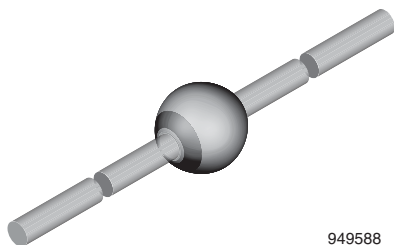




## Ultra-Fast Avalanche Sinterglass Diode



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

| PARAMETER                               | TEST CONDITION                        | PART | SYMBOL          | VALUE         | UNIT               |
|-----------------------------------------|---------------------------------------|------|-----------------|---------------|--------------------|
| Peak forward surge current              | $t_p = 2\text{ ms}$ , half sine wave  |      | $I_{FSM}$       | 150           | A                  |
|                                         | $t_p = 10\text{ ms}$ , half sine wave |      |                 | 80            |                    |
| Average forward current                 |                                       |      | $I_{F(AV)}$     | 3             | 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 $l = 10\text{ mm}$ , $T_L = \text{constant}$ | $R_{thJA}$ | 25    | K/W  |
|                  | On PC board with spacing 25 mm                           | $R_{thJA}$ | 70    | 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           | $I_F = 3\text{ A}$                                                | SF5400 | $V_F$       | -    | -    | 1.1  | V             |
|                           |                                                                   | SF5401 | $V_F$       | -    | -    | 1.1  | V             |
|                           |                                                                   | SF5402 | $V_F$       | -    | -    | 1.1  | V             |
|                           |                                                                   | SF5403 | $V_F$       | -    | -    | 1.1  | V             |
|                           |                                                                   | SF5404 | $V_F$       | -    | -    | 1.1  | V             |
|                           |                                                                   | SF5405 | $V_F$       | -    | -    | 1.7  | V             |
|                           |                                                                   | SF5406 | $V_F$       | -    | -    | 1.7  | V             |
|                           |                                                                   | SF5407 | $V_F$       | -    | -    | 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 | $I_R = 100\text{ }\mu\text{A}$                                    | SF5400 | $V_{(BR)R}$ | 60   | -    | -    | V             |
|                           |                                                                   | SF5401 | $V_{(BR)R}$ | 110  | -    | -    | V             |
|                           |                                                                   | SF5402 | $V_{(BR)R}$ | 220  | -    | -    | V             |
|                           |                                                                   | SF5403 | $V_{(BR)R}$ | 330  | -    | -    | V             |
|                           |                                                                   | SF5404 | $V_{(BR)R}$ | 440  | -    | -    | V             |
|                           |                                                                   | SF5405 | $V_{(BR)R}$ | 550  | -    | -    | V             |
|                           |                                                                   | SF5406 | $V_{(BR)R}$ | 660  | -    | -    | V             |
|                           |                                                                   | SF5407 | $V_{(BR)R}$ | 880  | -    | -    | V             |
| Reverse recovery time     | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$ | SF5400 | $t_{rr}$    | -    | -    | 50   | ns            |
|                           |                                                                   | SF5401 | $t_{rr}$    | -    | -    | 50   | ns            |
|                           |                                                                   | SF5402 | $t_{rr}$    | -    | -    | 50   | ns            |
|                           |                                                                   | SF5403 | $t_{rr}$    | -    | -    | 50   | ns            |
|                           |                                                                   | SF5404 | $t_{rr}$    | -    | -    | 50   | ns            |
|                           |                                                                   | SF5405 | $t_{rr}$    | -    | -    | 75   | ns            |
|                           |                                                                   | SF5406 | $t_{rr}$    | -    | -    | 75   | ns            |
|                           |                                                                   | SF5407 | $t_{rr}$    | -    | -    | 75   | ns            |
|                           |                                                                   | SF5408 | $t_{rr}$    | -    | -    | 75   | ns            |

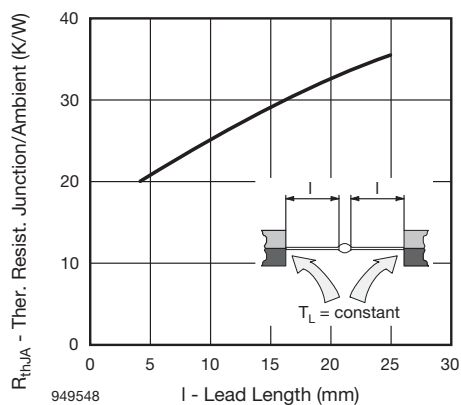
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

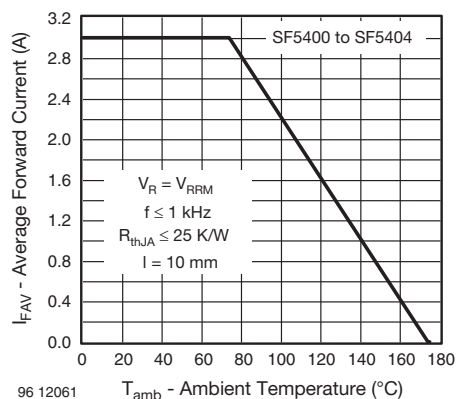


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

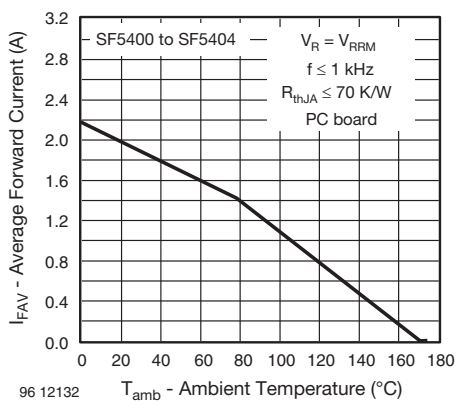


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

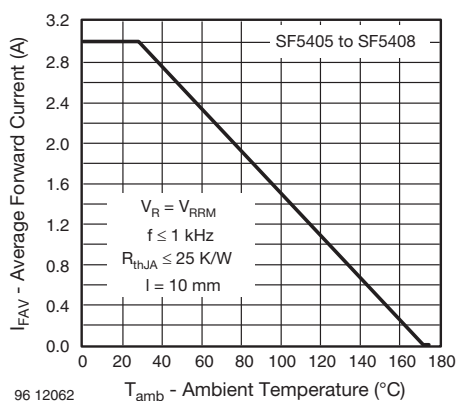


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

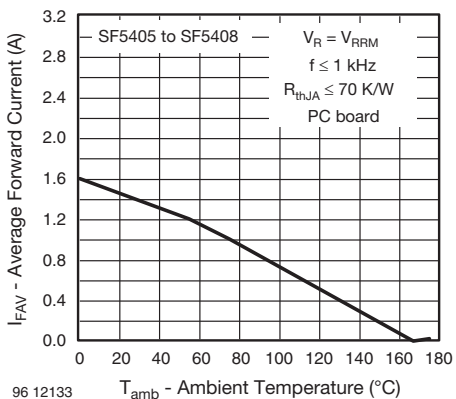


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

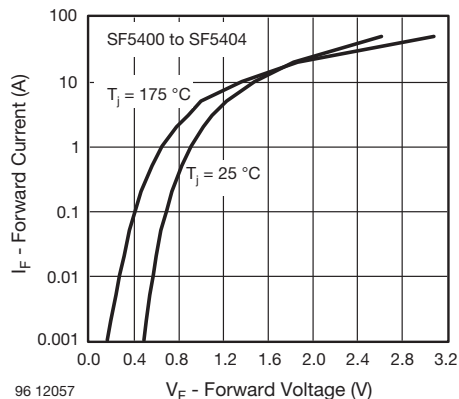


Fig. 6 - Max. Forward Current vs. Forward Voltage

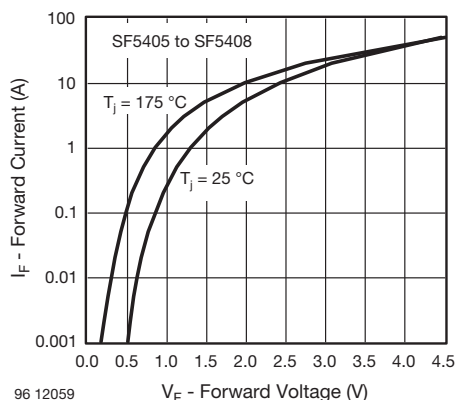


Fig. 7 - Max. Forward Current vs. Forward Voltage

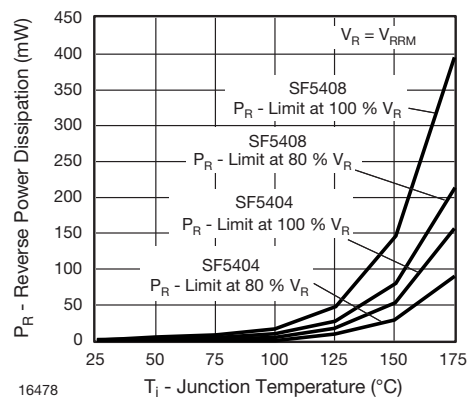


Fig. 9 - Max. Reverse Power Dissipation vs. Junction Temperature

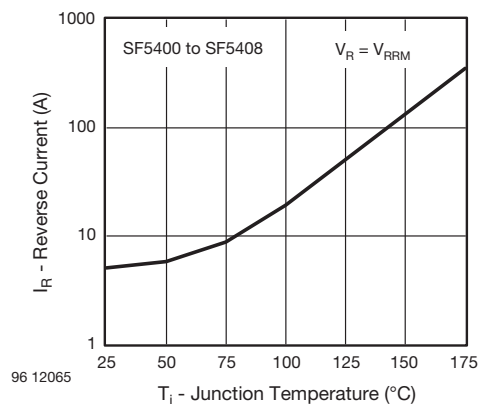


Fig. 8 - Max. Reverse Current vs. Junction Temperature

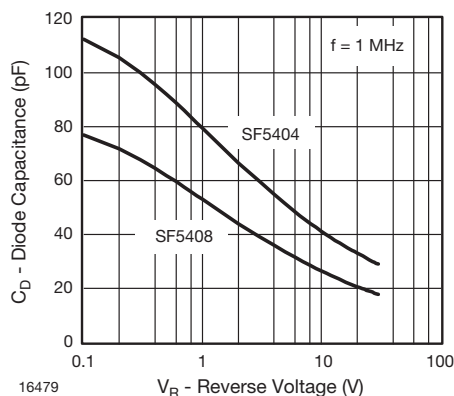
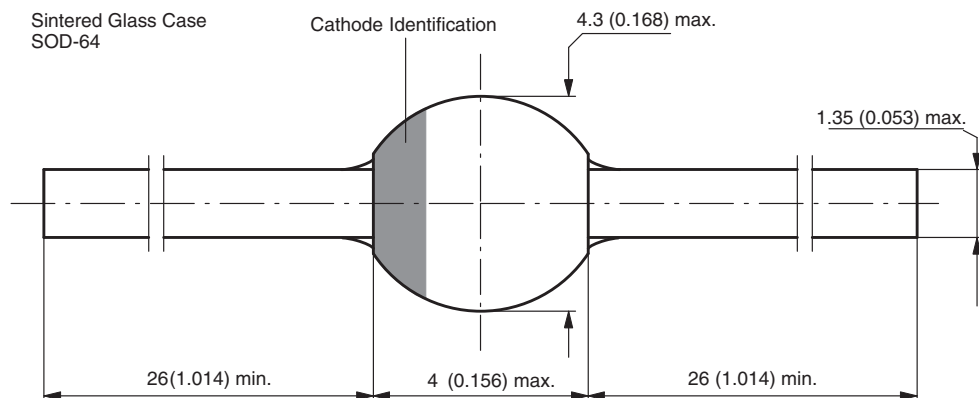


Fig. 10 - Diode Capacitance vs. Reverse Voltage

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



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