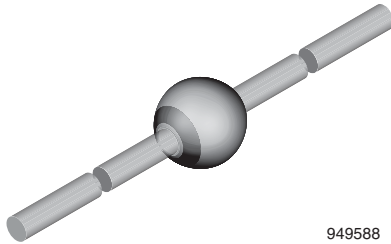




## Ultra-Fast Avalanche Sinterglass Diode



949588

### 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-64**Terminals:** plated axial leads, solderable per MIL-STD-750, method 2026**Polarity:** color band denotes cathode end**Mounting position:** any**Weight:** approx. 858 mg

### ORDERING INFORMATION (Example)

| DEVICE NAME | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
|-------------|---------------|----------------------------|------------------------|
| SF5408      | SF5408-TR     | 2500 per 10" tape and reel | 12 500                 |
| SF5408      | SF5408-TAP    | 2500 per ammpack           | 12 500                 |

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION                            | PACKAGE |
|--------|---|---------|
| SF5400 | $V_R = 50 \text{ V}; I_{F(AV)} = 3 \text{ A}$   | SOD-64  |
| SF5401 | $V_R = 100 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5402 | $V_R = 200 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5403 | $V_R = 300 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5404 | $V_R = 400 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5405 | $V_R = 500 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5406 | $V_R = 600 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5407 | $V_R = 800 \text{ V}; I_{F(AV)} = 3 \text{ A}$  | SOD-64  |
| SF5408 | $V_R = 1000 \text{ V}; I_{F(AV)} = 3 \text{ A}$ | SOD-64  |

### 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 | SF5400 | $V_R = V_{RRM}$ | 50    | V    |
|   |                                | SF5401 | $V_R = V_{RRM}$ | 100   | V    |
|   |                                | SF5402 | $V_R = V_{RRM}$ | 200   | V    |
|   |                                | SF5403 | $V_R = V_{RRM}$ | 300   | V    |
|   |                                | SF5404 | $V_R = V_{RRM}$ | 400   | V    |
|   |                                | SF5405 | $V_R = V_{RRM}$ | 500   | V    |
|   |                                | SF5406 | $V_R = V_{RRM}$ | 600   | V    |
|   |                                | SF5407 | $V_R = V_{RRM}$ | 800   | V    |
|   |                                | SF5408 | $V_R = V_{RRM}$ | 1000  | V    |



| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |  |      |                                   |               |      |
|---|--|------|-----------------------------------|---------------|------|
| PARAMETER   | TEST CONDITION                         | PART | SYMBOL                            | VALUE         | UNIT |
| Peak forward surge current  | t <sub>p</sub> = 2 ms, half sine wave  |      | I <sub>FSM</sub>                  | 150           | A    |
|   | t <sub>p</sub> = 10 ms, half sine wave |      |                                   | 80            |      |
| Average forward current   |  |      | I <sub>F(AV)</sub>                | 3             | A    |
| Junction and storage temperature range  |  |      | T <sub>j</sub> = T <sub>stg</sub> | - 55 to + 175 | °C   |
| Non repetitive reverse avalanche energy   | I <sub>(BR)R</sub> = 0.4 A             |      | E <sub>R</sub>                    | 10            | mJ   |

| MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified) |  |                   |       |      |
|---|--|-------------------|-------|------|
| PARAMETER   | TEST CONDITION                                   | SYMBOL            | VALUE | UNIT |
| Junction ambient  | Lead length l = 10 mm, T <sub>L</sub> = constant | R <sub>thJA</sub> | 25    | K/W  |
|   | On PC board with spacing 25 mm                   | R <sub>thJA</sub> | 70    | K/W  |

| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |   |        |                    |      |      |      |      |
|---|---|--------|--------------------|------|------|------|------|
| PARAMETER   | TEST CONDITION  | PART   | SYMBOL             | MIN. | TYP. | MAX. | UNIT |
| Forward voltage   | I <sub>F</sub> = 3 A  | SF5400 | V <sub>F</sub>     | -    | -    | 1.1  | V    |
|   |   | SF5401 | V <sub>F</sub>     | -    | -    | 1.1  | V    |
|   |   | SF5402 | V <sub>F</sub>     | -    | -    | 1.1  | V    |
|   |   | SF5403 | V <sub>F</sub>     | -    | -    | 1.1  | V    |
|   |   | SF5404 | V <sub>F</sub>     | -    | -    | 1.1  | V    |
|   |   | SF5405 | V <sub>F</sub>     | -    | -    | 1.7  | V    |
|   |   | SF5406 | V <sub>F</sub>     | -    | -    | 1.7  | V    |
|   |   | SF5407 | V <sub>F</sub>     | -    | -    | 1.7  | V    |
| Reverse current   | V <sub>R</sub> = V <sub>RRM</sub>                                     |        | I <sub>R</sub>     | -    | -    | 5    | μA   |
|   | V <sub>R</sub> = V <sub>RRM</sub> , T <sub>j</sub> = 125 °C           |        | I <sub>R</sub>     | -    | -    | 50   | μA   |
| Reverse breakdown voltage   | I <sub>R</sub> = 100 μA   | SF5400 | V <sub>(BR)R</sub> | 60   | -    | -    | V    |
|   |   | SF5401 | V <sub>(BR)R</sub> | 110  | -    | -    | V    |
|   |   | SF5402 | V <sub>(BR)R</sub> | 220  | -    | -    | V    |
|   |   | SF5403 | V <sub>(BR)R</sub> | 330  | -    | -    | V    |
|   |   | SF5404 | V <sub>(BR)R</sub> | 440  | -    | -    | V    |
|   |   | SF5405 | V <sub>(BR)R</sub> | 550  | -    | -    | V    |
|   |   | SF5406 | V <sub>(BR)R</sub> | 660  | -    | -    | V    |
|   |   | SF5407 | V <sub>(BR)R</sub> | 880  | -    | -    | V    |
| Reverse recovery time   | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, i <sub>R</sub> = 0.25 A | SF5400 | t <sub>rr</sub>    | -    | -    | 50   | ns   |
|   |   | SF5401 | t <sub>rr</sub>    | -    | -    | 50   | ns   |
|   |   | SF5402 | t <sub>rr</sub>    | -    | -    | 50   | ns   |
|   |   | SF5403 | t <sub>rr</sub>    | -    | -    | 50   | ns   |
|   |   | SF5404 | t <sub>rr</sub>    | -    | -    | 50   | ns   |
|   |   | SF5405 | t <sub>rr</sub>    | -    | -    | 75   | ns   |
|   |   | SF5406 | t <sub>rr</sub>    | -    | -    | 75   | ns   |
|   |   | SF5407 | t <sub>rr</sub>    | -    | -    | 75   | ns   |
| SF5408  | t <sub>rr</sub>   | -      | -                  | 75   | ns   |      |      |

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

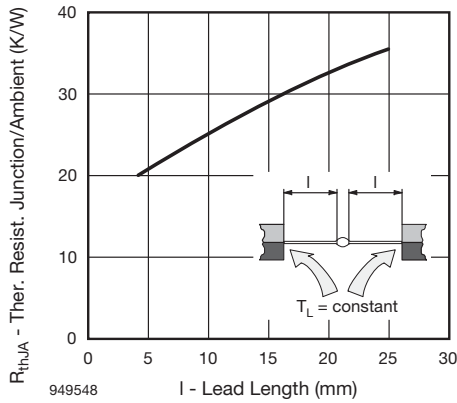


Fig. 1 - Max. Thermal Resistance vs. Lead Length

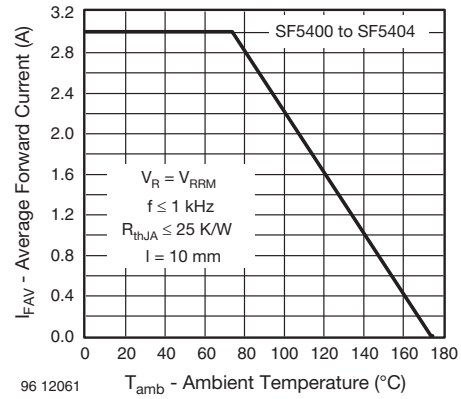


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

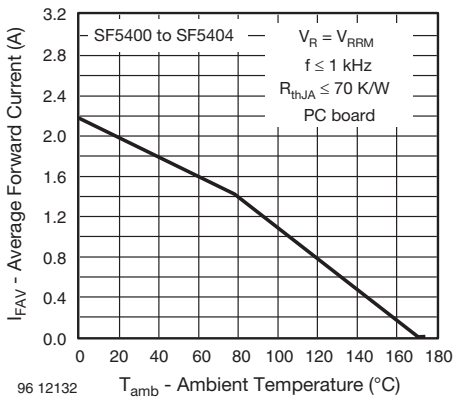


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

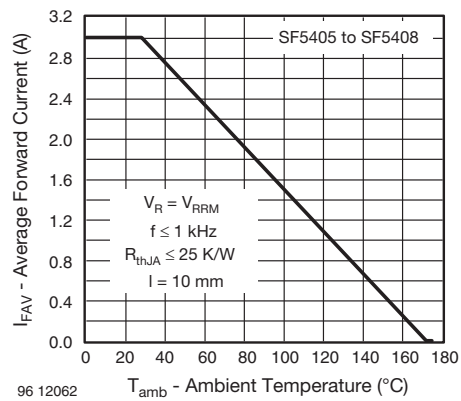


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

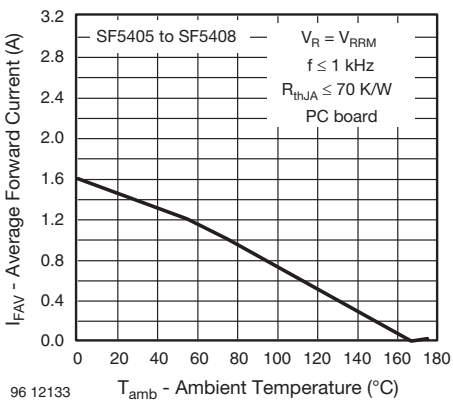


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

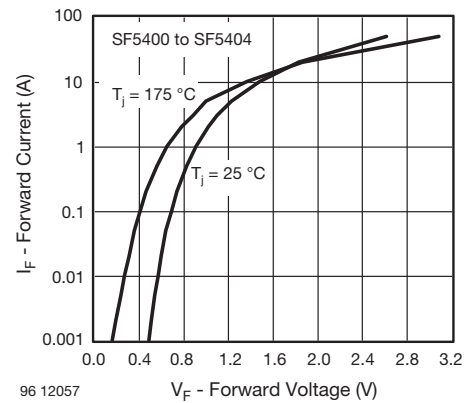


Fig. 6 - Max. Forward Current vs. Forward Voltage

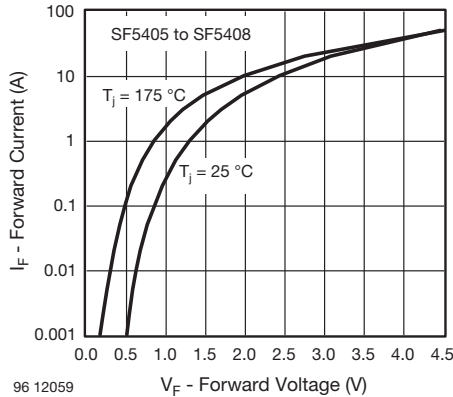


Fig. 7 - Max. Forward Current vs. Forward Voltage

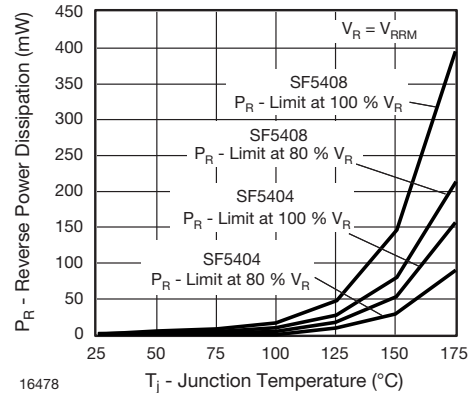


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

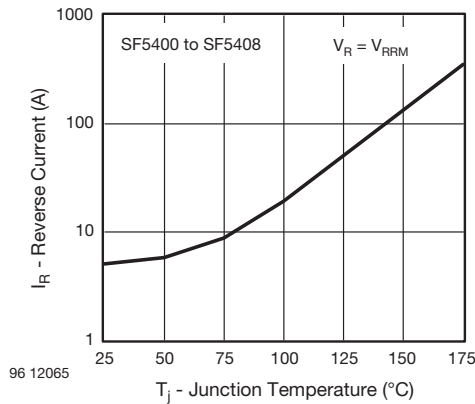


Fig. 8 - Max. Reverse Current vs. Junction Temperature

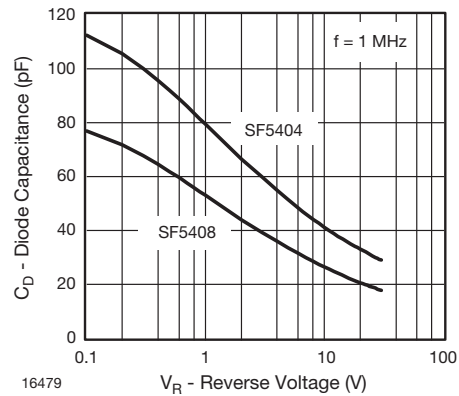
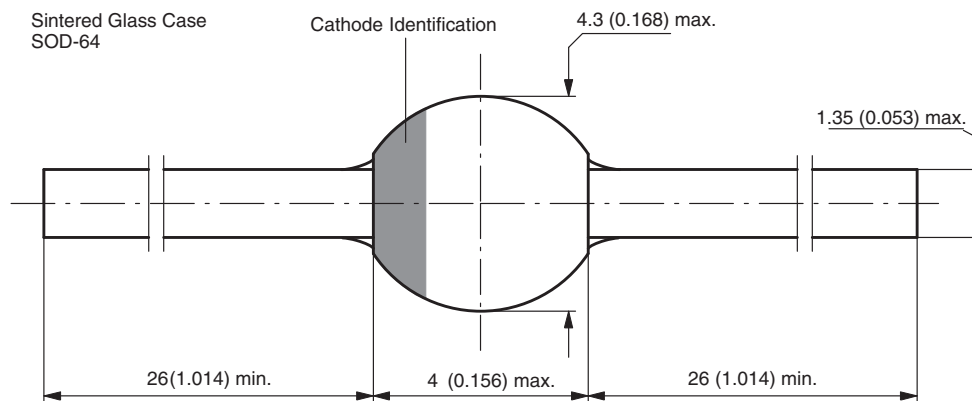


Fig. 10 - Diode Capacitance vs. Reverse Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-64**



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 Rev. 3 - Date: 09.February.2005  
 94 9587



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### Наши контакты:

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331