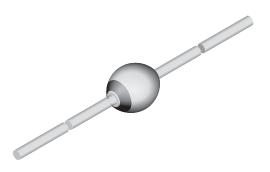


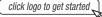
Vishay Semiconductors

Ultrafast Avalanche Sinterglass Diode



949539

DESIGN SUPPORT TOOLS





FEATURES

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



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 ammopack	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 V; I _{F(AV)} = 1 A	SOD-57			

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION PART		SYMBOL	VALUE	UNIT		
Developed the second se	See electrical characteristics	SF1200	$V_R = V_{RRM}$	1200	V		
Reverse 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 _{FSM}	30	Α		
Average forward current	Half sine wave, $V_R = V_{RRM}$, $R_{thJA} = 45 \text{ K/W}$		I _{F(AV)}	1	Α		
Max. pulse energy in avalanche mode, non repetitive (inductive load switch off	$I_{(BR)R}$ = 400 mA, inductive load		E _R	10	mJ		
Junction and storage temperature range			$T_j = T_{stg}$	-55 to +175	°C		

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

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 1 A		V_{F}	-	-	3.4	V
Reverse current	$V_R = V_{RRM}$		I _R	-	-	5	μA
	$V_R = V_{RRM}$, $T_j = 125$ °C		I _R	-	-	50	μA
Reverse breakdown voltage	I _R = 100 μA	SF1200	V _{(BR)R}	1250	-	-	V
		SF1600	V _{(BR)R}	1650	-	-	V
Reverse recovery time	I _F = 0.5 A, I _R = 1 A, i _R = 0.25 A		t _{rr}	-	-	75	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

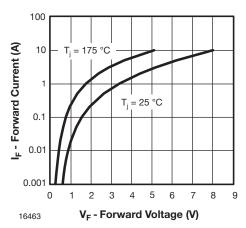
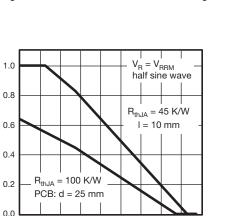


Fig. 1 - Forward Current vs. Forward Voltage



I_{FAV} - Average Forward Current (A)

15789 **T**_{amb} - Ambient Temperature (°C)
Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

60 80 100 120 140 160 180

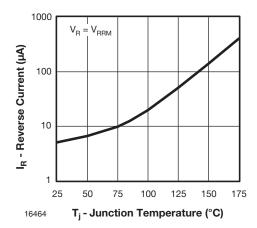


Fig. 3 - Reverse Current vs. Junction Temperature

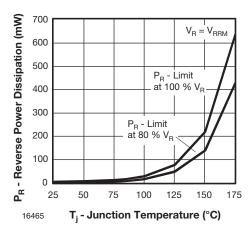


Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature



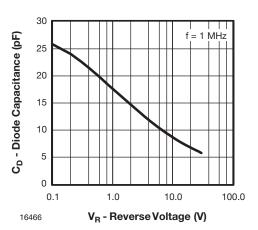
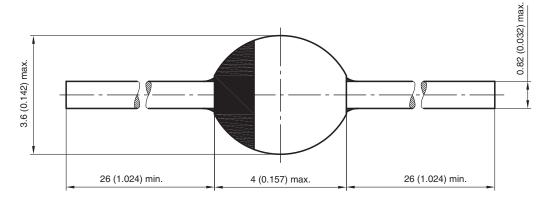


Fig. 5 - Diode Capacitance vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches): SOD-57



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



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