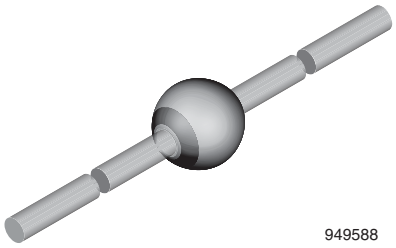
Ultra-Fast Avalanche Sinterglass Diode



FEATURES

- Glass passivated
- Hermetically sealed axial leaded glass envelope
- Low reverse current
- High reverse voltage
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

DESIGN SUPPORT TOOLS

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3D Models Available

APPLICATIONS

- Switched mode power supplies
- High-frequency inverter circuits

MECHANICAL DATA

Case: SOD-64

Terminals: plated axial leads, solderable per MIL-STD-750, method 2026

Polarity: color band denotes cathode end

Mounting position: any

Weight: approx. 858 mg

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
SF5408	SF5408-TR	2500 per 10" tape and reel	12 500
SF5408	SF5408-TAP	2500 per ammopack	12 500

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
SF5400	V_R = 50 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5401	V_R = 100 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5402	V_R = 200 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5403	V_R = 300 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5404	V_R = 400 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5405	V_R = 500 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5406	V_R = 600 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5407	V_R = 800 V; $I_{F(AV)}$ = 3 A	SOD-64
SF5408	V_R = 1000 V; $I_{F(AV)}$ = 3 A	SOD-64

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)					
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**VALUE**	**UNIT**
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	SF5400	$V_R = V_{RRM}$	50	V
		SF5401	$V_R = V_{RRM}$	100	V
		SF5402	$V_R = V_{RRM}$	200	V
		SF5403	$V_R = V_{RRM}$	300	V
		SF5404	$V_R = V_{RRM}$	400	V
		SF5405	$V_R = V_{RRM}$	500	V
		SF5406	$V_R = V_{RRM}$	600	V
		SF5407	$V_R = V_{RRM}$	800	V
		SF5408	$V_R = V_{RRM}$	1000	V
Peak forward surge current	t_p = 2 ms, half sine wave		I_{FSM}	150	A
	t_p = 10 ms, half sine wave			80	
Average forward current			$I_{F(AV)}$	3	A
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C
Non repetitive reverse avalanche energy	$I_{(BR)R}$ = 0.4 A		E_R	10	mJ

MAXIMUM THERMAL RESISTANCE (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Junction ambient	Lead length l = 10 mm, T_L = constant	R_{thJA}	25	K/W
	On PC board with spacing 25 mm	R_{thJA}	70	K/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 3 A	SF5400	V_F	-	-	1.1	V
		SF5401	V_F	-	-	1.1	V
		SF5402	V_F	-	-	1.1	V
		SF5403	V_F	-	-	1.1	V
		SF5404	V_F	-	-	1.1	V
		SF5405	V_F	-	-	1.7	V
		SF5406	V_F	-	-	1.7	V
		SF5407	V_F	-	-	1.7	V
		SF5408	V_F	-	-	1.7	V
Reverse current	$V_R = V_{RRM}$		I_R	-	-	5	µA
	$V_R = V_{RRM}$, T_j = 125 °C		I_R	-	-	50	µA
Reverse breakdown voltage	I_R = 100 µA	SF5400	$V_{(BR)R}$	60	-	-	V
		SF5401	$V_{(BR)R}$	110	-	-	V
		SF5402	$V_{(BR)R}$	220	-	-	V
		SF5403	$V_{(BR)R}$	330	-	-	V
		SF5404	$V_{(BR)R}$	440	-	-	V
		SF5405	$V_{(BR)R}$	550	-	-	V
		SF5406	$V_{(BR)R}$	660	-	-	V
		SF5407	$V_{(BR)R}$	880	-	-	V
		SF5408	$V_{(BR)R}$	1100	-	-	V
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A	SF5400	t_{rr}	-	-	50	ns
		SF5401	t_{rr}	-	-	50	ns
		SF5402	t_{rr}	-	-	50	ns
		SF5403	t_{rr}	-	-	50	ns
		SF5404	t_{rr}	-	-	50	ns
		SF5405	t_{rr}	-	-	75	ns
		SF5406	t_{rr}	-	-	75	ns
		SF5407	t_{rr}	-	-	75	ns
		SF5408	t_{rr}	-	-	75	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

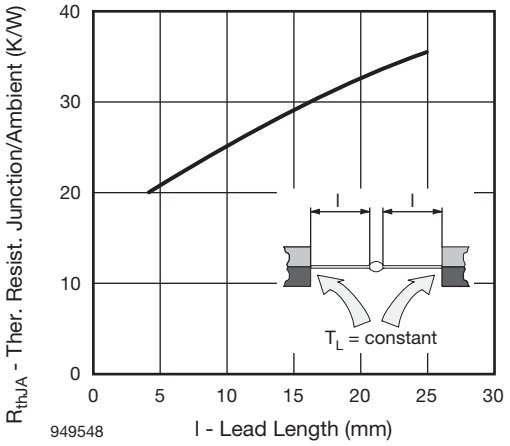


Fig. 1 - Max. Thermal Resistance vs. Lead Length

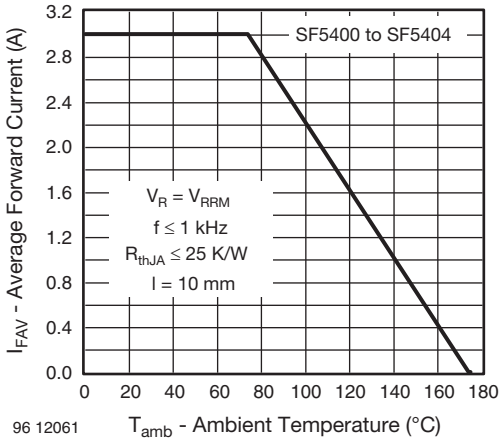


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

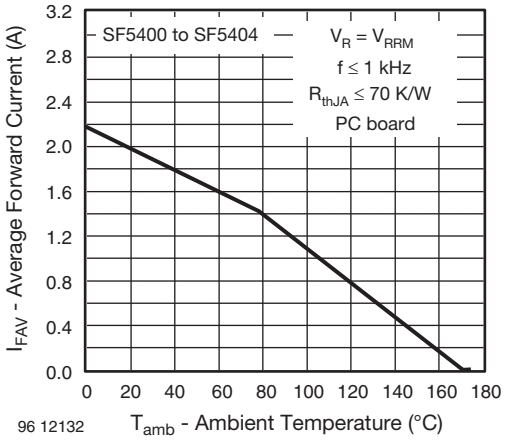


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

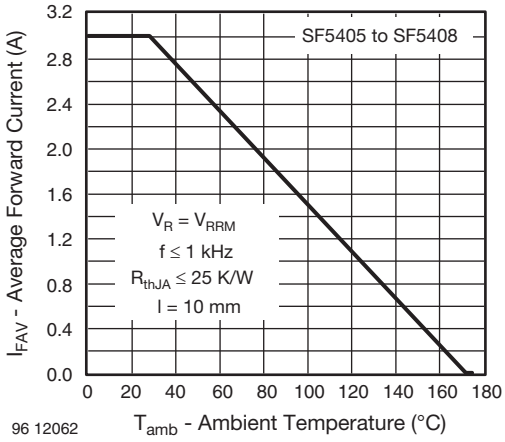


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

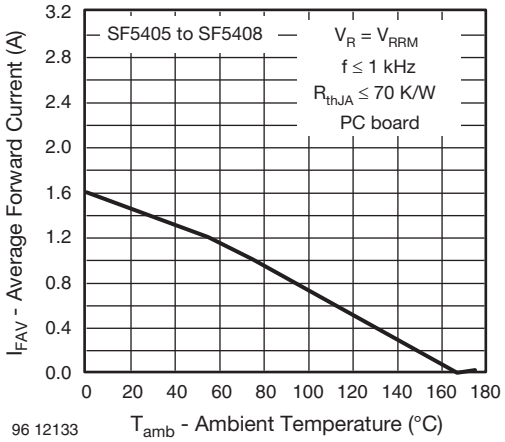


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

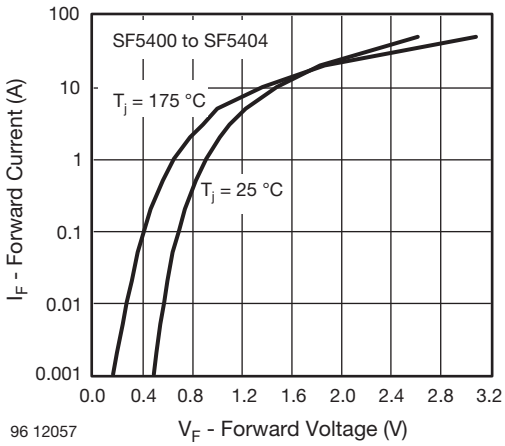


Fig. 6 - Max. Forward Current vs. Forward Voltage

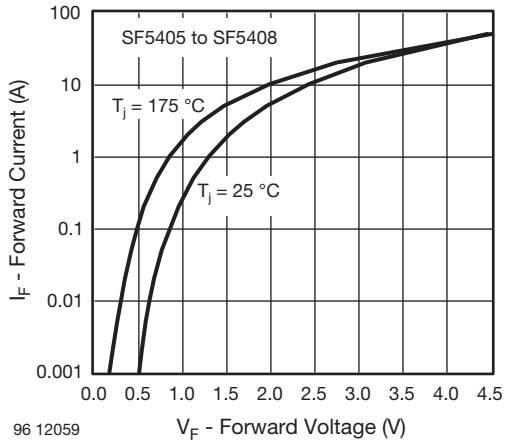


Fig. 7 - Max. Forward Current vs. Forward Voltage

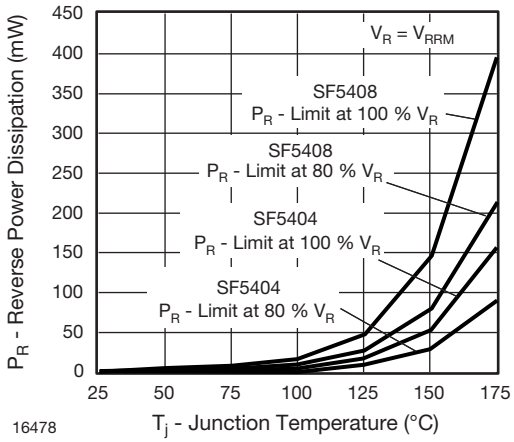


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

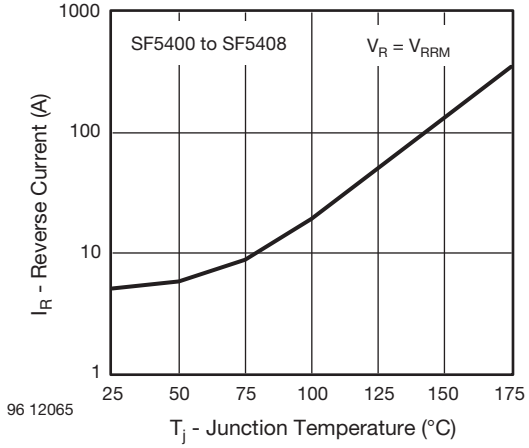


Fig. 8 - Max. Reverse Current vs. Junction Temperature

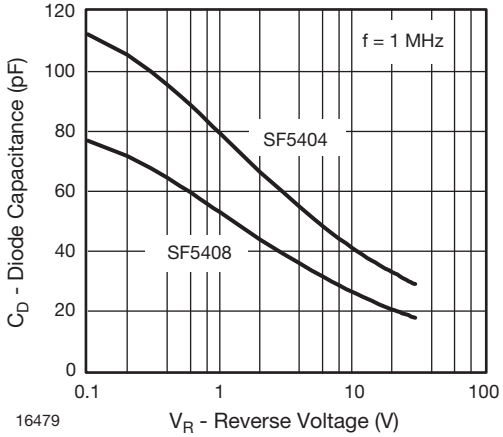
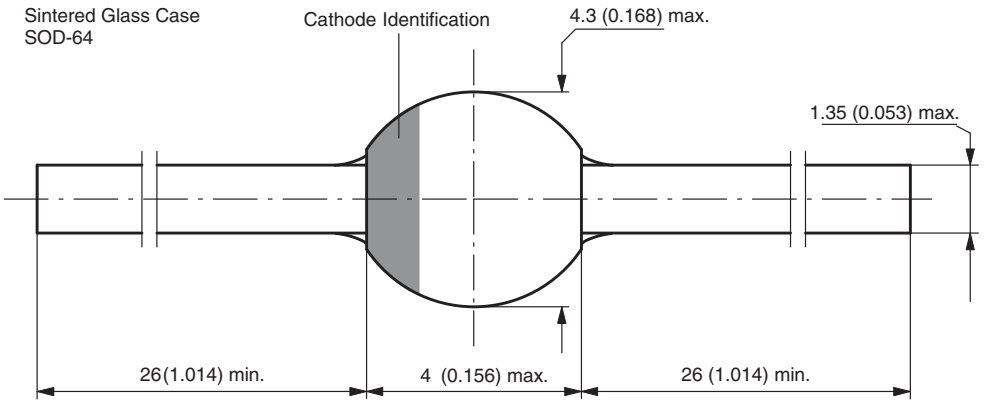


Fig. 10 - Diode Capacitance vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches): **SOD-64**



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