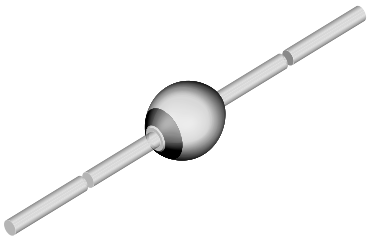
Ultra Fast Avalanche Sinterglass Diode

Features

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



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Applications

Switched-mode power supplies

High-frequency inverter circuits

Mechanical Data

Case: Sintered glass case, SOD 57

Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 370 mg, (max. 500 mg)

Parts Table

Part	Type differentiation	Package
SF1200	V_R = 1200 V; I_{FAV} = 1 A	SOD57
SF1600	V_R = 1600 V; I_{FAV} = 1 A	SOD57

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Reverse voltage = Repetitive peak reverse voltage	see electrical characteristics	SF1200	$V_R = V_{RRM}$	1200	V
	see electrical characteristics	SF1600	$V_R = V_{RRM}$	1600	V
Peak forward surge current	t_p = 10 ms, half-sinewave		I_{FSM}	30	A
Average forward current	half-sinewave, $V_R = V_{RRM}$, R_{thJA} = 45 K/W, T_{amb} = 25 °C		I_{FAV}	1	A
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

Maximum Thermal Resistance

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Junction ambient	Lead length l = 10 mm, T_L = constant		R_{thJA}	45	K/W

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	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
	I_R = 100 µA	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)

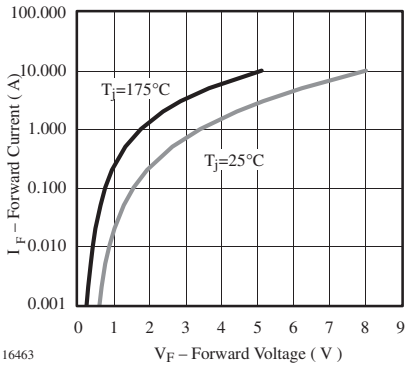


Figure 1.

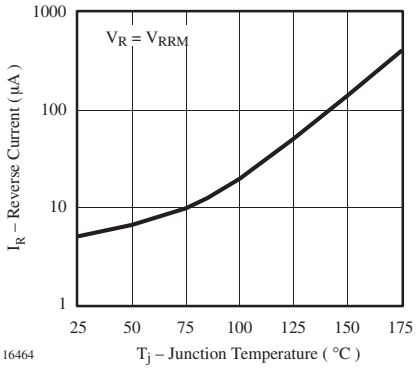


Figure 3. Reverse Current vs. Junction Temperature

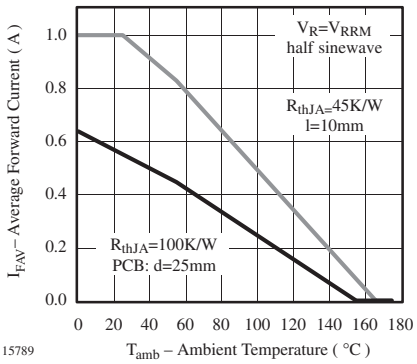


Figure 2. Max. Average Forward Current vs. Ambient Temperature

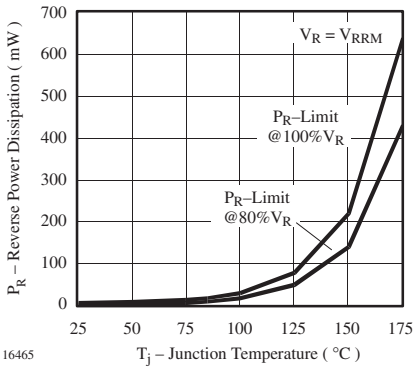


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature

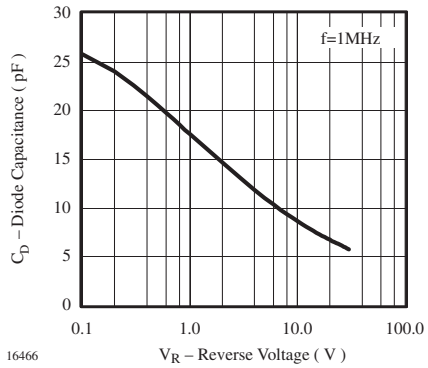
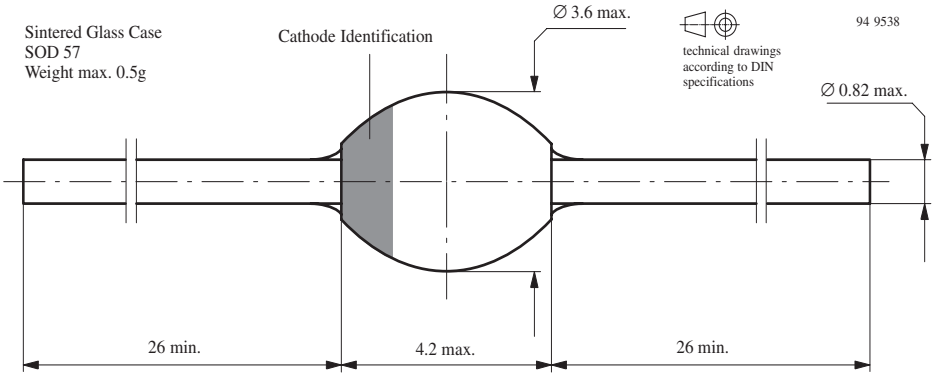


Figure 5. Diode Capacitance vs. Reverse Voltage

Package Dimensions in mm



Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operatingsystems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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