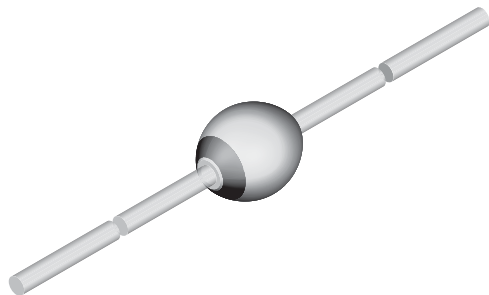


## Fast Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

[click logo to get started](#)

**3D**  
Models  
Available

### 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
- Low reverse current
- Soft recovery characteristics
- 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 “soft recovery” rectification diode

### ORDERING INFORMATION (Example)

| DEVICE NAME | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
|-------------|---------------|----------------------------|------------------------|
| BYV38       | BYV38-TR      | 5000 per 10" tape and reel | 25 000                 |
| BYV38       | BYV38-TAP     | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART  | TYPE DIFFERENTIATION                             | PACKAGE |
|-------|--------------------------------------------------|---------|
| BYV37 | $V_R = 800\text{ V}$ ; $I_{F(AV)} = 2\text{ A}$  | SOD-57  |
| BYV38 | $V_R = 1000\text{ V}$ ; $I_{F(AV)} = 2\text{ A}$ | SOD-57  |

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

| PARAMETER                               | TEST CONDITION                        | PART  | SYMBOL          | VALUE       | UNIT |
|-----------------------------------------|---------------------------------------|-------|-----------------|-------------|------|
| Reverse voltage                         | See electrical characteristics        | BYV37 | $V_R = V_{RRM}$ | 800         | V    |
|                                         |                                       | BYV38 | $V_R = V_{RRM}$ | 1000        | V    |
| Peak forward surge current              | $t_p = 10\text{ ms}$ , half sine wave |       | $I_{FSM}$       | 50          | A    |
| Average forward current                 |                                       |       | $I_{F(AV)}$     | 2           | A    |
| Non repetitive reverse avalanche energy | $I_{(BR)R} = 0.4\text{ A}$            |       | $E_R$           | 10          | mJ   |
| Junction and storage temperature range  |                                       |       | $T_j = T_{stg}$ | -55 to +175 | °C   |

### MAXIMUM THERMAL RESISTANCE ( $T_{amb} = 25\text{ °C}$ , 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  |
|                  | 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                                                                                          | $I_F = 1\text{ A}$                                          |      | $V_F$    | -    | 1    | 1.1  | V             |
| Reverse current                                                                                          | $V_R = V_{RRM}$                                             |      | $I_R$    | -    | -    | 5    | $\mu\text{A}$ |
|                                                                                                          | $V_R = V_{RRM}, T_j = 150\text{ }^{\circ}\text{C}$          |      | $I_R$    | -    | -    | 150  | $\mu\text{A}$ |
| Reverse recovery time                                                                                    | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, i_R = 0.25\text{ A}$ |      | $t_{rr}$ | -    | -    | 300  | ns            |
| Diode capacitance                                                                                        | $V_R = 4\text{ V}, f = 1\text{ MHz}$                        |      | $C_D$    | -    | 15   | -    | pF            |

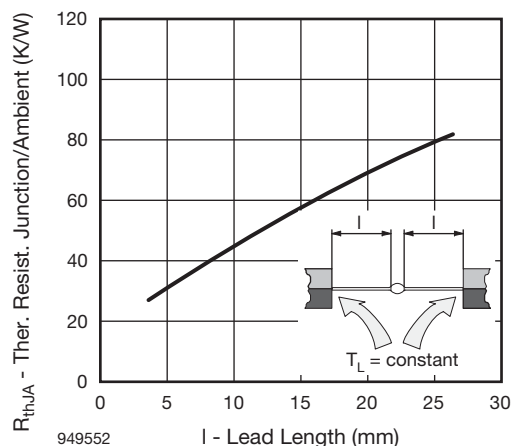
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

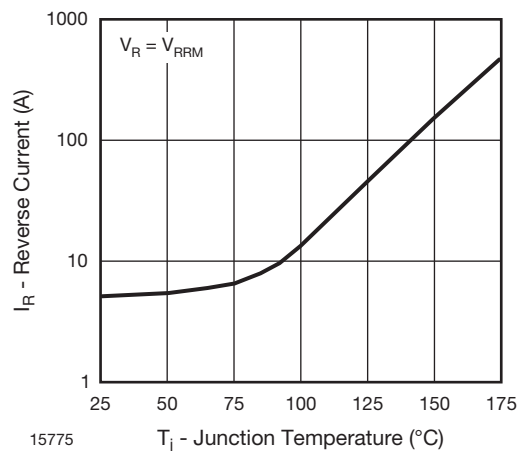


Fig. 3 - Max. Reverse Current vs. Junction Temperature

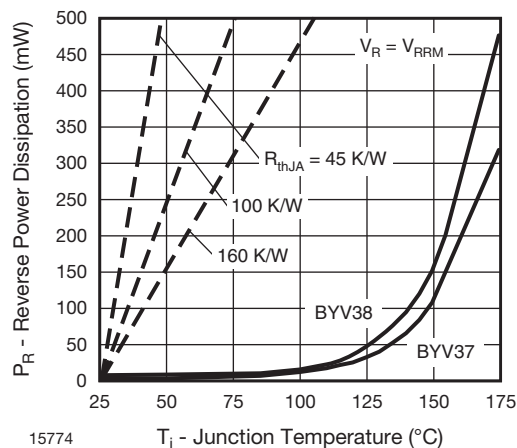


Fig. 2 - Max. Reverse Power Dissipation vs. Junction Temperature

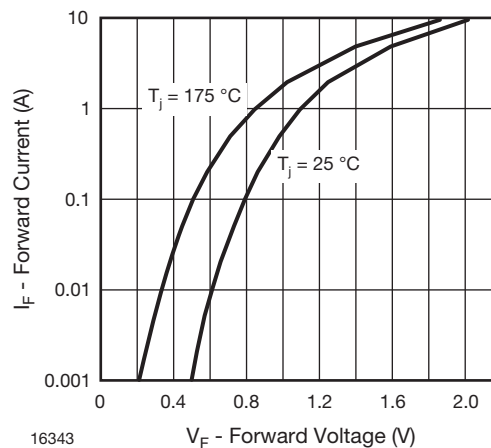


Fig. 4 - Forward Current vs. Forward Voltage

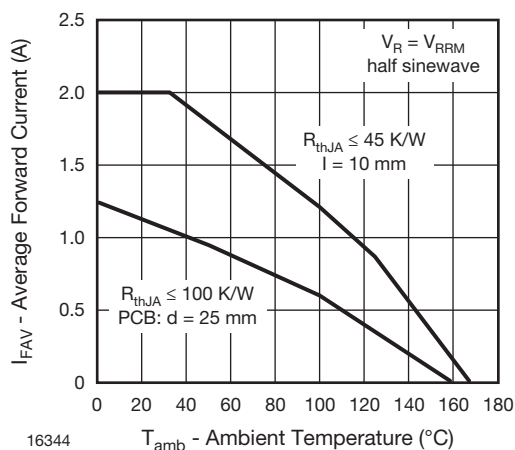


Fig. 5 - Max. Average Forward Current vs. Ambient Temperature

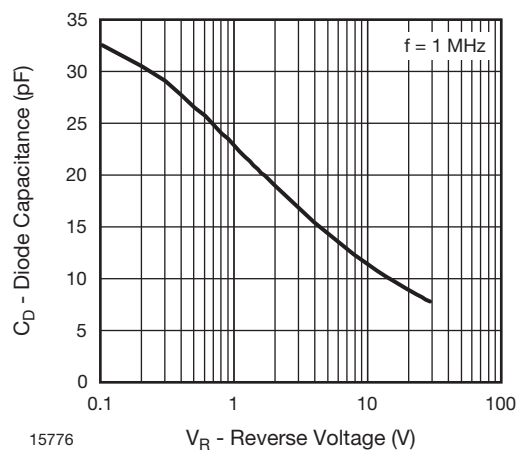
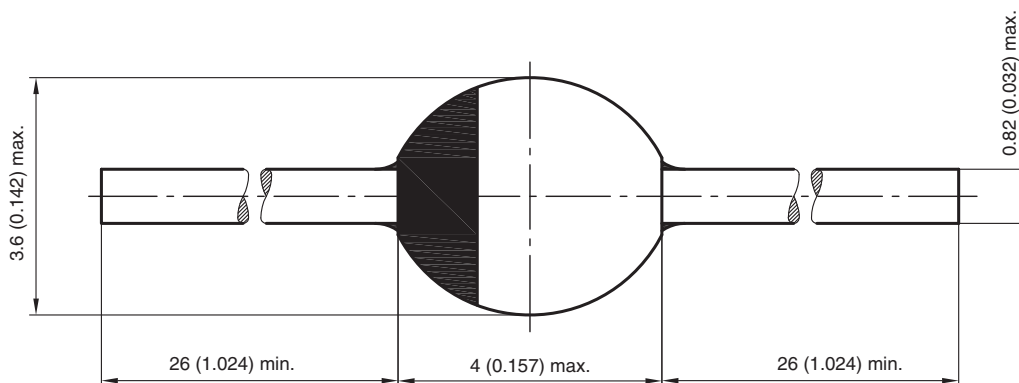


Fig. 6 - Typ. Diode Capacitance vs. Reverse Voltage

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


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