circ C$	$I_{(AV)}$	5.0							A
Peak Forward Surge Current , 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	150							A
Instantaneous Forward Voltage @ 5.0A DC and 25°C	V_F	0.95			1.25		1.7		V
Reverse Current @ $T_A = 25^\circ C$	I_R	5.0							μA
at Rated DC Blocking Voltage @ $T_A = 100^\circ C$	I_R	500							μA
Reverse Recovery Time (Note 1)	T_{rr}	35					50		ns
Typical Junction Capacitance (Note 2)	C_J	45							pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$	25							$^\circ C/W$
Operating Junction Temperature Range	T_J	-55 to +125							$^\circ C$
Storage Temperature Range	T_S	-55 to +150							$^\circ C$

Note: (1) Reverse recovery test conditions: $I_F = 0.5A$, $I_R = 1A$, $I_{RR} = 0.25A$.

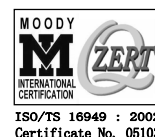
(2) Measured at 1 MHz and applied reverse voltage of 4 Volts D.C

(3) Thermal resistance junction to ambient and form junction to lead at 0.375" (9.5mm) lead length, P. C. B. mounted.



SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001
Certificate No. 7116



ISO 9001 : 2000
Certificate No. 050-100-000-000

Dated : 25/04/2005 H

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RATINGS AND CHARACTERISTIC CURVES

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

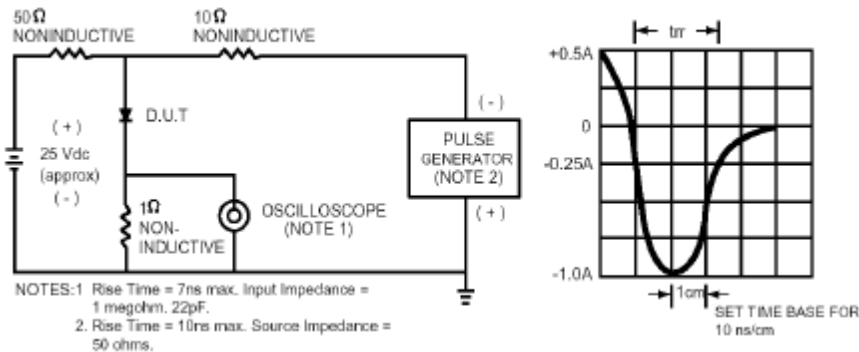


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

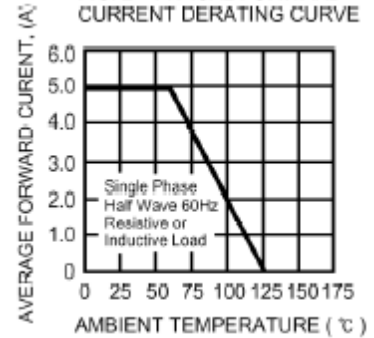


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

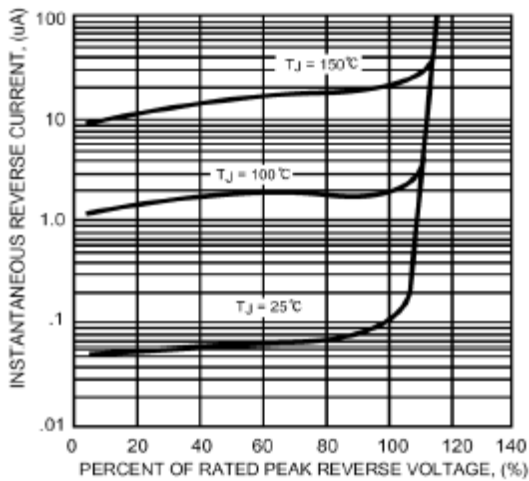


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

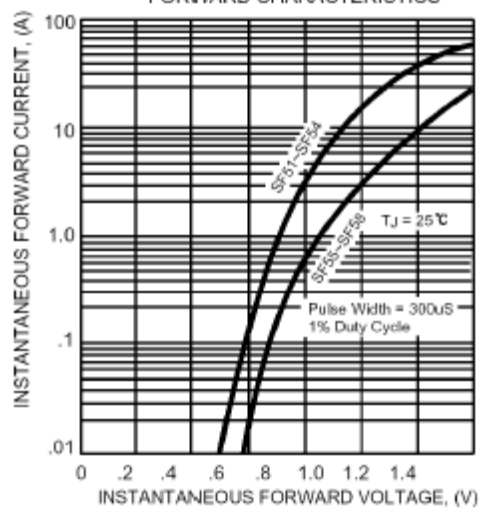


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

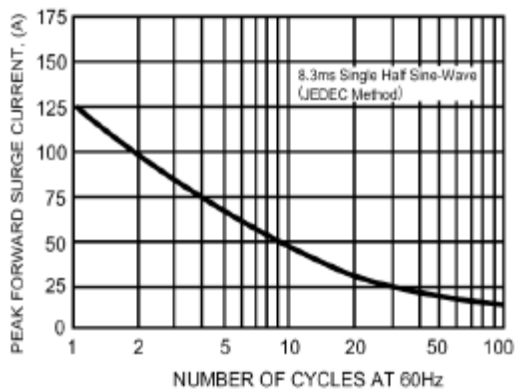
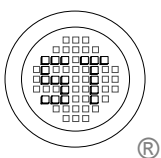
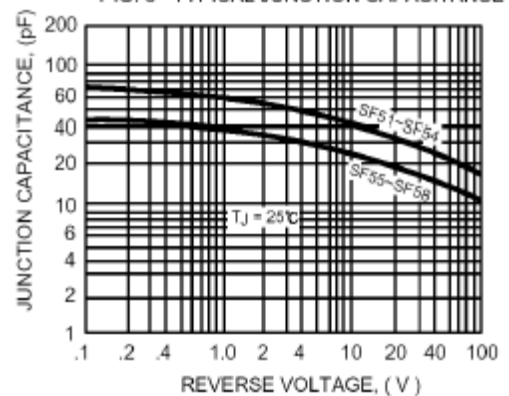


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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