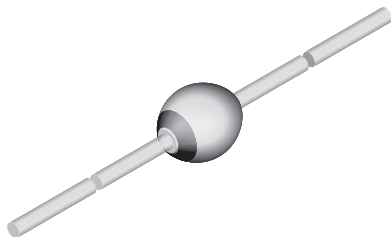


## Ultra-Fast Avalanche Sinterglass Diode



949539

### FEATURES

- Very low switching losses
- Glass passivated
- High reverse voltage
- Hermetically sealed axial-leaded glass envelope
- 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

- Switched mode power supplies
- High-frequency inverter circuits

### PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
SF1200	$V_R = 1200\text{ V}; I_{FAV} = 1\text{ A}$	SOD-57
SF1600	$V_R = 1600\text{ V}; I_{FAV} = 1\text{ A}$	SOD-57

### 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	SF1200	$V_R = V_{RRM}$	1200	V
		SF1600	$V_R = V_{RRM}$	1600	V
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave		$I_{FSM}$	30	A
Average forward current	Half sine wave, $V_R = V_{RRM}$ , $R_{thJA} = 45\text{ k/W}$		$I_{FAV}$	1	A
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R} = 400\text{ mA}$ , inductive load		$E_R$	10	mJ
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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$		$V_F$	-	-	3.4	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	$I_R = 100\text{ }\mu\text{A}$	SF1200	$V_{(BR)R}$	1250	-	-	V
		SF1600	$V_{(BR)R}$	1650	-	-	V
Reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$		$t_{rr}$	-	-	75	ns

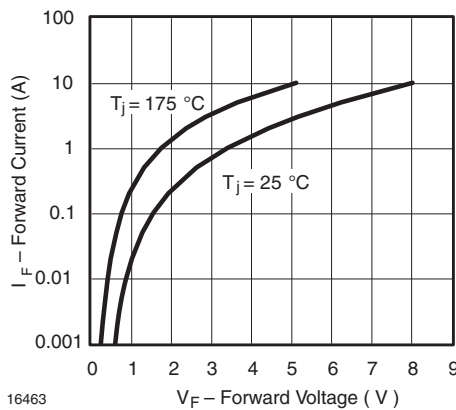
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

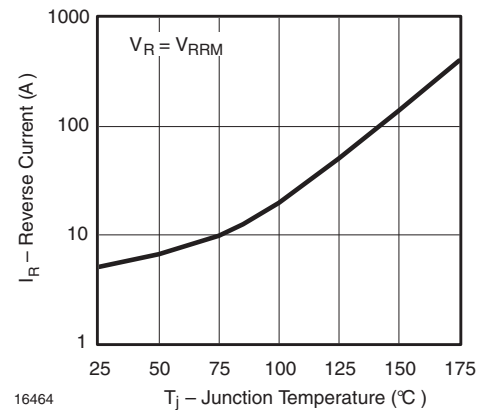


Fig. 3 - Reverse Current vs. Junction Temperature

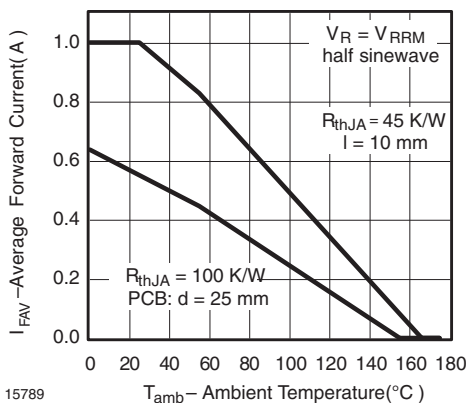


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

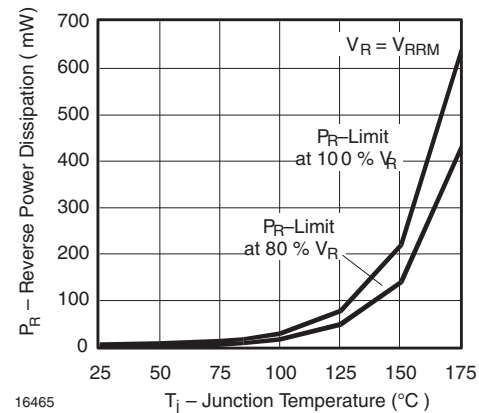


Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature

# SF1200, SF1600

Vishay Semiconductors Ultra-Fast Avalanche Sinterglass Diode

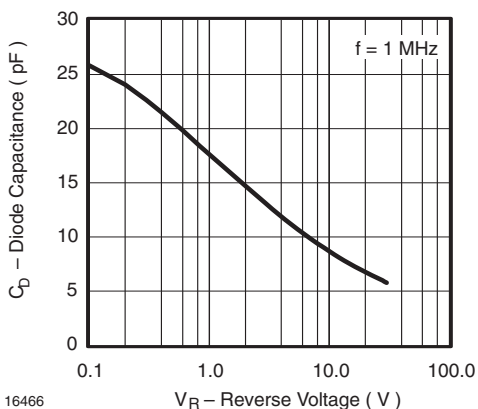
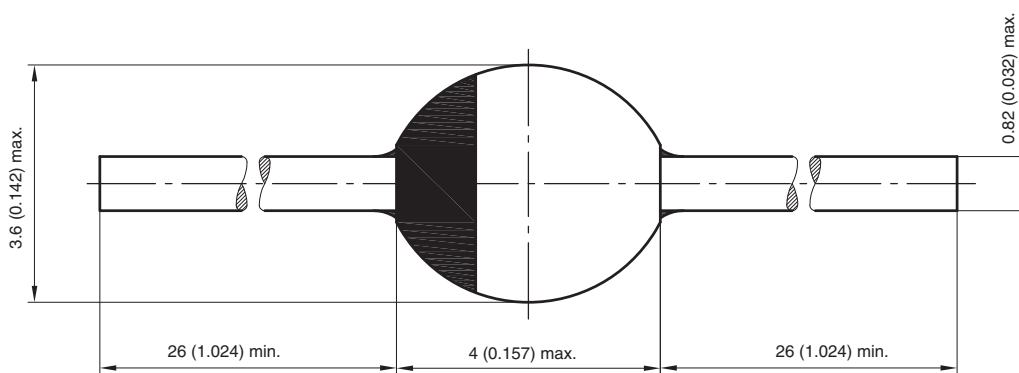


Fig. 5 - Diode Capacitance vs. Reverse Voltage

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



20543  
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