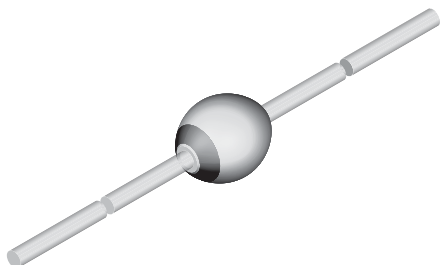


## Fast Avalanche Sinterglass Diode



949539

### 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)


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### APPLICATIONS

- Fast rectification and switching avalanche sinterglass diode for TV-line output circuits and 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 ammpack           | 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                           |                                       |           | $I_{F(AV)}$     | 250           | mA                 |
| 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       | $I_F = 200\text{ mA}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$          |           | $V_F$      | -    | -    | 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            |

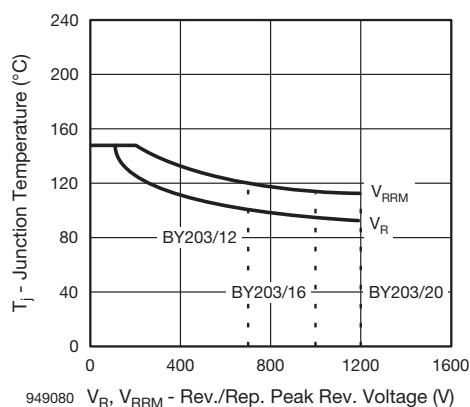
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

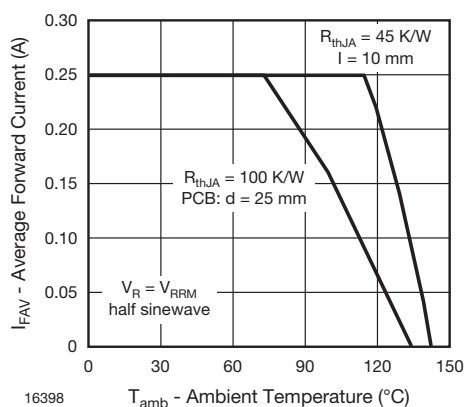


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

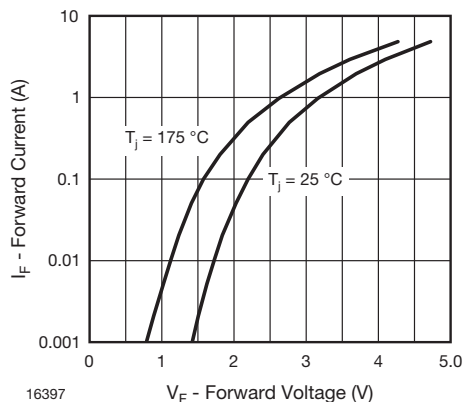


Fig. 2 - Max. Forward Current vs. Forward Voltage

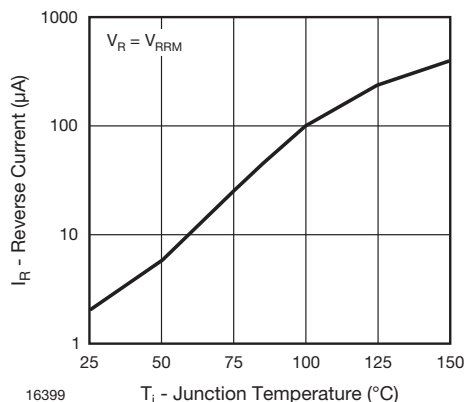


Fig. 4 - Max. Reverse Current vs. Junction Temperature

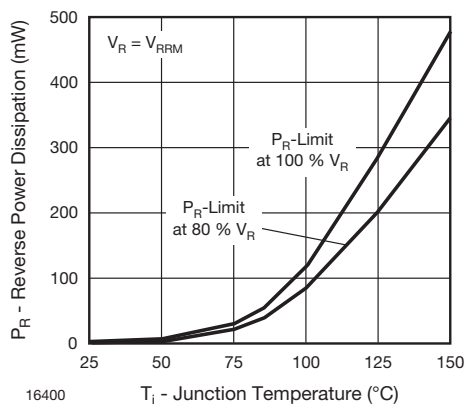


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

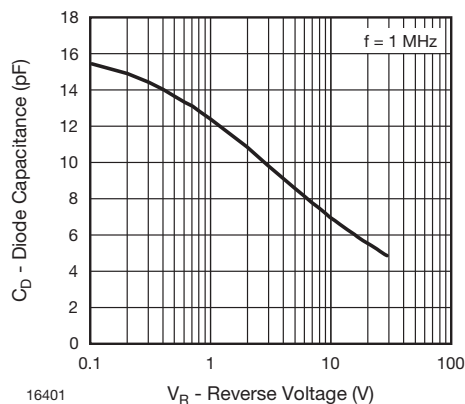
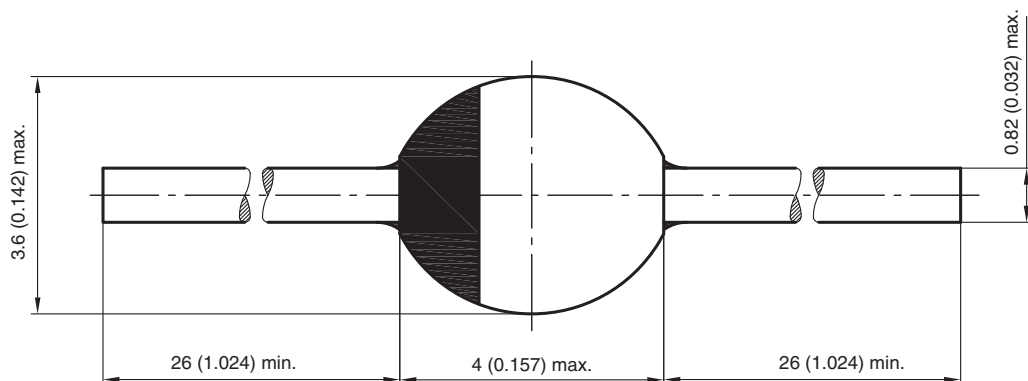


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
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Document no.:6.563-5006.3-4



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