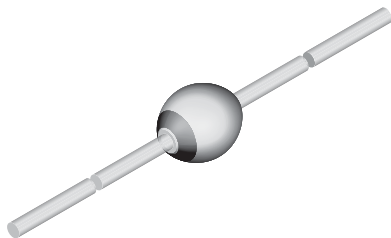


## Ultra-Fast Avalanche Sinterglass Diode



949539

### FEATURES

- Controlled avalanche characteristic
- Low forward voltage
- Ultra fast recovery time
- 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**

### 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

### APPLICATIONS

- Very fast rectification diode e.g. for switch mode power supply

### ORDERING INFORMATION (Example)

| DEVICE NAME | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
|-------------|---------------|----------------------------|------------------------|
| BYV27-200   | BYV27-200-TR  | 5000 per 10" tape and reel | 25 000                 |
| BYV27-200   | BYV27-200-TAP | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART      | TYPE DIFFERENTIATION                              | PACKAGE |
|-----------|---------------------------------------------------|---------|
| BYV27-50  | $V_R = 50 \text{ V}$ ; $I_{F(AV)} = 2 \text{ A}$  | SOD-57  |
| BYV27-100 | $V_R = 100 \text{ V}$ ; $I_{F(AV)} = 2 \text{ A}$ | SOD-57  |
| BYV27-150 | $V_R = 150 \text{ V}$ ; $I_{F(AV)} = 2 \text{ A}$ | SOD-57  |
| BYV27-200 | $V_R = 200 \text{ V}$ ; $I_{F(AV)} = 2 \text{ A}$ | SOD-57  |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^\circ\text{C}$ , unless otherwise specified)

| PARAMETER                                                                  | TEST CONDITION                                        | PART      | SYMBOL          | VALUE         | UNIT             |
|----------------------------------------------------------------------------|-------------------------------------------------------|-----------|-----------------|---------------|------------------|
| Peak reverse voltage, non repetitive                                       | See electrical characteristics                        | BYV27-50  | $V_{RSM}$       | 55            | V                |
|                                                                            |                                                       | BYV27-100 | $V_{RSM}$       | 110           | V                |
|                                                                            |                                                       | BYV27-150 | $V_{RSM}$       | 165           | V                |
|                                                                            |                                                       | BYV27-200 | $V_{RSM}$       | 220           | V                |
| Reverse voltage = repetitive peak reverse voltage                          | See electrical characteristics                        | BYV27-50  | $V_R = V_{RRM}$ | 50            | V                |
|                                                                            |                                                       | BYV27-100 | $V_R = V_{RRM}$ | 100           | V                |
|                                                                            |                                                       | BYV27-150 | $V_R = V_{RRM}$ | 150           | V                |
|                                                                            |                                                       | BYV27-200 | $V_R = V_{RRM}$ | 200           | V                |
| Peak forward surge current                                                 | $t_p = 10 \text{ ms}$ , half sine wave                |           | $I_{FSM}$       | 50            | A                |
| Repetitive peak forward current                                            |                                                       |           | $I_{FRM}$       | 15            | A                |
| Average forward current                                                    |                                                       |           | $I_{F(AV)}$     | 2             | A                |
| Pulse energy in avalanche mode, non repetitive (inductive load switch off) | $I_{(BR)R} = 1 \text{ A}$ , $T_j = 175^\circ\text{C}$ |           | $E_R$           | 20            | mJ               |
| Junction and storage temperature range                                     |                                                       |           | $T_j = T_{stg}$ | - 55 to + 175 | $^\circ\text{C}$ |

### MAXIMUM THERMAL RESISTANCE ( $T_{amb} = 25^\circ\text{C}$ , 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                                                    | PART | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
| Forward voltage                                                                                          | $I_F = 3\text{ A}$                                                |      | $V_F$    | -    | -    | 1.07 | V             |
|                                                                                                          | $I_F = 3\text{ A}$ , $T_j = 175\text{ }^{\circ}\text{C}$          |      | $V_F$    | -    | -    | 0.88 | V             |
| Reverse current                                                                                          | $V_R = V_{RRM}$                                                   |      | $I_R$    | -    | -    | 1    | $\mu\text{A}$ |
|                                                                                                          | $V_{RSM}$                                                         |      | $I_R$    | -    | -    | 100  | $\mu\text{A}$ |
|                                                                                                          | $V_R = V_{RRM}$ , $T_j = 165\text{ }^{\circ}\text{C}$             |      | $I_R$    | -    | -    | 150  | $\mu\text{A}$ |
| Reverse recovery time                                                                                    | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_R = 0.25\text{ A}$ |      | $t_{rr}$ | -    | -    | 25   | ns            |

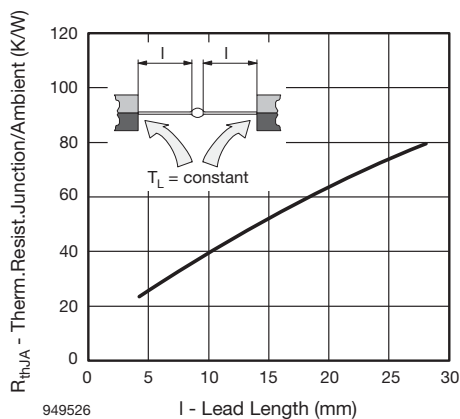
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

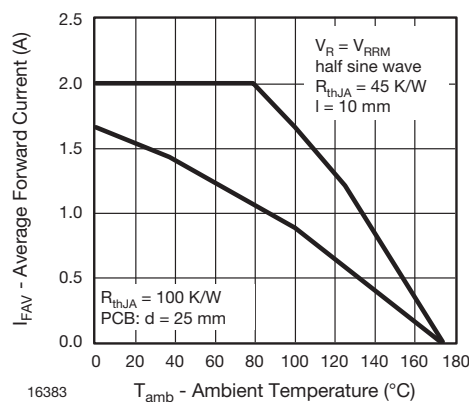


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

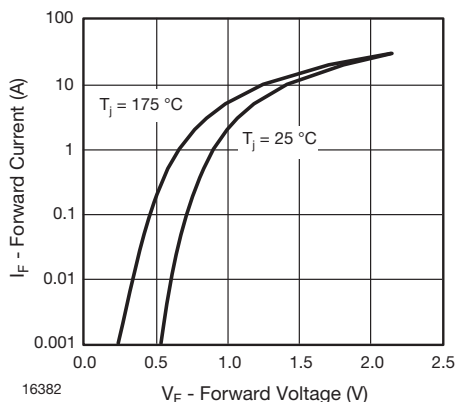


Fig. 2 - Forward Current vs. Forward Voltage

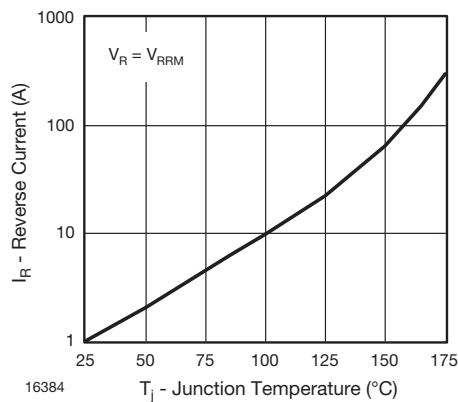


Fig. 4 - Reverse Current vs. Junction Temperature

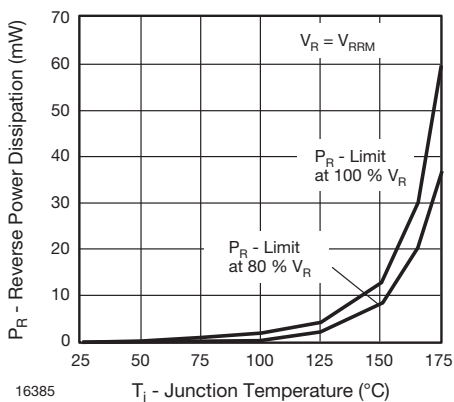


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

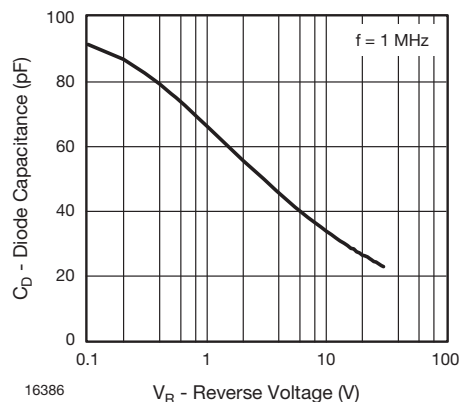
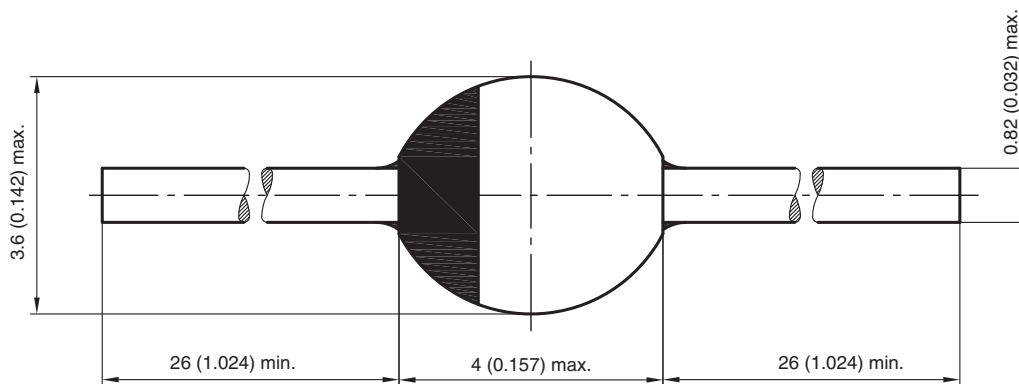


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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