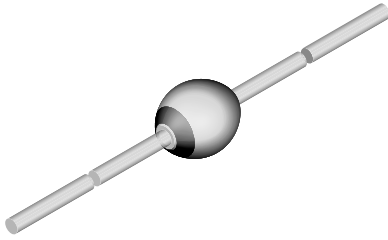




## Ultra-Fast Avalanche Sinterglass Diode



949539

### FEATURES

- Glass passivated
- Hermetically sealed axial leaded glass envelope
- Low reverse current
- High reverse voltage
- 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 |
|-------------|---------------|----------------------------|------------------------|
| SF4007      | SF4007-TR     | 5000 per 10" tape and reel | 25 000                 |
| SF4007      | SF4007-TAP    | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION                          | PACKAGE |
|--------|---|---------|
| SF4001 | $V_R = 50\text{ V}; I_{F(AV)} = 1\text{ A}$   | SOD-57  |
| SF4002 | $V_R = 100\text{ V}; I_{F(AV)} = 1\text{ A}$  | SOD-57  |
| SF4003 | $V_R = 200\text{ V}; I_{F(AV)} = 1\text{ A}$  | SOD-57  |
| SF4004 | $V_R = 400\text{ V}; I_{F(AV)} = 1\text{ A}$  | SOD-57  |
| SF4005 | $V_R = 600\text{ V}; I_{F(AV)} = 1\text{ A}$  | SOD-57  |
| SF4006 | $V_R = 800\text{ V}; I_{F(AV)} = 1\text{ A}$  | SOD-57  |
| SF4007 | $V_R = 1000\text{ V}; I_{F(AV)} = 1\text{ A}$ | 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        | SF4001 | $V_R = V_{RRM}$ | 50    | V    |
|   |                                       | SF4002 | $V_R = V_{RRM}$ | 100   | V    |
|   |                                       | SF4003 | $V_R = V_{RRM}$ | 200   | V    |
|   |                                       | SF4004 | $V_R = V_{RRM}$ | 400   | V    |
|   |                                       | SF4005 | $V_R = V_{RRM}$ | 600   | V    |
|   |                                       | SF4006 | $V_R = V_{RRM}$ | 800   | V    |
|   |                                       | SF4007 | $V_R = V_{RRM}$ | 1000  | V    |
| Peak forward surge current                        | $t_p = 10\text{ ms}$ , half sine wave |        | $I_{FSM}$       | 30    | A    |



| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                                |      |                 |               |                    |
|---|--------------------------------|------|-----------------|---------------|--------------------|
| PARAMETER   | TEST CONDITION                 | PART | SYMBOL          | VALUE         | UNIT               |
| Average forward current   | Lead length $l = 10\text{ mm}$ |      | $I_{FAV}$       | 1             | A                  |
| Junction and storage temperature range  |                                |      | $T_j = T_{stg}$ | - 55 to + 175 | $^{\circ}\text{C}$ |
| Non repetitive reverse avalanche energy   | $I_{(BR)R} = 0.4\text{ A}$     |      | $E_R$           | 10            | mJ                 |

| MAXIMUM THERMAL RESISTANCE ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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  |
|   | On PC board with spacing 25 mm                           | $R_{thJA}$ | 100   | K/W  |

| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |   |        |             |      |      |      |               |
|---|---|--------|-------------|------|------|------|---------------|
| PARAMETER   | TEST CONDITION  | PART   | SYMBOL      | MIN. | TYP. | MAX. | UNIT          |
| Forward voltage   | $I_F = 1\text{ A}$  | SF4001 | $V_F$       | -    | -    | 1    | V             |
|   |   | SF4002 | $V_F$       | -    | -    | 1    | V             |
|   |   | SF4003 | $V_F$       | -    | -    | 1    | V             |
|   |   | SF4004 | $V_F$       | -    | -    | 1    | V             |
|   |   | SF4005 | $V_F$       | -    | -    | 1.7  | V             |
|   |   | SF4006 | $V_F$       | -    | -    | 1.7  | V             |
|   |   | SF4007 | $V_F$       | -    | -    | 1.7  | 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   | $I_R = 100\text{ }\mu\text{A}$                                    | SF4001 | $V_{(BR)R}$ | 50   | -    | -    | V             |
|   |   | SF4002 | $V_{(BR)R}$ | 100  | -    | -    | V             |
|   |   | SF4003 | $V_{(BR)R}$ | 200  | -    | -    | V             |
|   |   | SF4004 | $V_{(BR)R}$ | 400  | -    | -    | V             |
|   |   | SF4005 | $V_{(BR)R}$ | 600  | -    | -    | V             |
|   |   | SF4006 | $V_{(BR)R}$ | 800  | -    | -    | V             |
|   |   | SF4007 | $V_{(BR)R}$ | 1000 | -    | -    | V             |
| Reverse recovery time   | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$ | SF4001 | $t_{rr}$    | -    | -    | 50   | ns            |
|   |   | SF4002 | $t_{rr}$    | -    | -    | 50   | ns            |
|   |   | SF4003 | $t_{rr}$    | -    | -    | 50   | ns            |
|   |   | SF4004 | $t_{rr}$    | -    | -    | 50   | ns            |
|   |   | SF4005 | $t_{rr}$    | -    | -    | 75   | ns            |
|   |   | SF4006 | $t_{rr}$    | -    | -    | 75   | ns            |
|   |   | SF4007 | $t_{rr}$    | -    | -    | 75   | ns            |



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

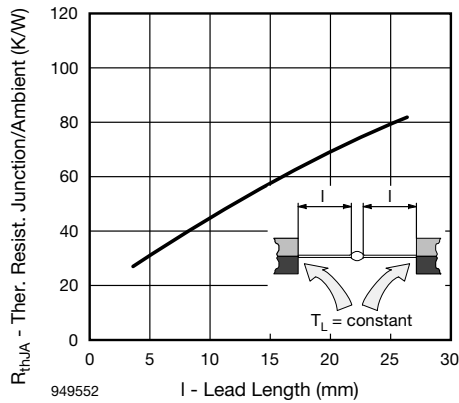


Fig. 1 - Max. Thermal Resistance vs. Lead Length

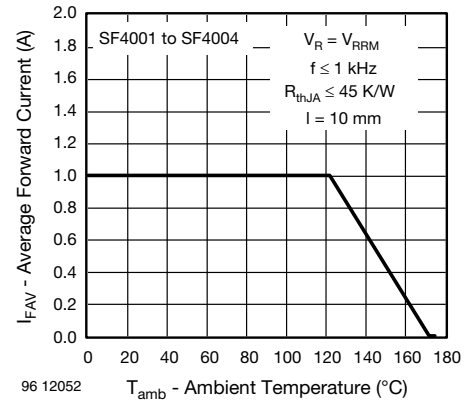


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

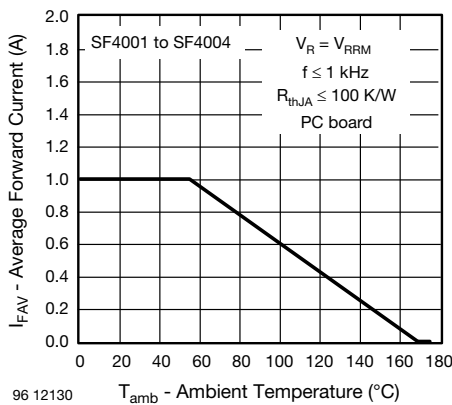


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

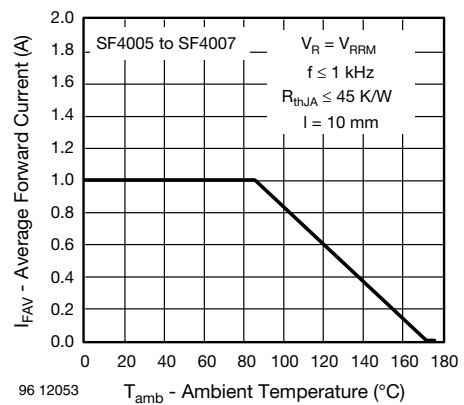


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

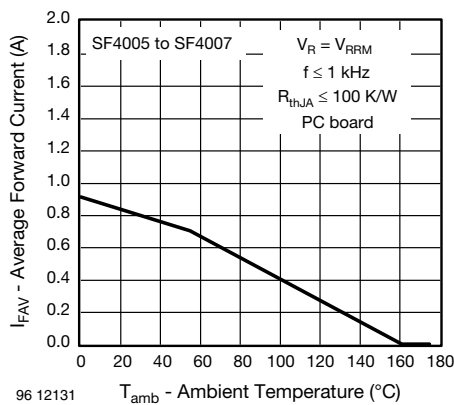


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

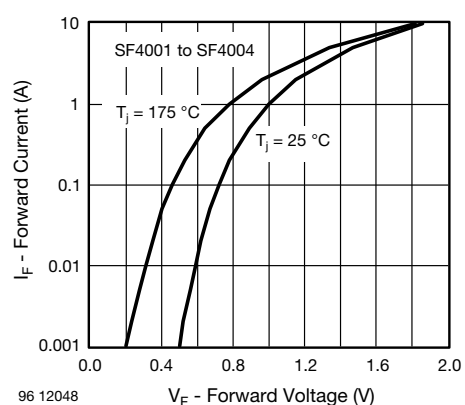


Fig. 6 - Max. Forward Current vs. Forward Voltage

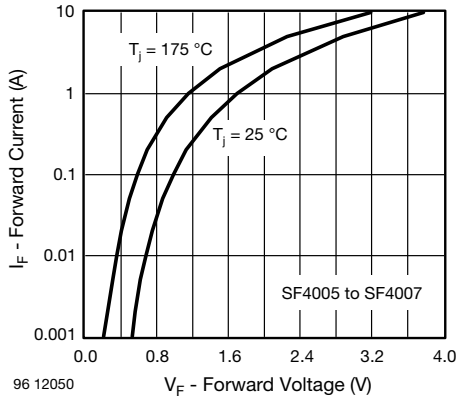


Fig. 7 - Max. Forward Current vs. Forward Voltage

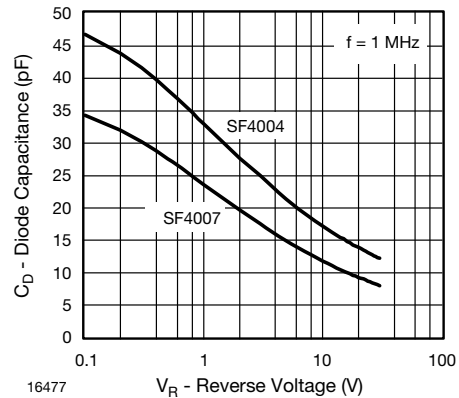


Fig. 10 - Diode Capacitance vs. Reverse Voltage

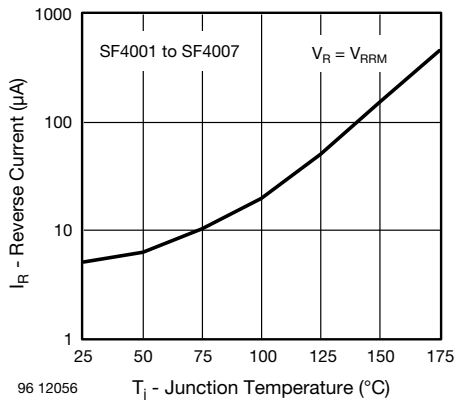


Fig. 8 - Max. Reverse Current vs. Junction Temperature

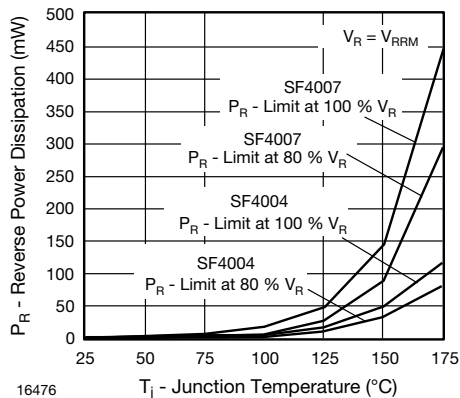
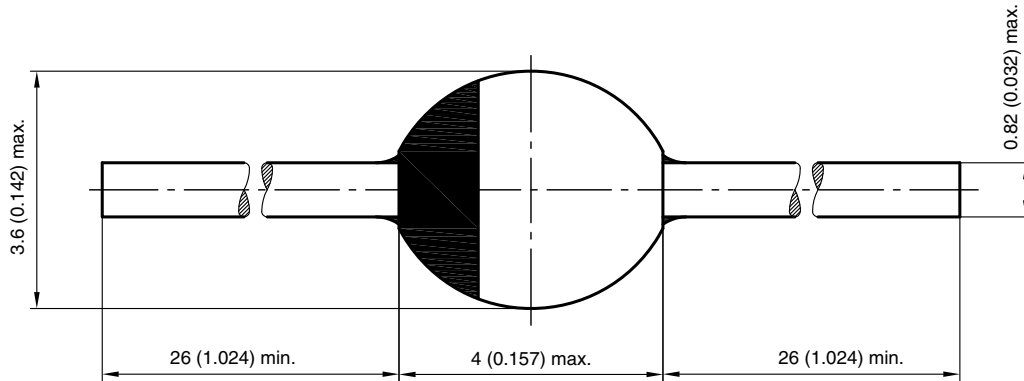


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature



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



20543  
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Document no.:6.563-5006.3-4



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- Консультации по применению компонента;
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- Защита от снятия компонента с производства.



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