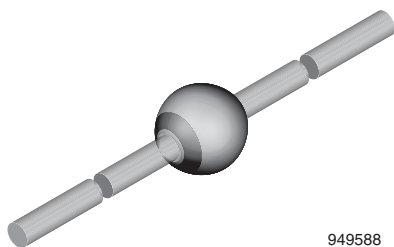




Ultra-Fast Avalanche Sinterglass Diode



949588

DESIGN SUPPORT TOOLS

[click logo to get started](#)

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

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
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
		SF5408	V_F	-	-	1.7	V
Reverse current	$V_R = V_{RRM}$		I_R	-	-	5	μA
	$V_R = V_{RRM}$, $T_j = 125\text{ }^{\circ}\text{C}$		I_R	-	-	50	μA
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
		SF5408	$V_{(BR)R}$	1100	-	-	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

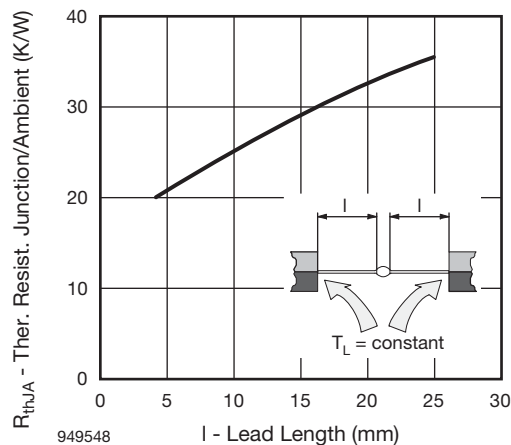
**TYPICAL CHARACTERISTICS** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

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

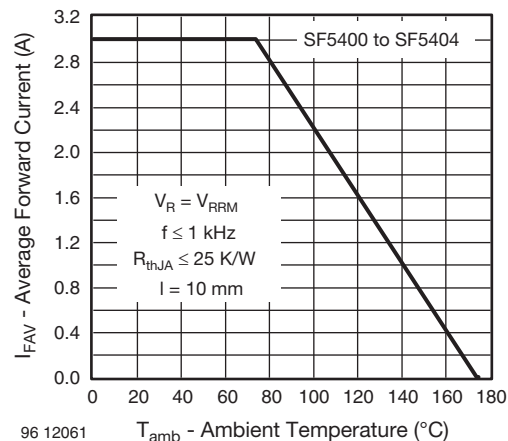


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

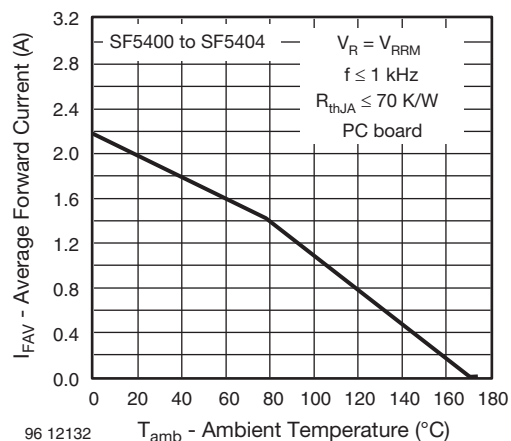


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

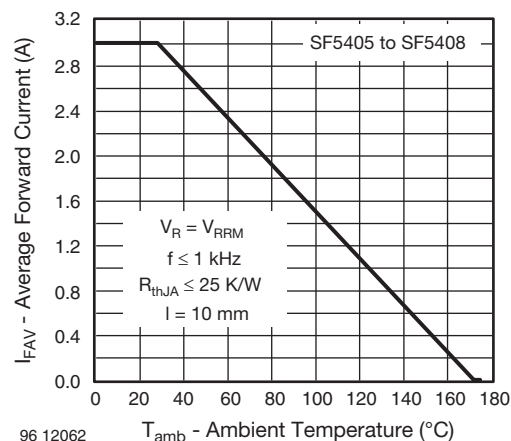


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

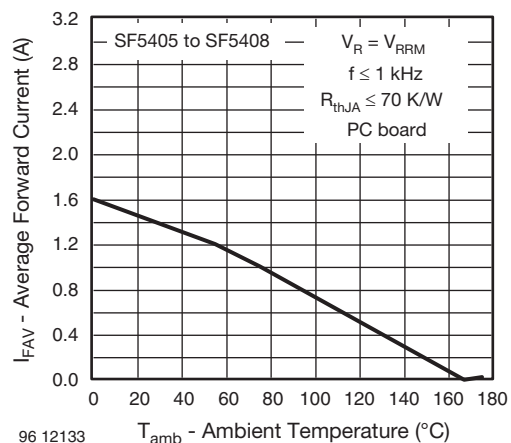


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

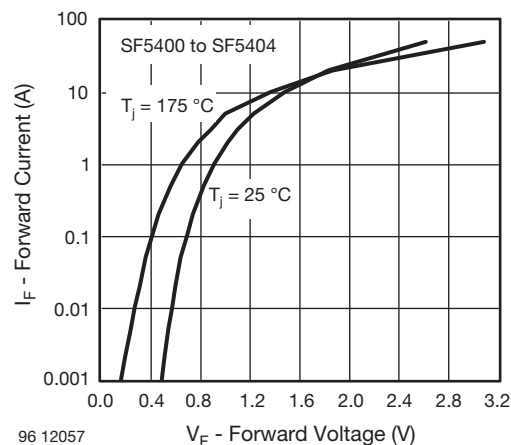


Fig. 6 - Max. Forward Current vs. Forward Voltage

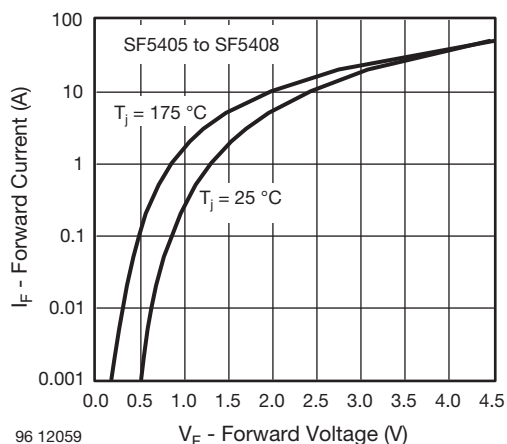


Fig. 7 - Max. Forward Current vs. Forward Voltage

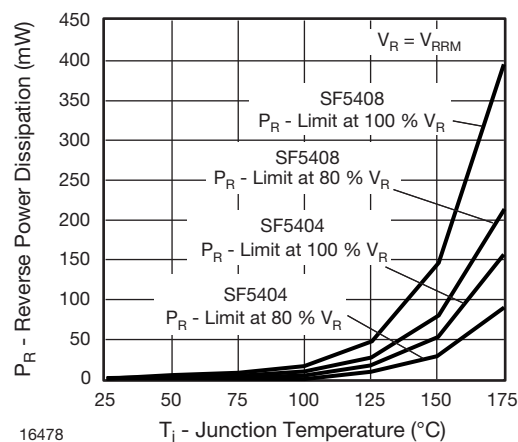


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

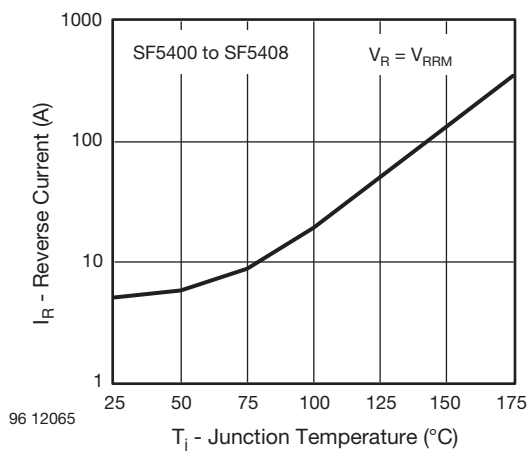


Fig. 8 - Max. Reverse Current vs. Junction Temperature

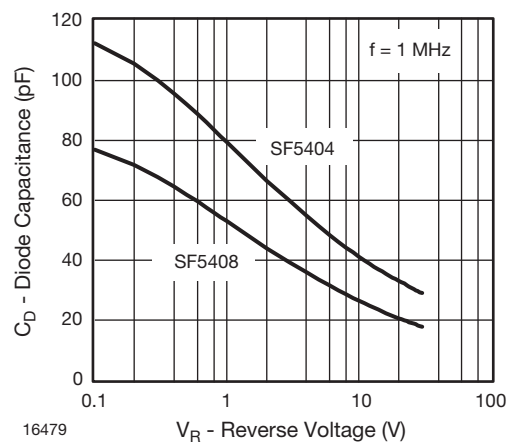
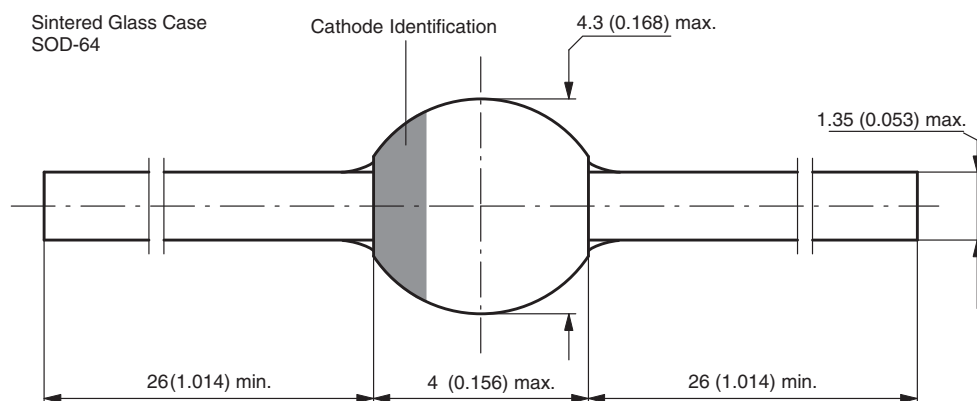


Fig. 10 - Diode Capacitance vs. Reverse Voltage

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

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



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.