



# Ultrafast Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

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### FEATURES

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

ORDERING INFORMATION (Example)			
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
SF1600	SF1600-TR	5000 per 10" tape and reel	25 000
SF1600	SF1600-TAP	5000 per ammpack	25 000

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
SF1200	$V_R = 1200\text{ V}; I_{F(AV)} = 1\text{ A}$	SOD-57
SF1600	$V_R = 1600\text{ V}; I_{F(AV)} = 1\text{ A}$	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, $V_R = V_{RRM}$ , $R_{thJA} = 45\text{ K/W}$		$I_{F(AV)}$	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	$^\circ\text{C}$

<b>MAXIMUM THERMAL RESISTANCE</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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

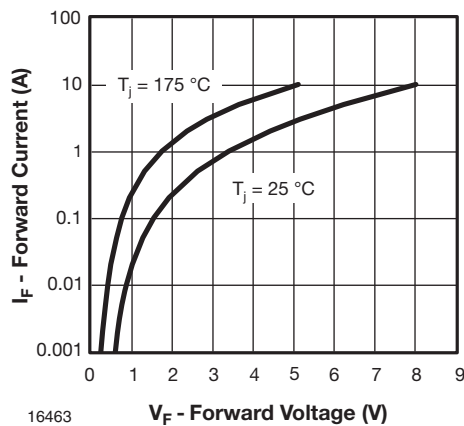
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

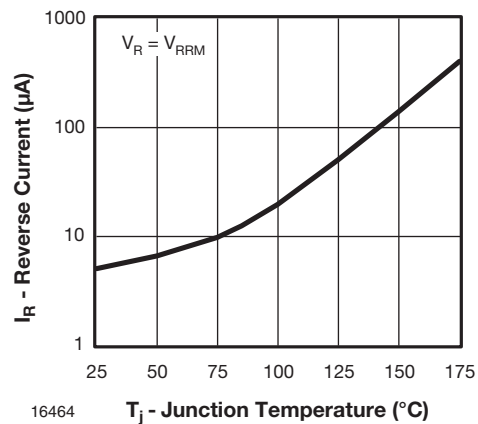


Fig. 3 - Reverse Current vs. Junction Temperature

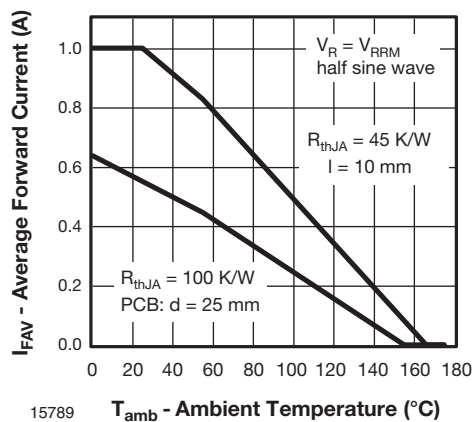


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

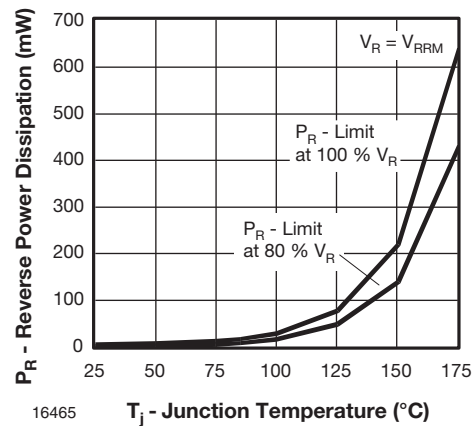


Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature

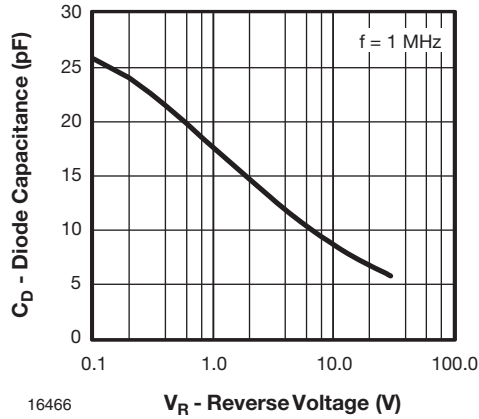
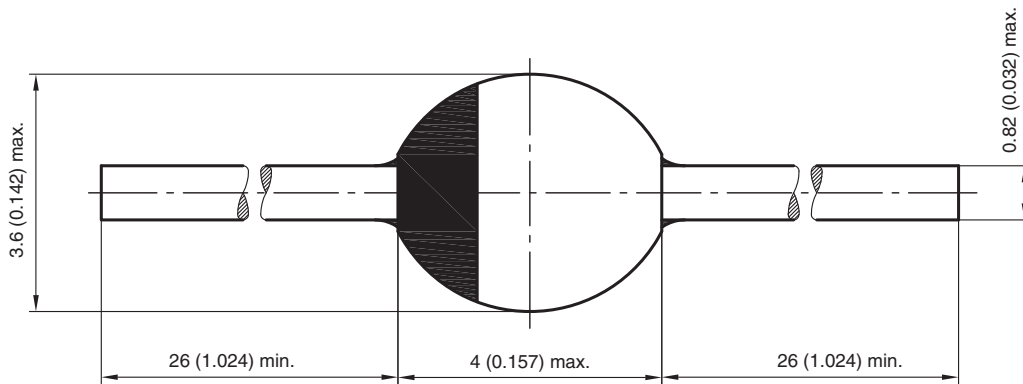


Fig. 5 - Diode Capacitance vs. Reverse Voltage

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



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