



# Standard Avalanche Sinterglass Diode



949539

## DESIGN SUPPORT TOOLS

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## 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

## FEATURES

- Glass passivated junction
- Hermetically sealed package
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## APPLICATIONS

- High voltage rectification
- Efficiency diode in horizontal deflection circuits

| ORDERING INFORMATION (Example) |               |                            |                        |
|--------------------------------|---------------|----------------------------|------------------------|
| DEVICE NAME                    | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
| BY458                          | BY458TR       | 5000 per 10" tape and reel | 25 000                 |
| BY458                          | BY458TAP      | 5000 per ammpack           | 25 000                 |

| PARTS TABLE |  |         |
|-------------|--|---------|
| PART        | TYPE DIFFERENTIATION                           | PACKAGE |
| BY448       | $V_R = 1500\text{ V}$ , $I_{FAV} = 2\text{ A}$ | SOD-57  |
| BY458       | $V_R = 1200\text{ V}$ , $I_{FAV} = 2\text{ A}$ | SOD-57  |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified) |                                       |       |                 |             |                  |
|---|---------------------------------------|-------|-----------------|-------------|------------------|
| PARAMETER   | TEST CONDITION                        | PART  | SYMBOL          | VALUE       | UNIT             |
| Reverse voltage   | See electrical characteristics        | BY448 | $V_R = V_{RRM}$ | 1500        | V                |
|   |                                       | BY458 | $V_R = V_{RRM}$ | 1200        | V                |
| Peak forward surge current  | $t_p = 10\text{ ms}$ , half sine wave |       | $I_{FSM}$       | 30          | A                |
| Average forward current   |                                       |       | $I_{FAV}$       | 2           | A                |
| Junction temperature  |                                       |       | $T_j$           | 140         | $^\circ\text{C}$ |
| Storage temperature range   |                                       |       | $T_{stg}$       | -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  | $l = 10\text{ mm}$ , $T_L = \text{constant}$ | $R_{thJA}$ | 45    | K/W  |
|   | On PC board with spacing 25 mm               | $R_{thJA}$ | 100   | K/W  |

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |   |          |      |      |     |               |
|--|---|----------|------|------|-----|---------------|
| PARAMETER  | TEST CONDITION  | SYMBOL   | MIN. | TYP. | MAX | UNIT          |
| Forward voltage  | $I_F = 3\text{ A}$  | $V_F$    | -    | -    | 1.6 | V             |
| Reverse current  | $V_R = V_{RRM}$   | $I_R$    | -    | -    | 3   | $\mu\text{A}$ |
|  | $V_R = V_{RRM}, T_j = 140\text{ }^{\circ}\text{C}$          | $I_R$    | -    | -    | 140 | $\mu\text{A}$ |
| Reverse recovery time  | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$ | $t_{rr}$ | -    | -    | 2   | $\mu\text{s}$ |
| Total reverse recovery time  | $I_F = 1\text{ A}, -di_F/dt = 0.05\text{ A}/\mu\text{s}$    | $t_{rr}$ | -    | -    | 20  | $\mu\text{s}$ |

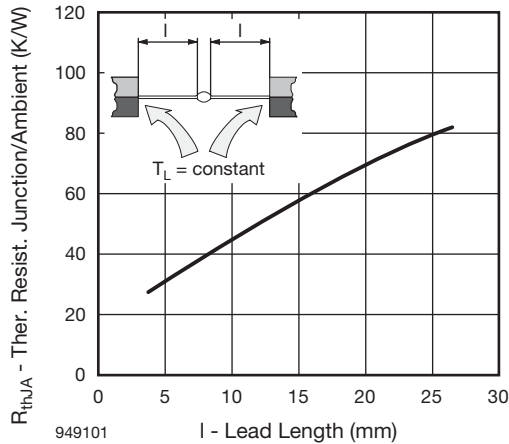
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

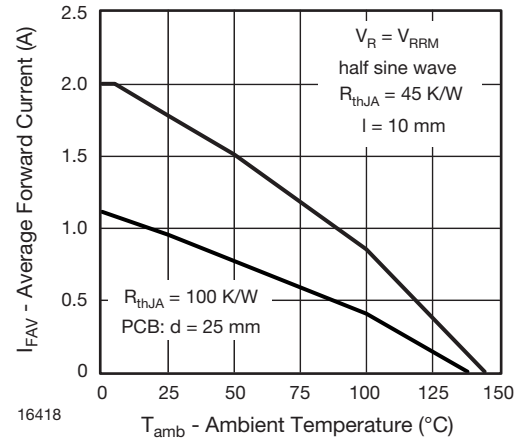


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

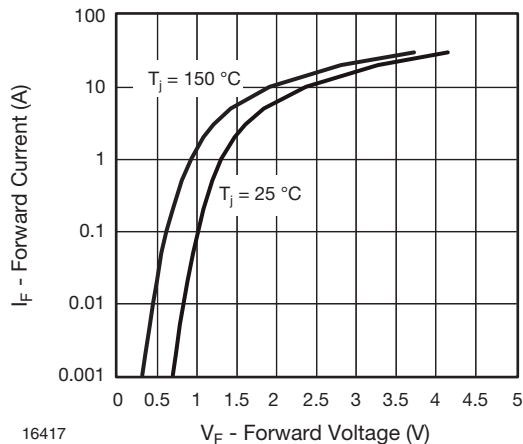


Fig. 2 - Forward Current vs. Forward Voltage

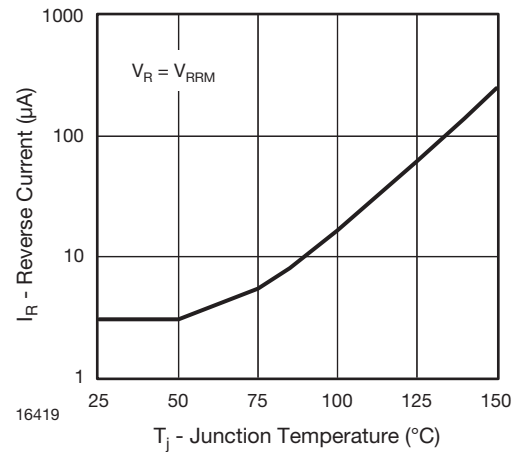


Fig. 4 - Reverse Current vs. Junction Temperature

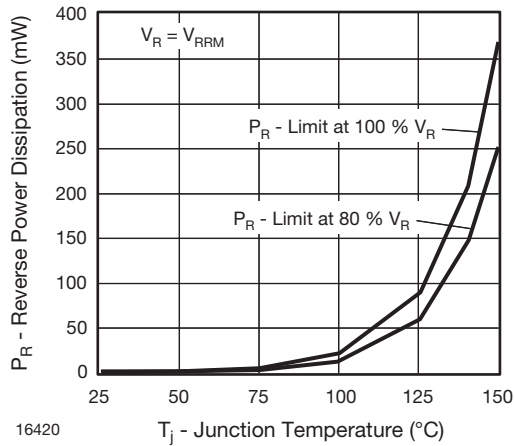


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

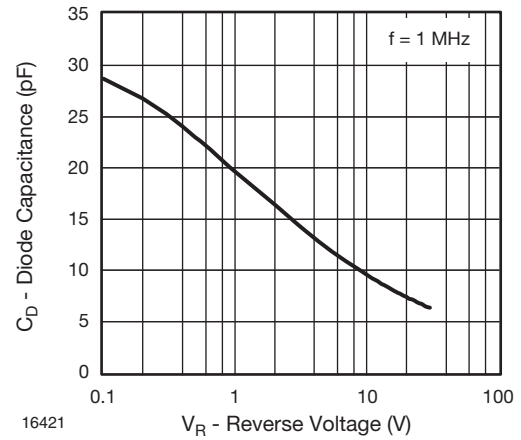
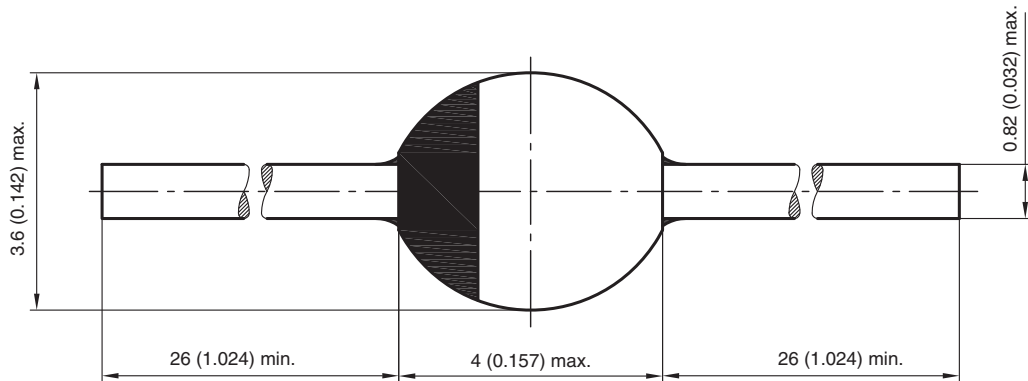


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
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