

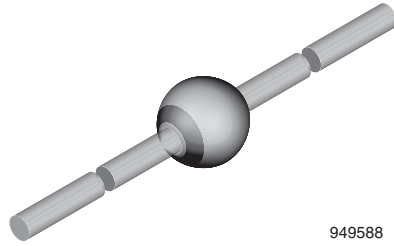


# THE DATASHEET OF SF5405-TR





# Ultra-Fast Avalanche Sinterglass Diode



949588

### DESIGN SUPPORT TOOLS

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### 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 <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	SF5400	V <sub>R</sub> = V <sub>RRM</sub>	50	V
		SF5401	V <sub>R</sub> = V <sub>RRM</sub>	100	V
		SF5402	V <sub>R</sub> = V <sub>RRM</sub>	200	V
		SF5403	V <sub>R</sub> = V <sub>RRM</sub>	300	V
		SF5404	V <sub>R</sub> = V <sub>RRM</sub>	400	V
		SF5405	V <sub>R</sub> = V <sub>RRM</sub>	500	V
		SF5406	V <sub>R</sub> = V <sub>RRM</sub>	600	V
		SF5407	V <sub>R</sub> = V <sub>RRM</sub>	800	V
		SF5408	V <sub>R</sub> = V <sub>RRM</sub>	1000	V
Peak forward surge current	t <sub>p</sub> = 2 ms, half sine wave		I <sub>FSM</sub>	150	A
	t <sub>p</sub> = 10 ms, half sine wave			80	
Average forward current			I <sub>F(AV)</sub>	3	A
Junction and storage temperature range			T <sub>j</sub> = T <sub>stg</sub>	-55 to +175	°C
Non repetitive reverse avalanche energy	I <sub>(BR)R</sub> = 0.4 A		E <sub>R</sub>	10	mJ

MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length l = 10 mm, T <sub>L</sub> = constant	R <sub>thJA</sub>	25	K/W
	On PC board with spacing 25 mm	R <sub>thJA</sub>	70	K/W

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 3 A	SF5400	V <sub>F</sub>	-	-	1.1	V
		SF5401	V <sub>F</sub>	-	-	1.1	V
		SF5402	V <sub>F</sub>	-	-	1.1	V
		SF5403	V <sub>F</sub>	-	-	1.1	V
		SF5404	V <sub>F</sub>	-	-	1.1	V
		SF5405	V <sub>F</sub>	-	-	1.7	V
		SF5406	V <sub>F</sub>	-	-	1.7	V
		SF5407	V <sub>F</sub>	-	-	1.7	V
		SF5408	V <sub>F</sub>	-	-	1.7	V
Reverse current	V <sub>R</sub> = V <sub>RRM</sub>		I <sub>R</sub>	-	-	5	µA
	V <sub>R</sub> = V <sub>RRM</sub> , T <sub>j</sub> = 125 °C		I <sub>R</sub>	-	-	50	µA
Reverse breakdown voltage	I <sub>R</sub> = 100 µA	SF5400	V <sub>(BR)R</sub>	60	-	-	V
		SF5401	V <sub>(BR)R</sub>	110	-	-	V
		SF5402	V <sub>(BR)R</sub>	220	-	-	V
		SF5403	V <sub>(BR)R</sub>	330	-	-	V
		SF5404	V <sub>(BR)R</sub>	440	-	-	V
		SF5405	V <sub>(BR)R</sub>	550	-	-	V
		SF5406	V <sub>(BR)R</sub>	660	-	-	V
		SF5407	V <sub>(BR)R</sub>	880	-	-	V
		SF5408	V <sub>(BR)R</sub>	1100	-	-	V
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, i <sub>R</sub> = 0.25 A	SF5400	t <sub>rr</sub>	-	-	50	ns
		SF5401	t <sub>rr</sub>	-	-	50	ns
		SF5402	t <sub>rr</sub>	-	-	50	ns
		SF5403	t <sub>rr</sub>	-	-	50	ns
		SF5404	t <sub>rr</sub>	-	-	50	ns
		SF5405	t <sub>rr</sub>	-	-	75	ns
		SF5406	t <sub>rr</sub>	-	-	75	ns
		SF5407	t <sub>rr</sub>	-	-	75	ns
		SF5408	t <sub>rr</sub>	-	-	75	ns



TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

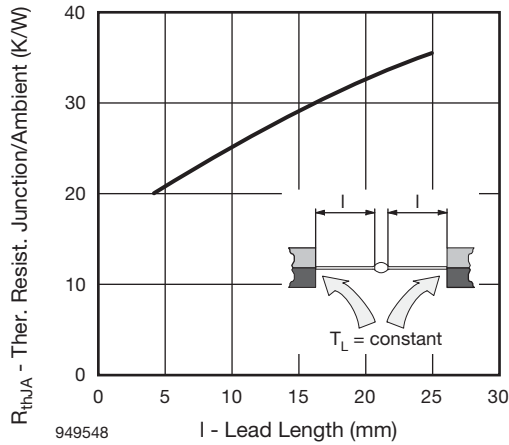


Fig. 1 - Max. Thermal Resistance vs. Lead Length

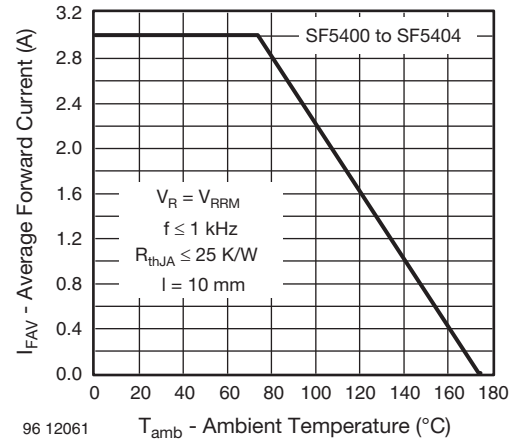


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

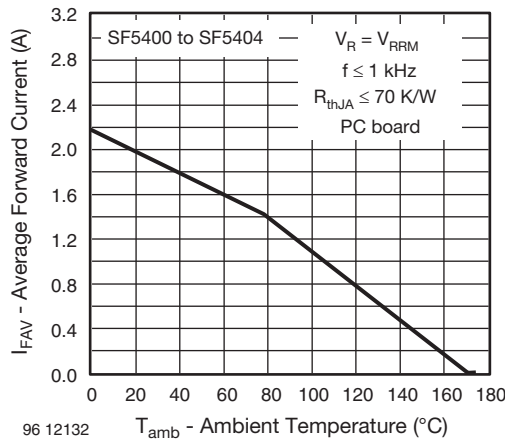


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

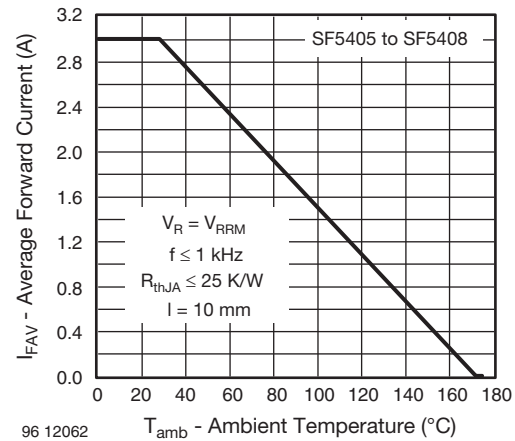


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

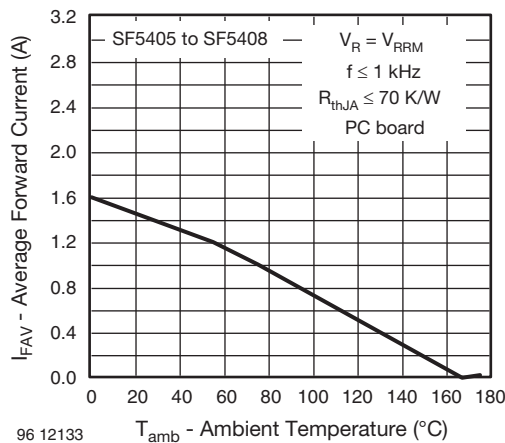


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

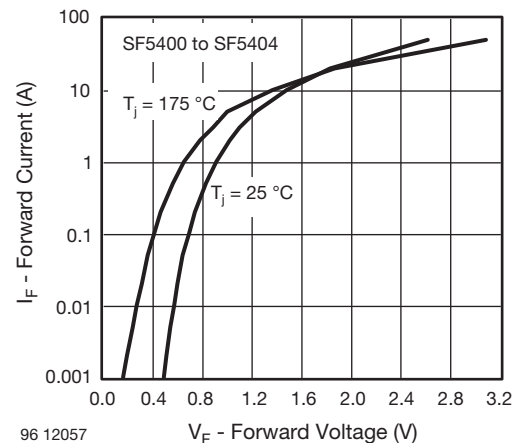


Fig. 6 - Max. Forward Current vs. Forward Voltage

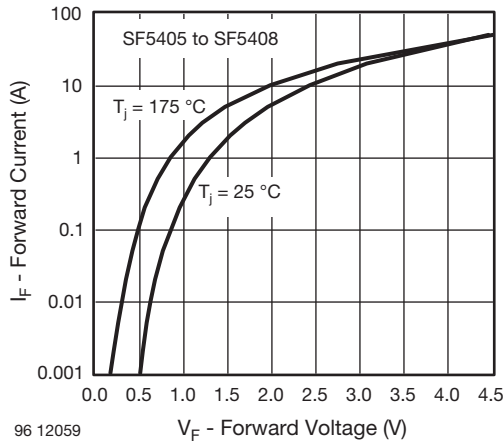


Fig. 7 - Max. Forward Current vs. Forward Voltage

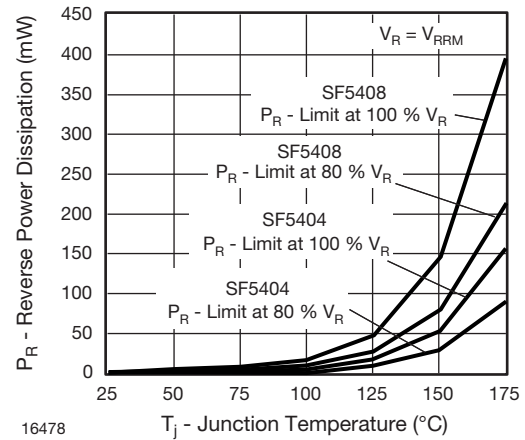


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

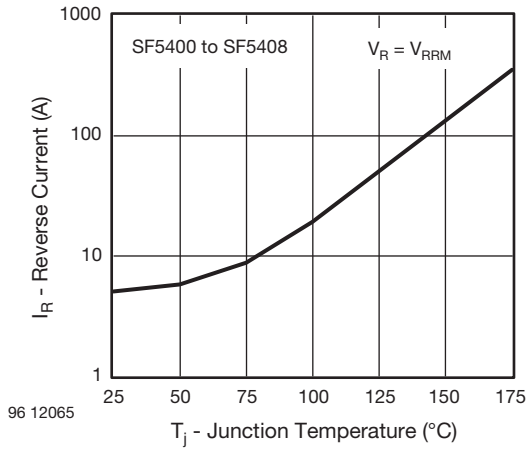


Fig. 8 - Max. Reverse Current vs. Junction Temperature

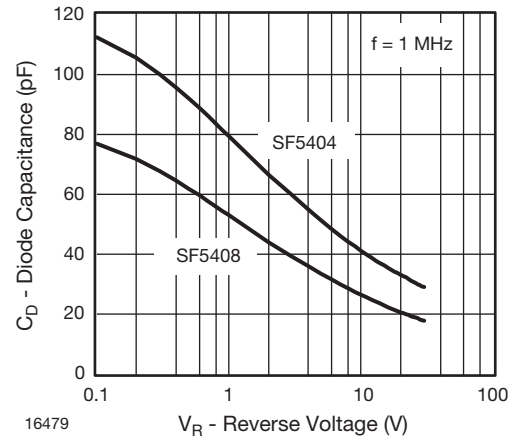
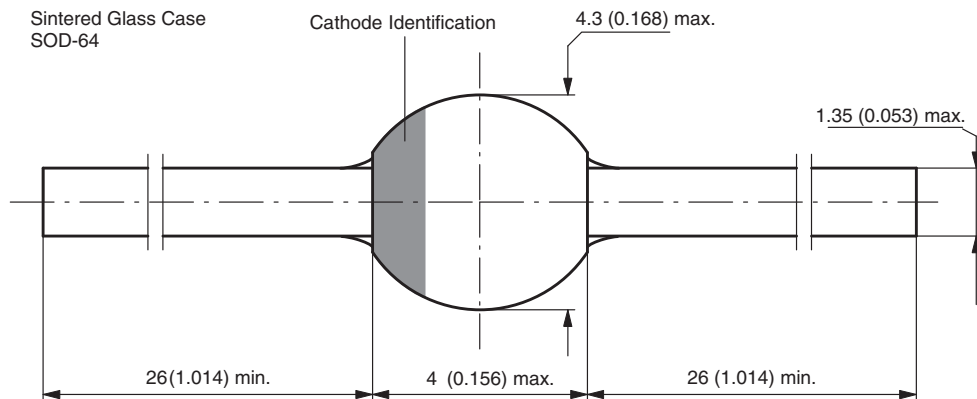


Fig. 10 - Diode Capacitance vs. Reverse Voltage

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



Document-No.: 6.563-5006.4-4  
 Rev. 3 - Date: 09.February.2005  
 94 9587



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