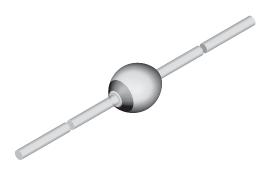


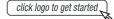
# Vishay Semiconductors

# **Ultrafast Avalanche Sinterglass Diode**



949539

#### **DESIGN SUPPORT TOOLS**





#### **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

#### **FEATURES**

- · Very low switching losses
- · Glass passivated
- High reverse voltage
- Hermetically sealed axial-leaded glass envelope
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

# Ph



ROHS
COMPLIANT
HALOGEN
FREE

#### **APPLICATIONS**

- Switched mode power supplies
- High-frequency inverter circuits

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

PARTS TABLE					
PART	TYPE DIFFERENTIATION	PACKAGE			
SF1200	V <sub>R</sub> = 1200 V; I <sub>F(AV)</sub> = 1 A	SOD-57			
SF1600	V <sub>R</sub> = 1600 V; I <sub>F(AV)</sub> = 1 A	SOD-57			

<b>ABSOLUTE MAXIMUM RATINGS</b> (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	SF1200	$V_R = V_{RRM}$	1200	V		
neverse voltage = repetitive peak reverse voltage	See electrical characteristics	SF1600	$V_R = V_{RRM}$	1600	V		
Peak forward surge current	$t_p = 10$ ms, half sine wave		I <sub>FSM</sub>	30	Α		
Average forward current	Half sine wave, $V_R = V_{RRM}$ , $R_{thJA} = 45 \text{ K/W}$		I <sub>F(AV)</sub>	1	Α		
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off	$I_{(BR)R} = 400$ mA, inductive load		E <sub>R</sub>	10	mJ		
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C		

# Vishay Semiconductors

MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER TEST CONDITION		SYMBOL	VALUE	UNIT	
Junction ambient	Lead length I = 10 mm, T <sub>L</sub> = constant	$R_{thJA}$	45	K/W	

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A		$V_{F}$	-	-	3.4	V
Reverse current	$V_R = V_{RRM}$		I <sub>R</sub>	-	-	5	μA
	$V_R = V_{RRM}$ , $T_j = 125$ °C		I <sub>R</sub>	-	-	50	μA
Reverse breakdown voltage	I <sub>R</sub> = 100 μA	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 <sub>rr</sub>	-	-	75	ns

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

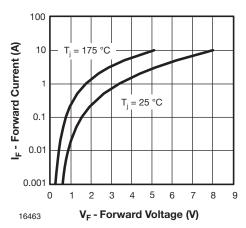


Fig. 1 - Forward Current vs. Forward Voltage

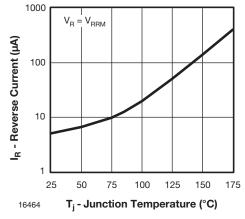


Fig. 3 - Reverse Current vs. Junction Temperature

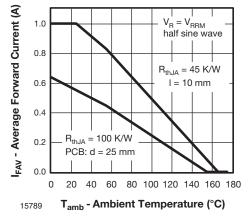


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

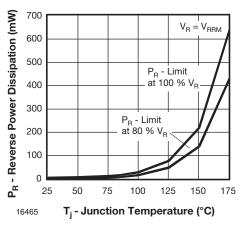


Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature



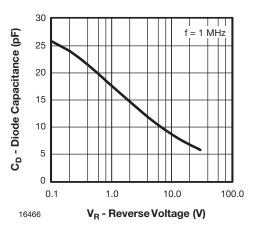
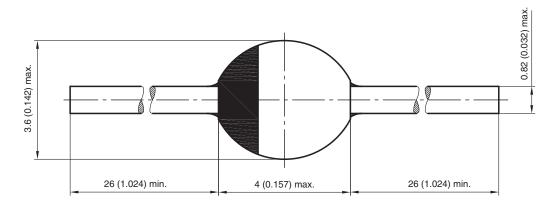


Fig. 5 - Diode Capacitance vs. Reverse Voltage

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



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