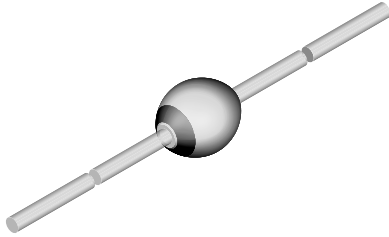


## Standard Avalanche Sinterglass Diode



949539

### FEATURES

- Controlled avalanche characteristics
- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- High surge current capability
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



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

### MECHANICAL DATA

**Case:** SOD-57

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

**Polarity:** color band denotes cathode end

**Mounting position:** any

**Weight:** approx. 369 mg

### APPLICATIONS

- General purpose

### PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BY527	$V_R = 800\text{ V}; I_{FAV} = 2\text{ A}$	SOD-57

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage, non repetitive	$I_R = 100\text{ }\mu\text{A}$	$V_{RSM}$	1250	V
Reverse voltage	See electrical characteristics	$V_R$	800	V
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave	$I_{FSM}$	50	A
Repetitive peak forward current		$I_{FRM}$	12	A
Average forward current	$\phi = 180^\circ$	$I_{FAV}$	2	A
Pulse avalanche peak power	$T_j = 175\text{ }^\circ\text{C}$ , $t_p = 20\text{ }\mu\text{s}$ , half sinus wave	$P_R$	1000	W
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R} = 1\text{ A}$ , $T_j = 175\text{ }^\circ\text{C}$	$E_R$	20	mJ
$i^2t$ rating		$i^2t$	8	$\text{A}^2\text{ s}$
Junction and storage temperature range		$T_j = T_{stg}$	-55 to +175	$^\circ\text{C}$

### MAXIMUM THERMAL RESISTANCE ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length $l = 10\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	45	K/W
	On PC board with spacing 25 mm	$R_{thJA}$	100	K/W

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX	UNIT
Forward voltage	$I_F = 1\text{ A}$	$V_F$	-	0.9	1	V
	$I_F = 10\text{ A}$	$V_F$	-	-	1.65	V
Reverse current	$V_R = 800\text{ V}$	$I_R$	-	0.1	1	$\mu\text{A}$
	$V_R = 800\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	$I_R$	-	5	10	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01, t_p = 0.3\text{ ms}$	$V_{(BR)}$	1250	-	-	V
Diode capacitance	$V_R = 4\text{ V}, f = 1\text{ MHz}$	$C_D$	-	16	-	pF
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$	$t_{rr}$	-	-	4	$\mu\text{s}$
	$I_F = 1\text{ A}, di/dt = 5\text{ A}/\mu\text{s}, V_R = 50\text{ V}$	$t_{rr}$	-	-	4	$\mu\text{s}$
Reverse recovery charge	$I_F = 1\text{ A}, di/dt = 5\text{ A}/\mu\text{s}$	$Q_{rr}$	-	-	3	$\mu\text{C}$

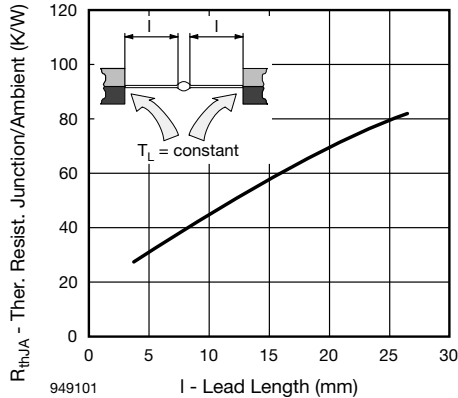
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

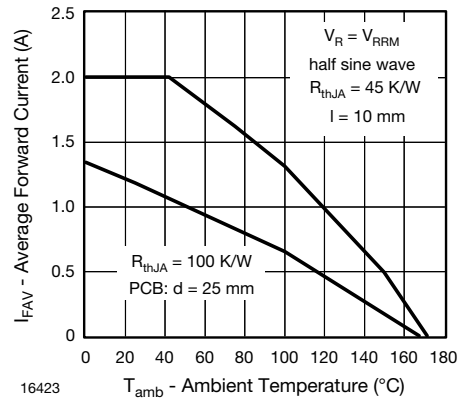


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

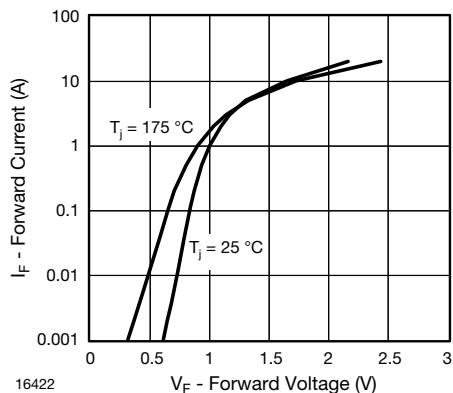


Fig. 2 - Forward Current vs. Forward Voltage

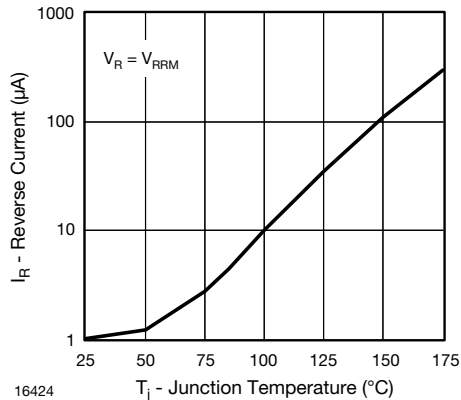


Fig. 4 - Reverse Current vs. Junction Temperature

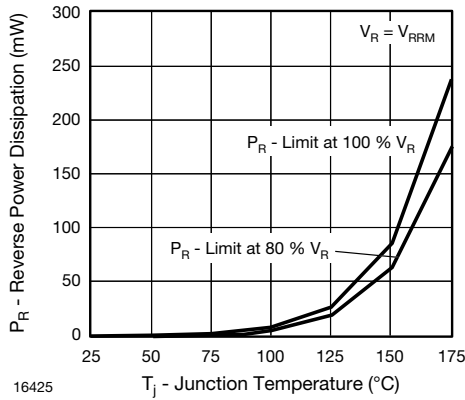


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

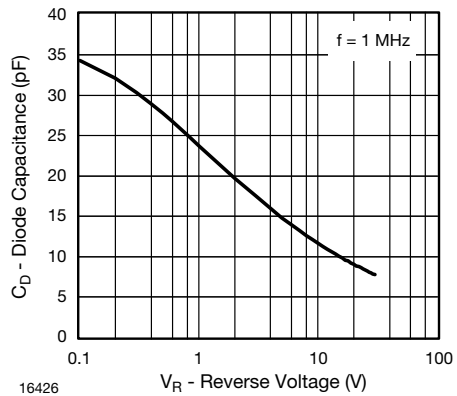


Fig. 6 - Diode Capacitance vs. Reverse Voltage

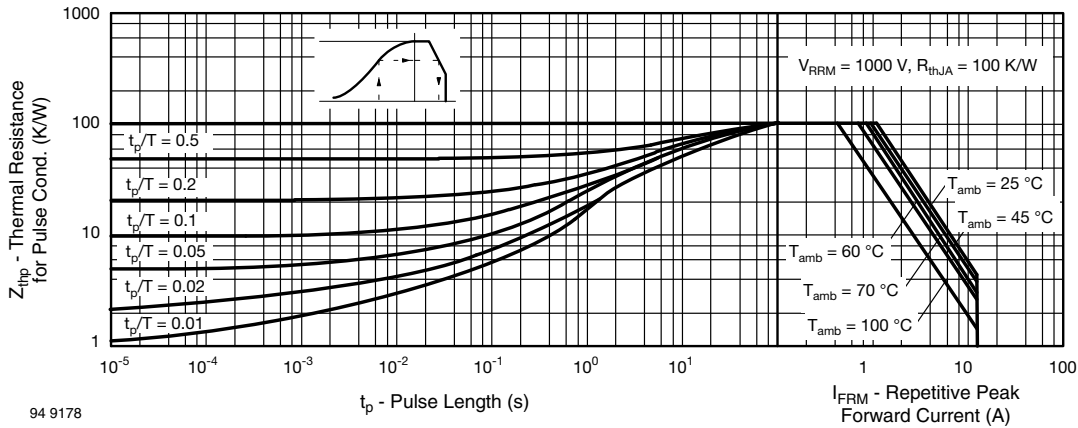
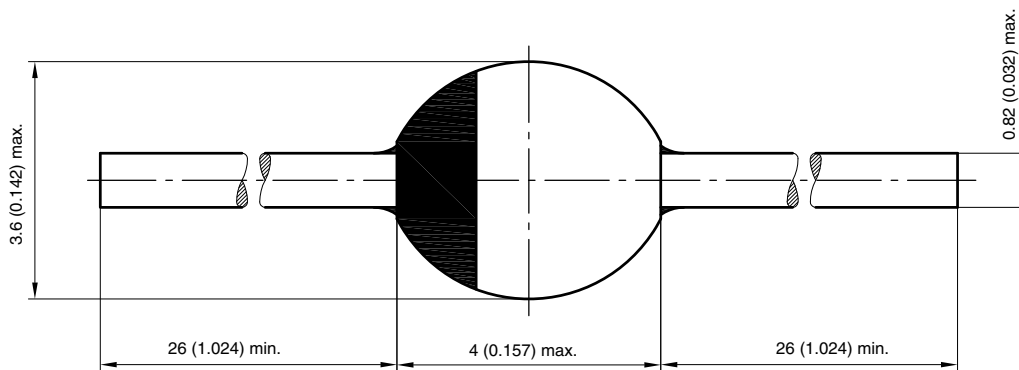


Fig. 7 - Thermal Response

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-57**



20543  
 Rev. 3 - Date: 09.February 2005  
 Document no.:6.563-5006.3-4



## Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.