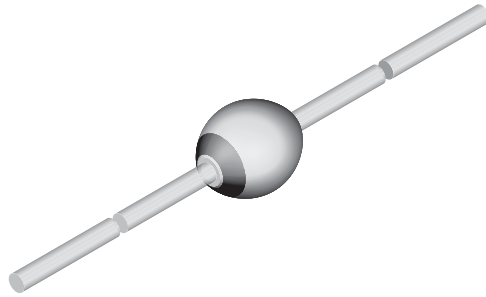




## Fast Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

[click logo to get started](#)



### 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

- Fast rectification and switching avalanche sinterglass diode for TV-line output circuits an switch mode power supply

### MECHANICAL DATA

**Case:** SOD-57 sintered glass case

**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 |
| BY203-20S                      | BY203-20STR   | 5000 per 10" tape and reel | 25 000                 |
| BY203-20S                      | BY203-20STAP  | 5000 per ammopack          | 25 000                 |

| PARTS TABLE |  |         |
|-------------|--|---------|
| PART        | TYPE DIFFERENTIATION                             | PACKAGE |
| BY203-12S   | $V_R = 1200\text{ V}; I_{F(AV)} = 250\text{ mA}$ | SOD-57  |
| BY203-16S   | $V_R = 1600\text{ V}; I_{F(AV)} = 250\text{ mA}$ | SOD-57  |
| BY203-20S   | $V_R = 2000\text{ V}; I_{F(AV)} = 250\text{ mA}$ | SOD-57  |

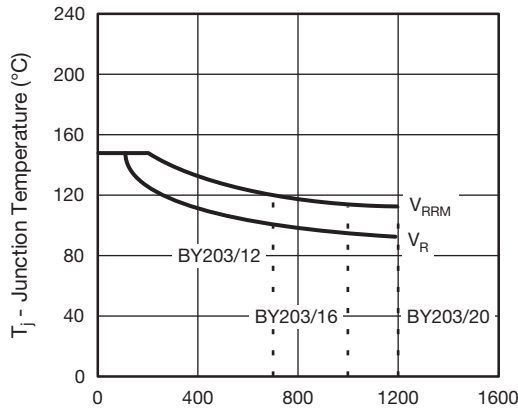
| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified) |                                       |           |                 |             |                  |
|---|---------------------------------------|-----------|-----------------|-------------|------------------|
| PARAMETER   | TEST CONDITION                        | PART      | SYMBOL          | VALUE       | UNIT             |
| Reverse voltage = repetitive peak reverse voltage   | $I_R = 100\text{ }\mu\text{A}$        | BY203-12S | $V_R = V_{RRM}$ | 1200        | V                |
|   |                                       | BY203-16S | $V_R = V_{RRM}$ | 1600        | V                |
|   |                                       | BY203-20S | $V_R = V_{RRM}$ | 2000        | V                |
| Peak forward surge current  | $t_p = 10\text{ ms}$ , half sine wave |           | $I_{FSM}$       | 20          | A                |
| Average forward current   |                                       |           | $I_{F(AV)}$     | 0.25        | A                |
| Non repetitive reverse avalanche energy   | $I_{(BR)R} = 0.4\text{ A}$            |           | $E_R$           | 10          | mJ               |
| Junction temperature range  |                                       |           | $T_j$           | -55 to +150 | $^\circ\text{C}$ |
| Storage temperature range   |                                       |           | $T_{stg}$       | -55 to +175 | $^\circ\text{C}$ |



| 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  |
|   | Maximum lead length                                      | $R_{thJA}$ | 100   | K/W  |

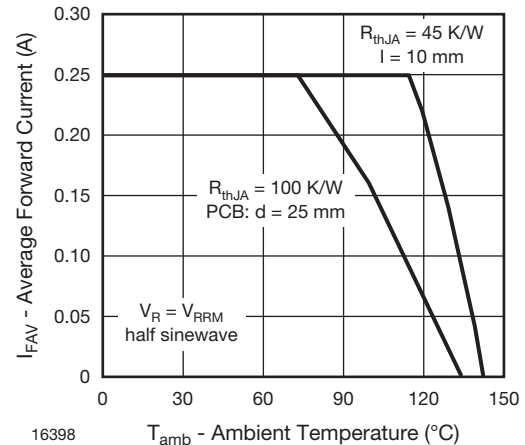
| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |   |           |            |      |      |      |               |
|---|---|-----------|------------|------|------|------|---------------|
| PARAMETER   | TEST CONDITION  | PART      | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
| Forward voltage   | $I_F = 0.2\text{ A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$           |           | $V_F$      | -    | -    | 2.4  | V             |
| Reverse current   | $V_R = 700\text{ V}$  | BY203-12S | $I_R$      | -    | -    | 2    | $\mu\text{A}$ |
|   | $V_R = 1000\text{ V}$   | BY203-16S | $I_R$      | -    | -    | 2    | $\mu\text{A}$ |
|   | $V_R = 1200\text{ V}$   | BY203-20S | $I_R$      | -    | -    | 2    | $\mu\text{A}$ |
| Breakdown voltage   | $I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$ | BY203-12S | $V_{(BR)}$ | 1200 | -    | -    | V             |
|   |   | BY203-16S | $V_{(BR)}$ | 1600 | -    | -    | V             |
|   |   | BY203-20S | $V_{(BR)}$ | 2000 | -    | -    | V             |
| Reverse recovery time   | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$       |           | $t_{rr}$   | -    | -    | 300  | ns            |

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



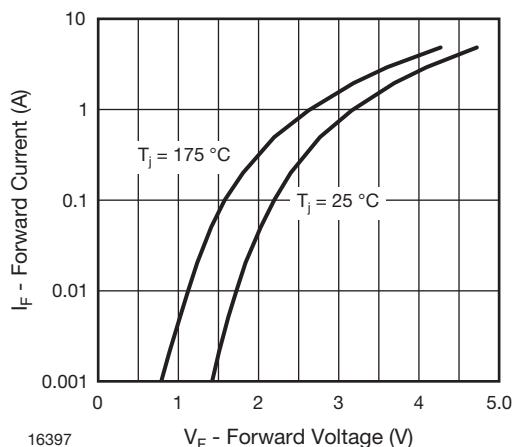
949080  $V_R, V_{RRM}$  - Rev./Rep. Peak Rev. Voltage (V)

Fig. 1 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage



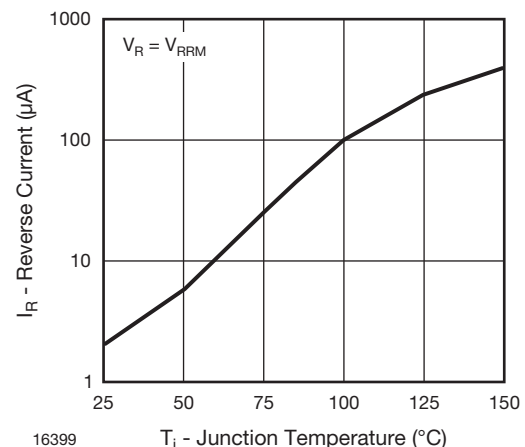
16398  $T_{amb}$  - Ambient Temperature ( $^{\circ}\text{C}$ )

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



16397  $V_F$  - Forward Voltage (V)

Fig. 2 - Max. Forward Current vs. Forward Voltage



16399  $T_j$  - Junction Temperature ( $^{\circ}\text{C}$ )

Fig. 4 - Max. Reverse Current vs. Junction Temperature

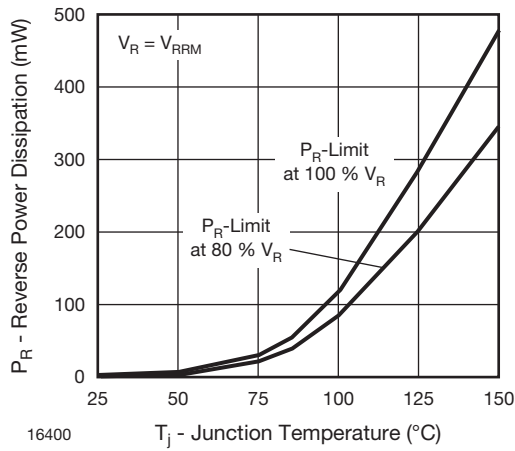


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

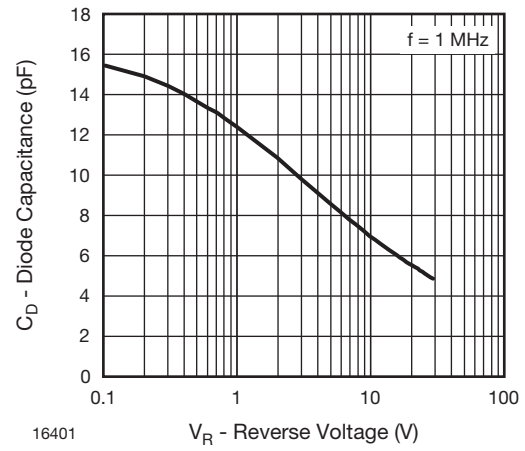
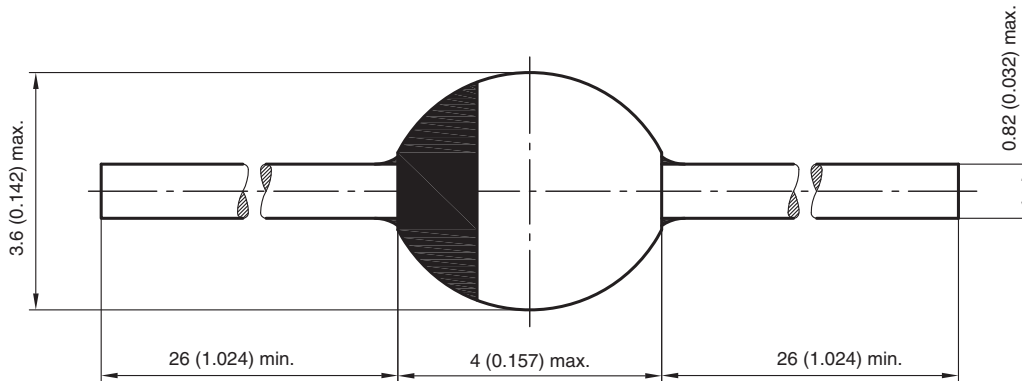


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
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