

Vishay Semiconductors

Ultra Fast Avalanche Sinterglass Diode

Features

- · Very low switching losses
- · Glass passivated
- Low reverse current
- · High reverse voltage
- Hermetically sealed axial-leaded glass envelope
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



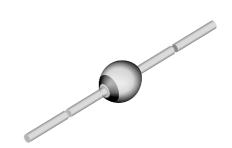
Switched-mode power supplies High-frequency inverter circuits

Mechanical Data

Case: SOD-57 Sintered glass case







949539

Terminals: Plated axial leads, solderable per

MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any Weight: approx. 369 mg

Parts Table

| Part | Type differentiation | Package |
|--------|---|---------|
| SF1200 | V _R = 1200 V; I _{FAV} = 1 A | SOD-57 |
| SF1600 | V _R = 1600 V; I _{FAV} = 1 A | SOD-57 |

Absolute Maximum Ratings

 T_{amb} = 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 |
| | | SF1600 | $V_R = V_{RRM}$ | 1600 | V |
| Peak forward surge current | t _p = 10 ms, half-sinewave | | I _{FSM} | 30 | Α |
| 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

| anno . | | | | |
|------------------|---|------------|-------|------|
| Parameter | Test condition | Symbol | Value | Unit |
| Junction ambient | Lead length I = 10 mm, T _L = constant | R_{thJA} | 45 | K/W |

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Electrical Characteristics

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

| Parameter | Test condition | Part | Symbol | Min | Тур. | Max | Unit |
|---------------------------|--|--------|--------------------|------|------|-----|------|
| Forward voltage | I _F = 1 A | | V _F | | | 3.4 | V |
| Reverse current | $V_R = V_{RRM}$ | | I _R | | | 5 | μΑ |
| | V _R = V _{RRM} , T _j = 125 °C | | I _R | | | 50 | μΑ |
| Reverse breakdown voltage | I _R = 100 μA | SF1200 | V _{(BR)R} | 1250 | | | V |
| | | SF1600 | V _{(BR)R} | 1650 | | | V |
| Reverse recovery time | $I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, I_R = 0.25 \text{ A}$ | | t _{rr} | | | 75 | ns |

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

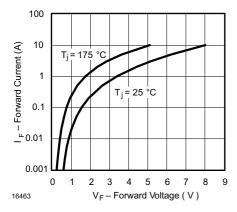


Figure 1.

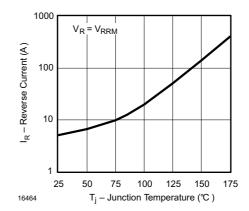


Figure 3. Reverse Current vs. Junction Temperature

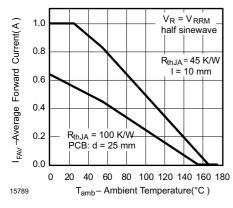


Figure 2. Max. Average Forward Current vs. Ambient Temperature

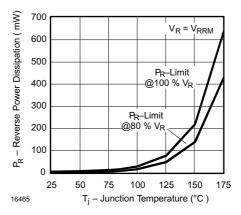


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature





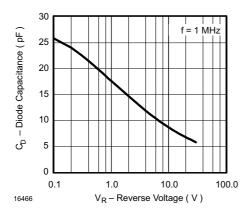
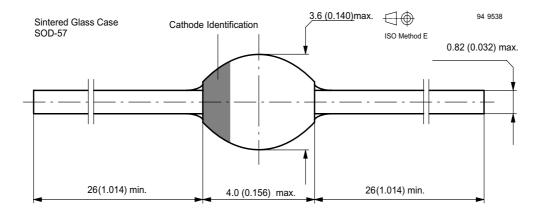


Figure 5. Diode Capacitance vs. Reverse Voltage

Package Dimensions in mm (Inches)



SF1200 / SF1600

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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 operating systems 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.

> We reserve the right to make changes to improve technical design and may do so without further notice.

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