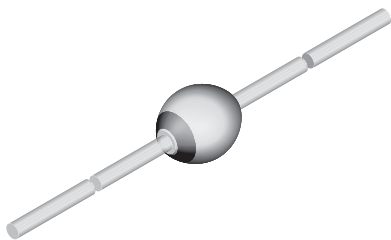




## Ultra-Fast Avalanche Sinterglass Diode



949539

### 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**

### 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 and switches
- Switched mode power supplies
- High-frequency inverter circuits

### ORDERING INFORMATION (Example)

| DEVICE NAME | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
|-------------|---------------|----------------------------|------------------------|
| BYT53G      | BYT53G-TR     | 5000 per 10" tape and reel | 25 000                 |
| BYT53G      | BYT53G-TAP    | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION                              | PACKAGE |
|--------|---------------------------------------------------|---------|
| BYT53A | $V_R = 50\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$  | SOD-57  |
| BYT53B | $V_R = 100\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$ | SOD-57  |
| BYT53C | $V_R = 150\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$ | SOD-57  |
| BYT53D | $V_R = 200\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$ | SOD-57  |
| BYT53F | $V_R = 300\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$ | SOD-57  |
| BYT53G | $V_R = 400\text{ V}$ ; $I_{F(AV)} = 1.9\text{ A}$ | SOD-57  |

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

| PARAMETER                                         | TEST CONDITION                            | PART   | SYMBOL          | VALUE         | UNIT |
|---------------------------------------------------|-------------------------------------------|--------|-----------------|---------------|------|
| Reverse voltage = repetitive peak reverse voltage | See electrical characteristics            | BYT53A | $V_R = V_{RRM}$ | 50            | V    |
|                                                   |                                           | BYT53B | $V_R = V_{RRM}$ | 100           | V    |
|                                                   |                                           | BYT53C | $V_R = V_{RRM}$ | 150           | V    |
|                                                   |                                           | BYT53D | $V_R = V_{RRM}$ | 200           | V    |
|                                                   |                                           | BYT53F | $V_R = V_{RRM}$ | 300           | V    |
|                                                   |                                           | BYT53G | $V_R = V_{RRM}$ | 400           | V    |
| Peak forward surge current                        | $t_p = 10\text{ ms}$ , half sine wave     |        | $I_{FSM}$       | 50            | A    |
| Average forward current                           | $I = 10\text{ mm}$ , $T_L = 25\text{ °C}$ |        | $I_{F(AV)}$     | 1.9           | A    |
| Non repetitive reverse avalanche energy           | $I_{(BR)R} = 1\text{ A}$                  |        | $E_R$           | 20            | 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  | V             |
|                                                                                                          | $I_F = 1\text{ A}$ , $T_j = 175\text{ }^{\circ}\text{C}$          |      | $V_F$    | -    | -    | 0.9  | V             |
| Reverse current                                                                                          | $V_R = V_{RRM}$                                                   |      | $I_R$    | -    | -    | 5    | $\mu\text{A}$ |
|                                                                                                          | $V_R = V_{RRM}$ , $T_j = 150\text{ }^{\circ}\text{C}$             |      | $I_R$    | -    | -    | 200  | $\mu\text{A}$ |
| Reverse recovery time                                                                                    | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $t_R = 0.25\text{ A}$ |      | $t_{rr}$ | -    | -    | 50   | ns            |

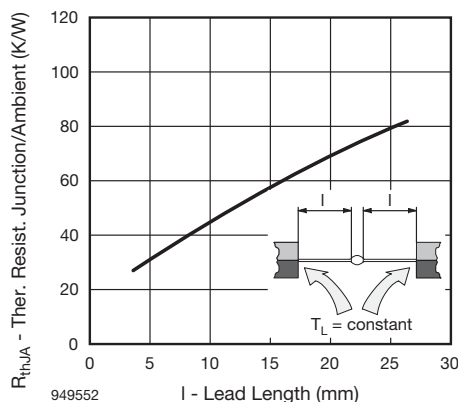
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

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

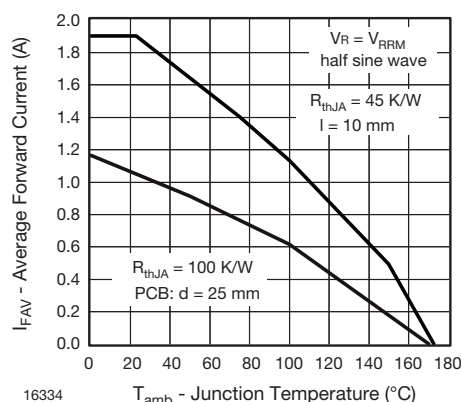


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

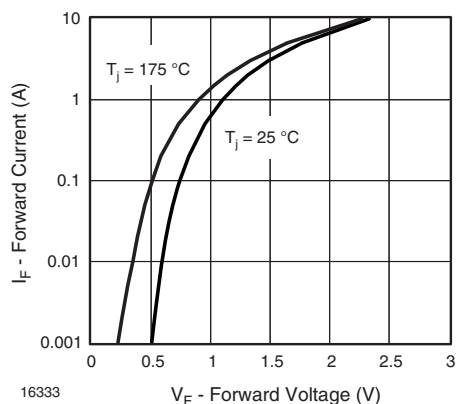


Fig. 2 - Max. Forward Current vs. Forward Voltage

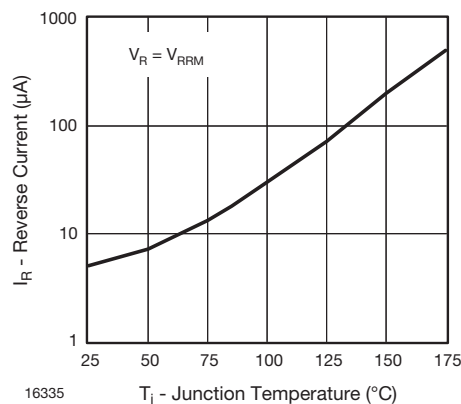


Fig. 4 - Max. Reverse Current vs. Junction Temperature

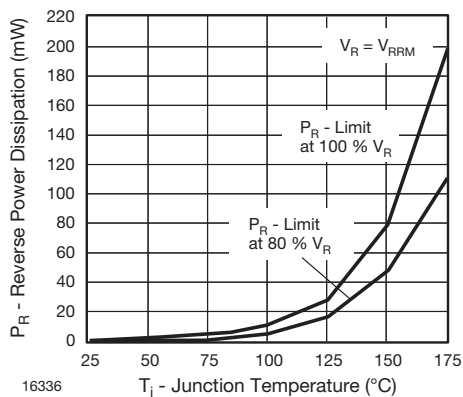


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

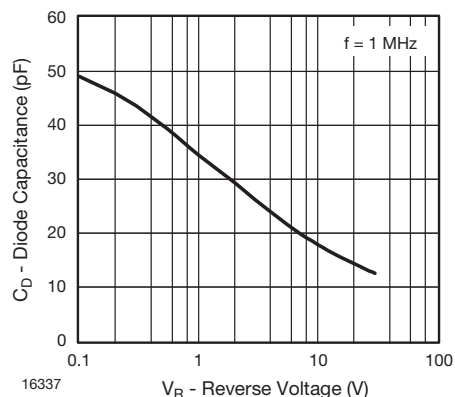
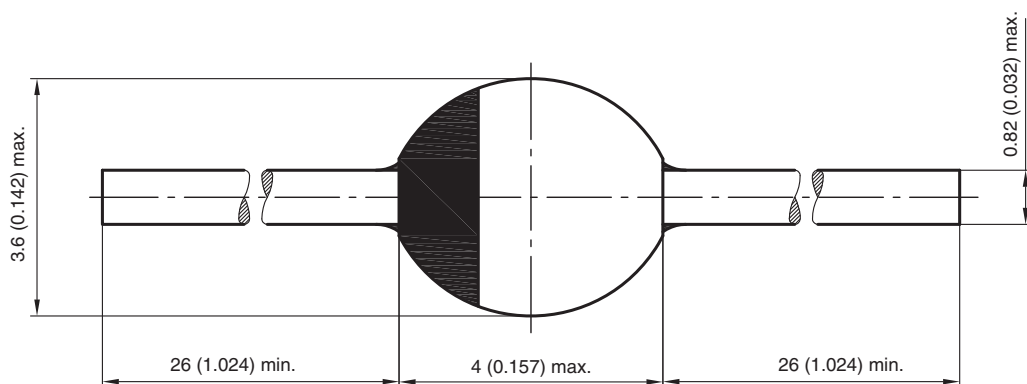


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
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Document no.:6.563-5006.3-4



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