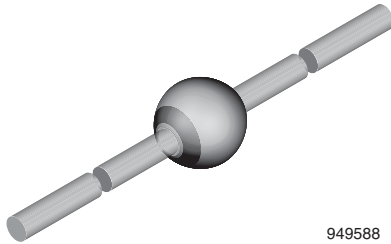




## Ultra-Fast Avalanche Sinterglass Diode



949588

### 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### 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 ammpack	12 500

### PARTS TABLE

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

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25 \text{ }^\circ\text{C}$ , 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



ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Peak forward surge current	$t_p = 2\text{ ms}$ , half sine wave		$I_{FSM}$	150	A
	$t_p = 10\text{ ms}$ , half sine wave			80	
Average forward current			$I_{F(AV)}$	3	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	$^{\circ}\text{C}$
Non repetitive reverse avalanche energy	$I_{(BR)R} = 0.4\text{ A}$		$E_R$	10	mJ

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

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 3\text{ A}$	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
Reverse current	$V_R = V_{RRM}$		$I_R$	-	-	5	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_j = 125\text{ }^{\circ}\text{C}$		$I_R$	-	-	50	$\mu\text{A}$
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	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
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$	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** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

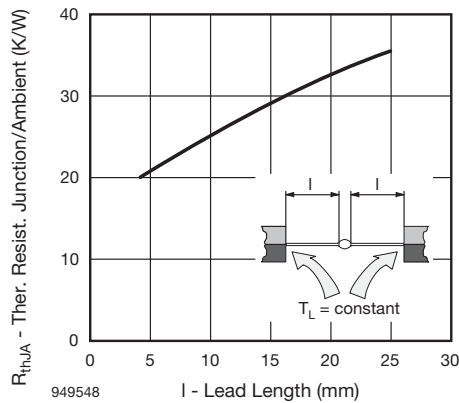


Fig. 1 - Max. Thermal Resistance vs. Lead Length

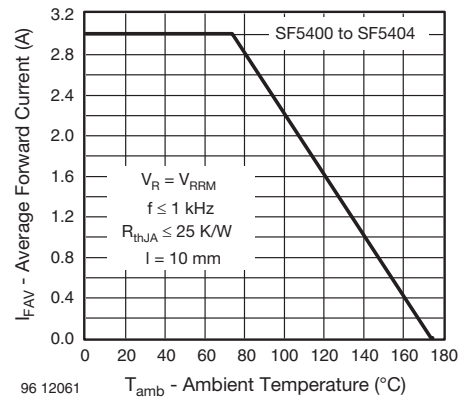


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

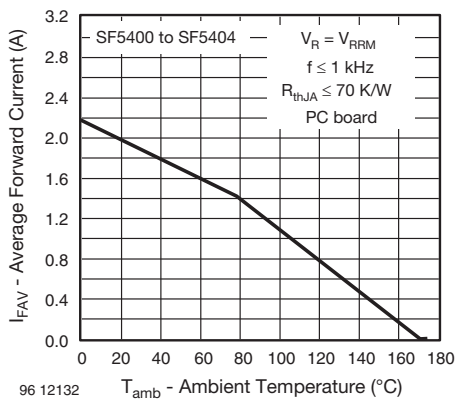


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

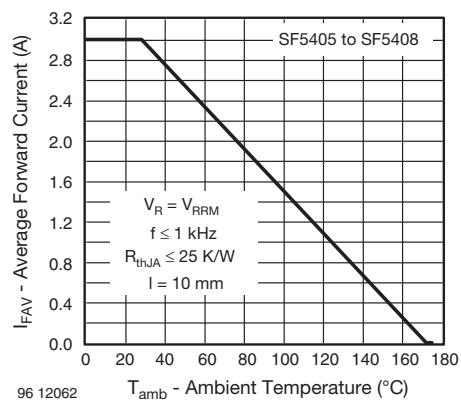


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

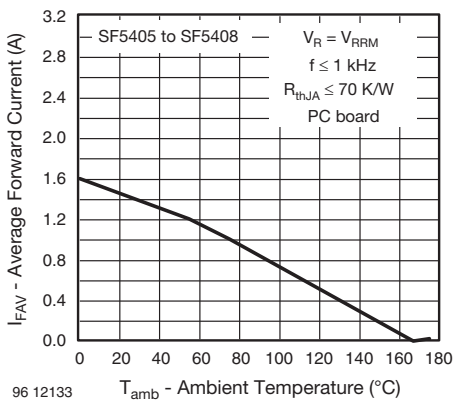


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

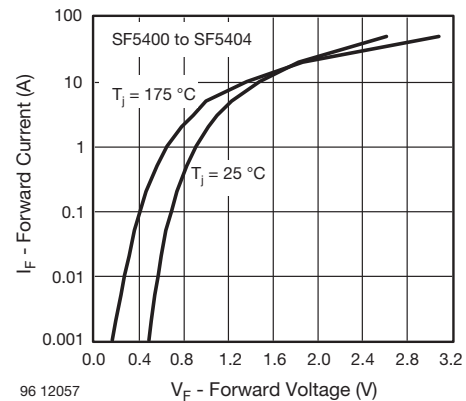


Fig. 6 - Max. Forward Current vs. Forward Voltage

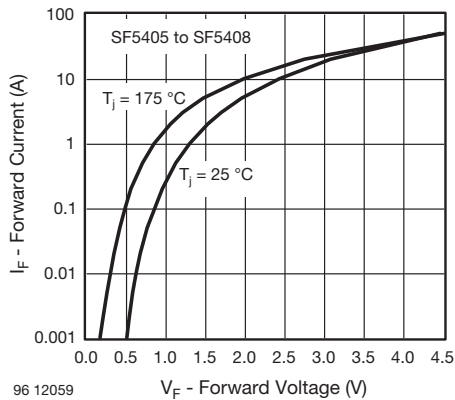


Fig. 7 - Max. Forward Current vs. Forward Voltage

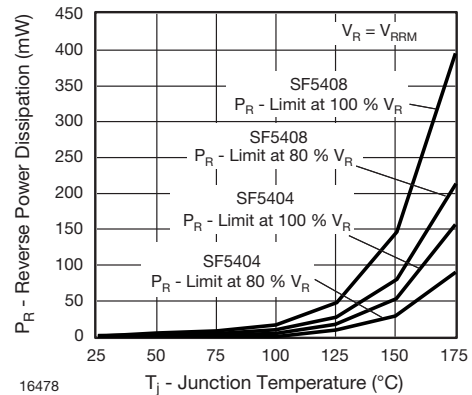


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

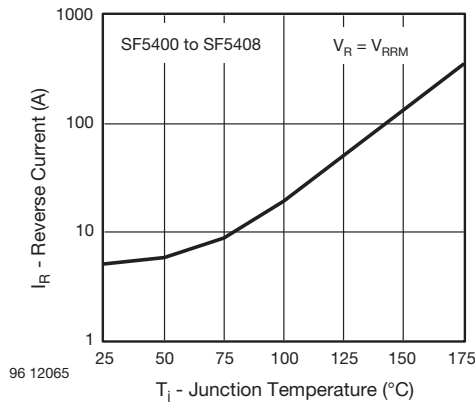


Fig. 8 - Max. Reverse Current vs. Junction Temperature

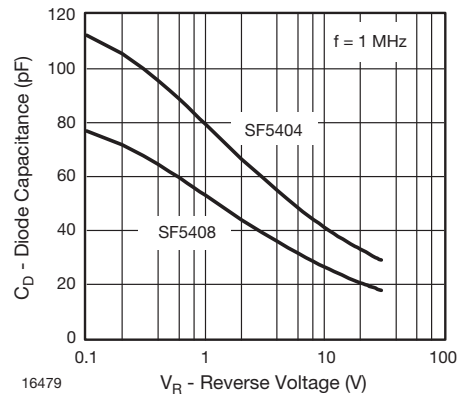
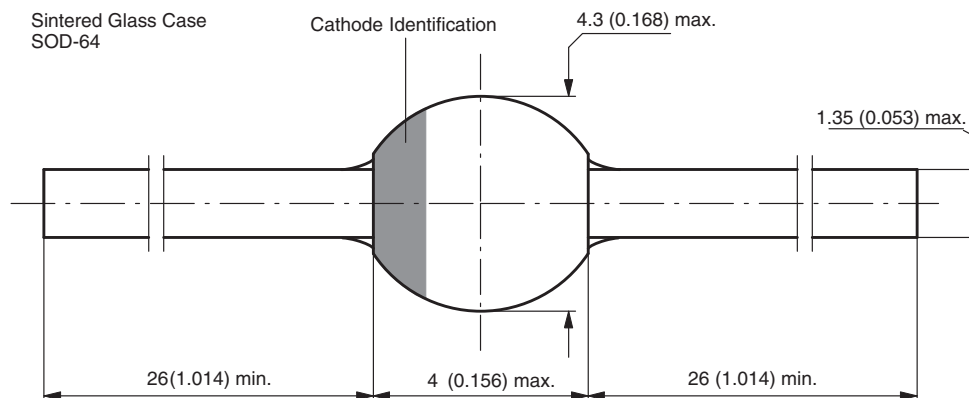


Fig. 10 - Diode Capacitance vs. Reverse Voltage

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



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 Rev. 3 - Date: 09.February.2005  
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