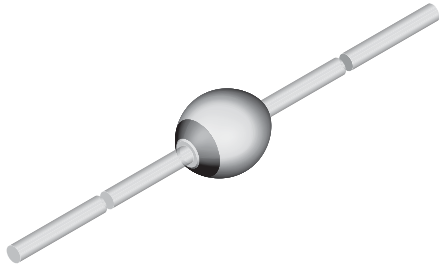




## Fast Avalanche Sinterglass Diode



949539

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### DESIGN SUPPORT TOOLS

**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 rectification and switching diode

| ORDERING INFORMATION (Example) |               |                            |                        |
|--------------------------------|---------------|----------------------------|------------------------|
| DEVICE NAME                    | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
| BYT52M                         | BYT52M-TR     | 5000 per 10" tape and reel | 25 000                 |
| BYT52M                         | BYT52M-TAP    | 5000 per ammopack          | 25 000                 |

| PARTS TABLE |   |         |
|-------------|---|---------|
| PART        | TYPE DIFFERENTIATION                            | PACKAGE |
| BYT52A      | $V_R = 50\text{ V}; I_{F(AV)} = 1.4\text{ A}$   | SOD-57  |
| BYT52B      | $V_R = 100\text{ V}; I_{F(AV)} = 1.4\text{ A}$  | SOD-57  |
| BYT52D      | $V_R = 200\text{ V}; I_{F(AV)} = 1.4\text{ A}$  | SOD-57  |
| BYT52G      | $V_R = 400\text{ V}; I_{F(AV)} = 1.4\text{ A}$  | SOD-57  |
| BYT52J      | $V_R = 600\text{ V}; I_{F(AV)} = 1.4\text{ A}$  | SOD-57  |
| BYT52K      | $V_R = 800\text{ V}; I_{F(AV)} = 1.4\text{ A}$  | SOD-57  |
| BYT52M      | $V_R = 1000\text{ V}; I_{F(AV)} = 1.4\text{ A}$ | SOD-57  |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified) |                                       |        |                 |             |                  |
|---|---------------------------------------|--------|-----------------|-------------|------------------|
| PARAMETER   | TEST CONDITION                        | PART   | SYMBOL          | VALUE       | UNIT             |
| Reverse voltage = repetitive peak reverse voltage   | See electrical characteristics        | BYT52A | $V_R = V_{RRM}$ | 50          | V                |
|   |                                       | BYT52B | $V_R = V_{RRM}$ | 100         | V                |
|   |                                       | BYT52D | $V_R = V_{RRM}$ | 200         | V                |
|   |                                       | BYT52G | $V_R = V_{RRM}$ | 400         | V                |
|   |                                       | BYT52J | $V_R = V_{RRM}$ | 600         | V                |
|   |                                       | BYT52K | $V_R = V_{RRM}$ | 800         | V                |
|   |                                       | BYT52M | $V_R = V_{RRM}$ | 1000        | V                |
| Peak forward surge current  | $t_p = 10\text{ ms}$ , half sine wave |        | $I_{FSM}$       | 50          | A                |
| Average forward current   | $l = 10\text{ mm}$                    |        | $I_{F(AV)}$     | 1.4         | A                |
|   | On PC board                           |        | $I_{F(AV)}$     | 0.85        | A                |
| Non repetitive reverse avalanche energy   | $I_{(BR)R} = 0.4\text{ A}$            | BYT52J | $E_R$           | 10          | mJ               |
|   |                                       | BYT52K | $E_R$           | 10          | mJ               |
|   |                                       | BYT52M | $E_R$           | 10          | mJ               |
| Junction and storage temperature range  |                                       |        | $T_j = T_{stg}$ | -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  |
|   | On PC board with spacing 25 mm                           | $R_{thJA}$ | 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   | $I_F = 1\text{ A}$  |      | $V_F$    | -    | -    | 1.3  | 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   | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $t_R = 0.25\text{ A}$ |      | $t_{rr}$ | -    | -    | 200  | ns            |

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

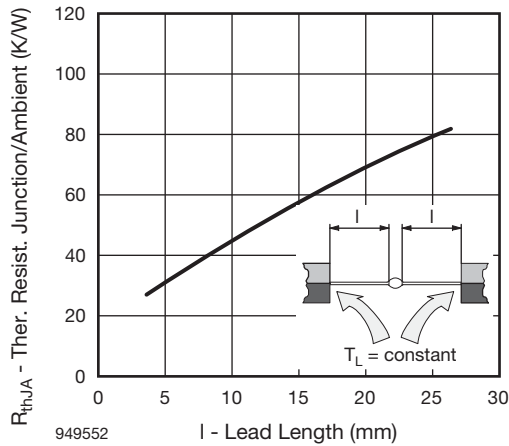


Fig. 1 - Max. Thermal Resistance vs. Lead Length

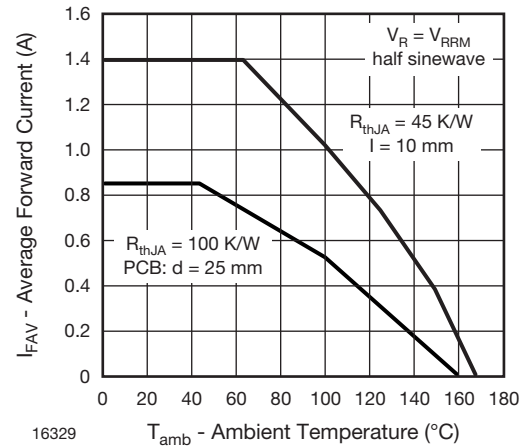


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

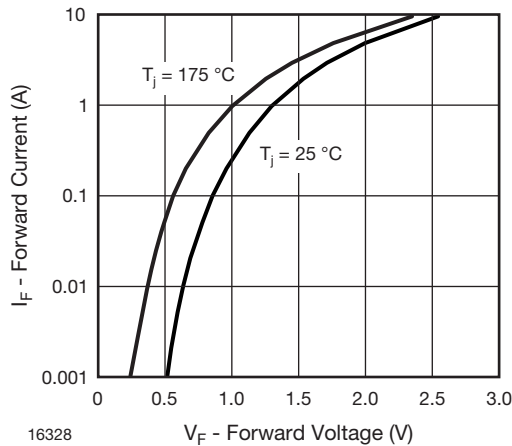


Fig. 2 - Max. Forward Current vs. Forward Voltage

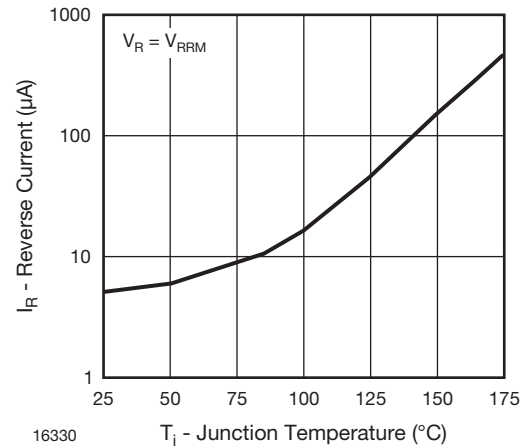


Fig. 4 - Max. Reverse Current vs. Junction Temperature

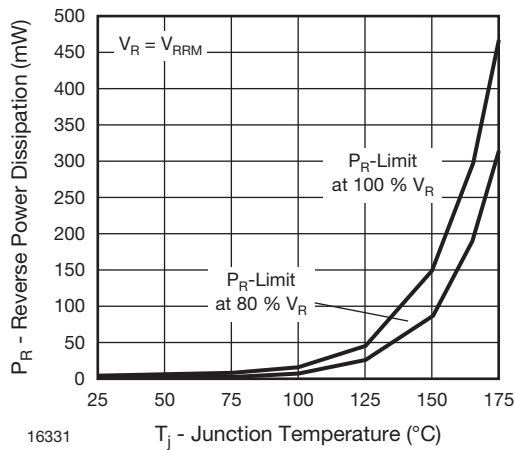


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

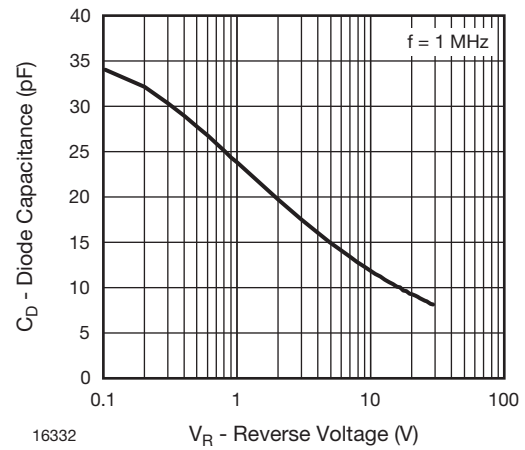
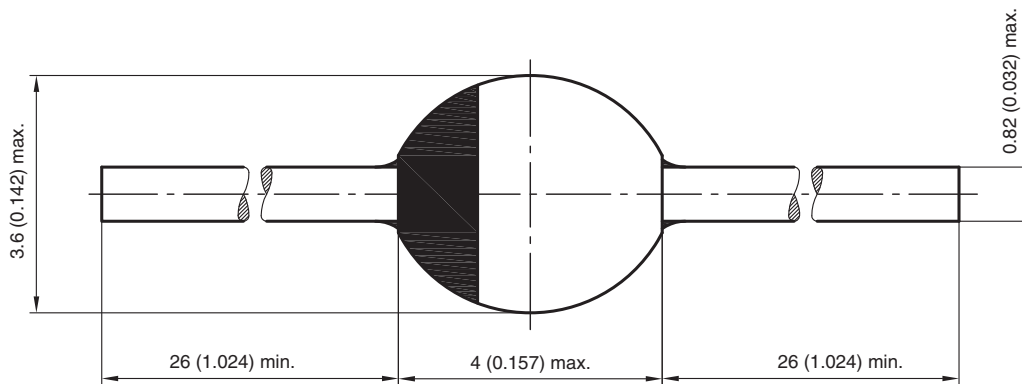


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
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