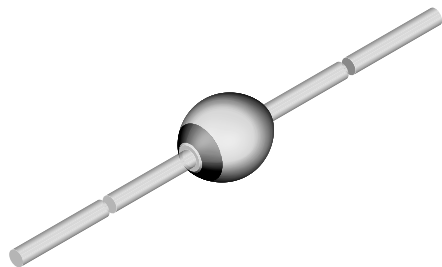




## Fast Avalanche Sinterglass Diode



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?999912](http://www.vishay.com/doc?999912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### APPLICATIONS

- Very fast rectification and switching diodes

### 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

### ORDERING INFORMATION (Example)

| DEVICE NAME | ORDERING CODE | TAPED UNITS                | MINIMUM ORDER QUANTITY |
|-------------|---------------|----------------------------|------------------------|
| BYT54M      | BYT54M-TR     | 5000 per 10" tape and reel | 25 000                 |
| BYT54M      | BYT54M-TAP    | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION                                | PACKAGE |
|--------|-----------------------------------------------------|---------|
| BYT54A | $V_R = 50\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$   | SOD-57  |
| BYT54B | $V_R = 100\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$  | SOD-57  |
| BYT54D | $V_R = 200\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$  | SOD-57  |
| BYT54G | $V_R = 400\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$  | SOD-57  |
| BYT54J | $V_R = 600\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$  | SOD-57  |
| BYT54K | $V_R = 800\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$  | SOD-57  |
| BYT54M | $V_R = 1000\text{ V}$ ; $I_{F(AV)} = 1.25\text{ A}$ | 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        | BYT54A | $V_R = V_{RRM}$ | 50            | V                  |
|                                                   |                                       | BYT54B | $V_R = V_{RRM}$ | 100           | V                  |
|                                                   |                                       | BYT54D | $V_R = V_{RRM}$ | 200           | V                  |
|                                                   |                                       | BYT54G | $V_R = V_{RRM}$ | 400           | V                  |
|                                                   |                                       | BYT54J | $V_R = V_{RRM}$ | 600           | V                  |
|                                                   |                                       | BYT54K | $V_R = V_{RRM}$ | 800           | V                  |
|                                                   |                                       | BYT54M | $V_R = V_{RRM}$ | 1000          | V                  |
| Peak forward surge current                        | $t_p = 10\text{ ms}$ , half sine wave |        | $I_{FSM}$       | 30            | A                  |
| Average forward current                           | On PC board                           |        | $I_{F(AV)}$     | 0.75          | A                  |
|                                                   | $l = 10\text{ mm}$                    |        | $I_{F(AV)}$     | 1.25          | A                  |
| Non repetitive reverse avalanche energy           | $I_{(BR)R} = 0.4\text{ A}$            | BYT54J | $E_R$           | 10            | mJ                 |
|                                                   |                                       | BYT54K | $E_R$           | 10            | mJ                 |
|                                                   |                                       | BYT54M | $E_R$           | 10            | mJ                 |
| Junction and storage temperature range            |                                       |        | $T_j = T_{stg}$ | - 55 to + 175 | $^{\circ}\text{C}$ |



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

| PARAMETER             | TEST CONDITION                                                    | PART | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
|-----------------------|-------------------------------------------------------------------|------|----------|------|------|------|---------------|
| Forward voltage       | $I_F = 1\text{ A}$                                                |      | $V_F$    | -    | -    | 1.5  | V             |
| Reverse current       | $V_R = V_{RRM}$                                                   |      | $I_R$    | -    | -    | 5    | $\mu\text{A}$ |
|                       | $V_R = V_{RRM}$ , $T_J = 150^{\circ}\text{C}$                     |      | $I_R$    | -    | -    | 150  | $\mu\text{A}$ |
| Reverse recovery time | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$ |      | $t_{rr}$ | -    | -    | 100  | ns            |

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

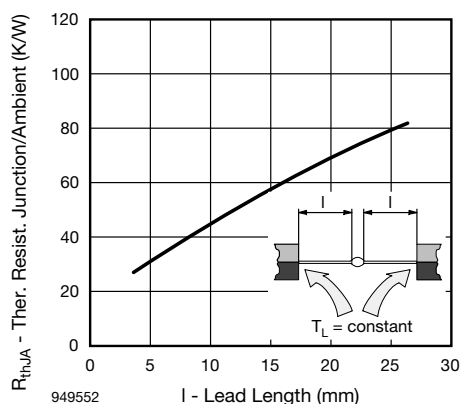


Fig. 1 - Max. Thermal Resistance vs. Lead Length

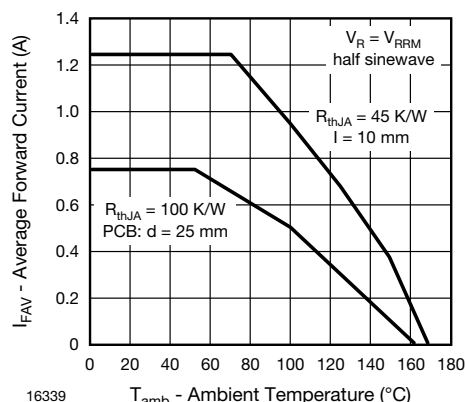


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

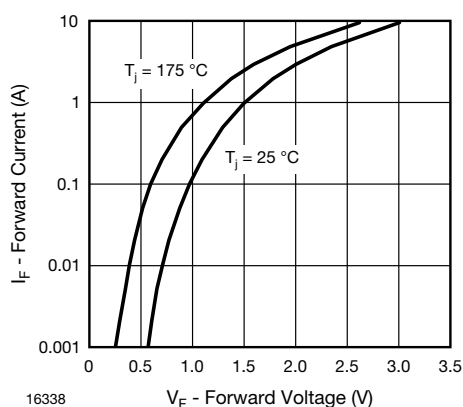


Fig. 2 - Forward Current vs. Forward Voltage

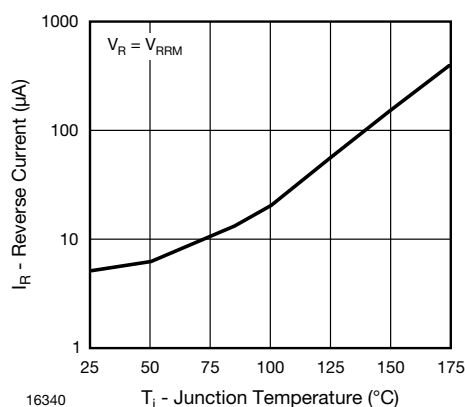


Fig. 4 - Max. Reverse Current vs. Junction Temperature

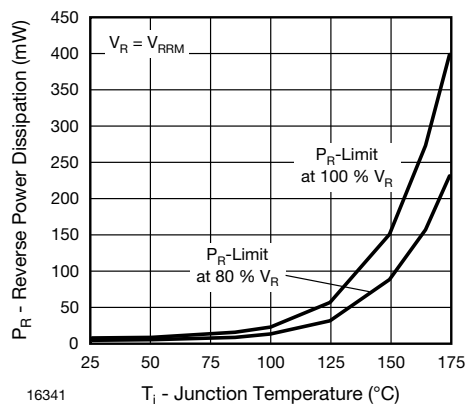


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

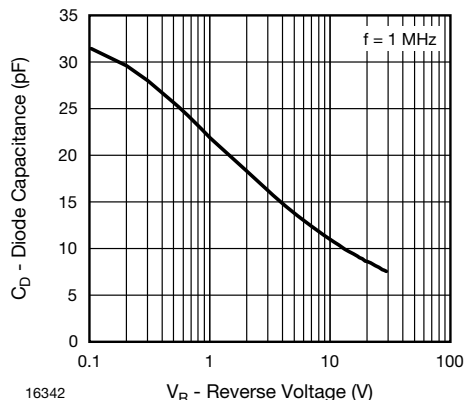
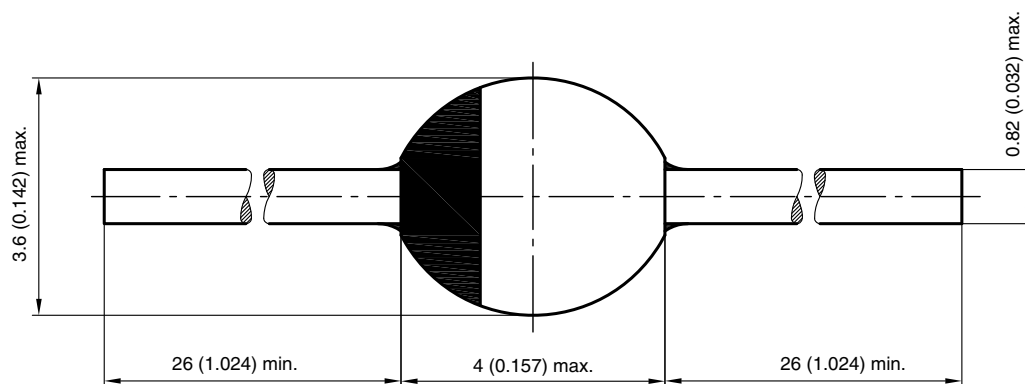


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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