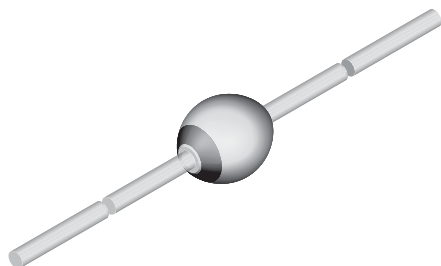


## Fast Avalanche Sinterglass Diode



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**

### APPLICATIONS

- Fast rectification and switching diode for example for TV-line output circuits and switch mode power supply

### 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 |
|-------------|---------------|----------------------------|------------------------|
| BYV16       | BYV16-TR      | 5000 per 10" tape and reel | 25 000                 |
| BYV16       | BYV16-TAP     | 5000 per ammpack           | 25 000                 |

### PARTS TABLE

| PART  | TYPE DIFFERENTIATION                               | PACKAGE |
|-------|----------------------------------------------------|---------|
| BYV12 | $V_R = 100\text{ V}$ ; $I_{F(AV)} = 1.5\text{ A}$  | SOD-57  |
| BYV13 | $V_R = 400\text{ V}$ ; $I_{F(AV)} = 1.5\text{ A}$  | SOD-57  |
| BYV14 | $V_R = 600\text{ V}$ ; $I_{F(AV)} = 1.5\text{ A}$  | SOD-57  |
| BYV15 | $V_R = 800\text{ V}$ ; $I_{F(AV)} = 1.5\text{ A}$  | SOD-57  |
| BYV16 | $V_R = 1000\text{ V}$ ; $I_{F(AV)} = 1.5\text{ A}$ | 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        | BYV12 | $V_R = V_{RRM}$ | 100           | V                  |
|                                                   |                                       | BYV13 | $V_R = V_{RRM}$ | 400           | V                  |
|                                                   |                                       | BYV14 | $V_R = V_{RRM}$ | 600           | V                  |
|                                                   |                                       | BYV15 | $V_R = V_{RRM}$ | 800           | V                  |
|                                                   |                                       | BYV16 | $V_R = V_{RRM}$ | 1000          | V                  |
| Peak forward surge current                        | $t_p = 10\text{ ms}$ , half sine wave |       | $I_{FSM}$       | 40            | A                  |
| Repetitive peak forward current                   |                                       |       | $I_{FRM}$       | 9             | A                  |
| Average forward current                           | $\phi = 180^{\circ}$                  |       | $I_{F(AV)}$     | 1.5           | 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 | $^{\circ}\text{C}$ |

### 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         | $I_F = 1\text{ A}$                                                |      | $V_F$    | -    | -    | 1.5  | V             |
| Reverse current         | $V_R = V_{RRM}$                                                   |      | $I_R$    | -    | 1    | 5    | $\mu\text{A}$ |
|                         | $V_R = V_{RRM}$ , $T_j = 150\text{ }^{\circ}\text{C}$             |      | $I_R$    | -    | 60   | 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            |
| Reverse recovery charge | $I_F = 1\text{ A}$ , $dI/dt = 5\text{ A}/\mu\text{s}$             |      | $Q_{rr}$ | -    | -    | 200  | nC            |

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

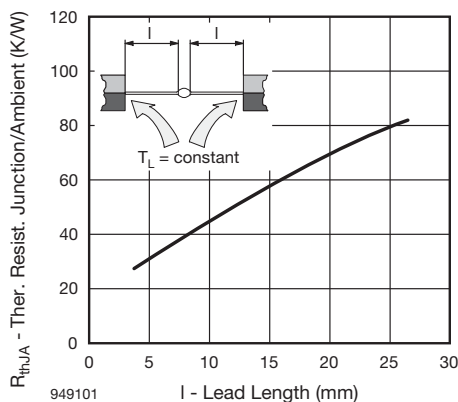


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

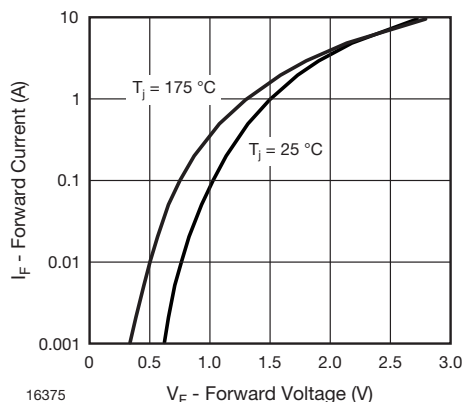


Fig. 3 - Forward Current vs. Forward Voltage

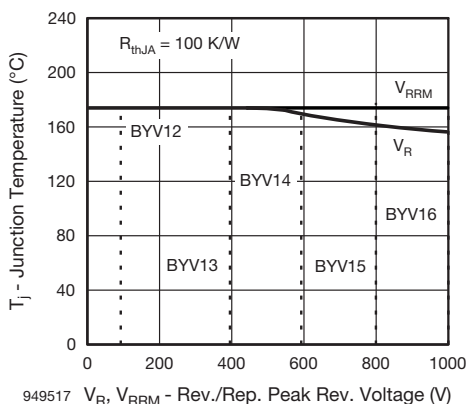


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

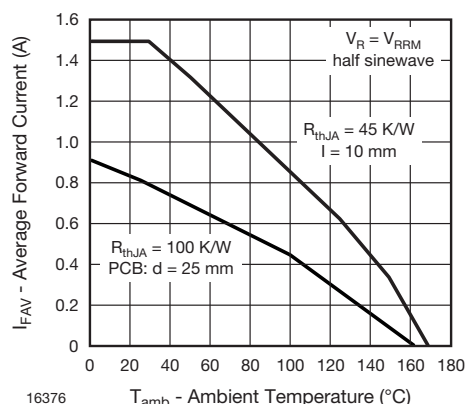


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

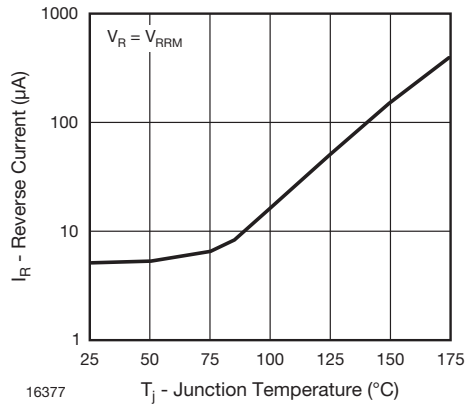


Fig. 5 - Reverse Current vs. Junction Temperature

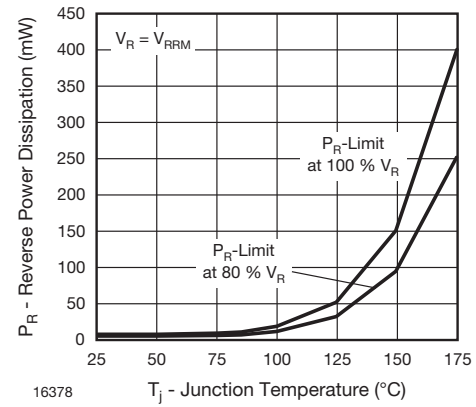


Fig. 6 - Max. Reverse Power Dissipation vs. Junction Temperature

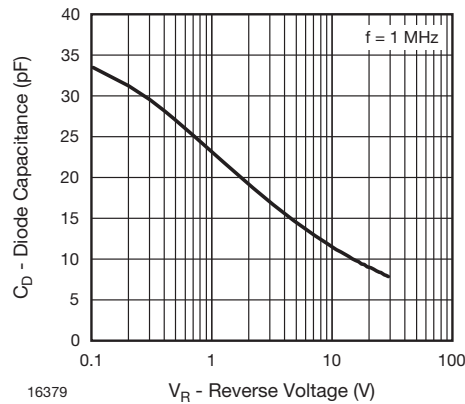


Fig. 7 - Diode Capacitance vs. Reverse Voltage

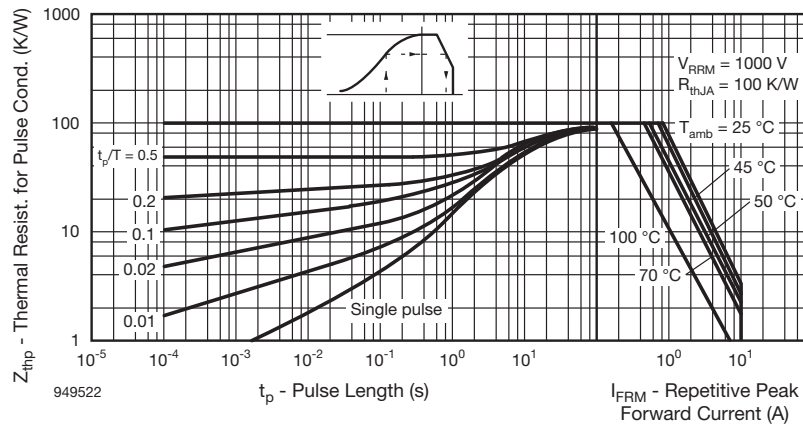
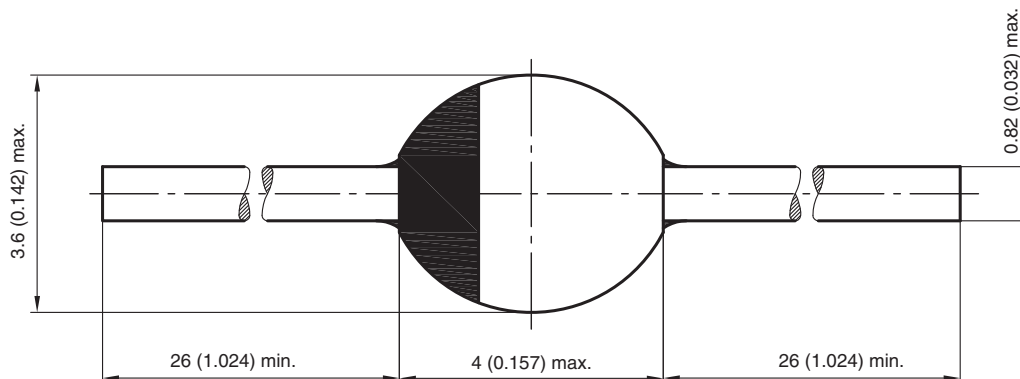


Fig. 8 - Thermal Response



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



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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9