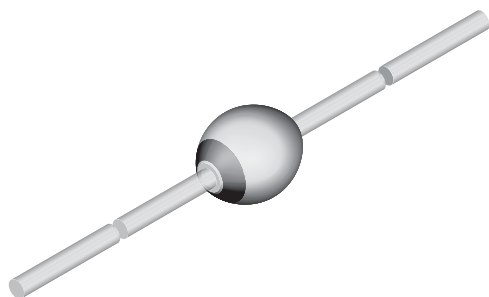




## Standard Avalanche Sinterglass Diode



949539

## DESIGN SUPPORT TOOLS

click logo to get started



## FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- High surge current loading
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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

## APPLICATIONS

- Rectification, general purpose

## 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 |
|-------------|---------------|----------------------------|------------------------|
| BYX86       | BYX86TR       | 5000 per 10" tape and reel | 25 000                 |
| BYX86       | BYX86TAP      | 5000 per ammpack           | 25 000                 |

## PARTS TABLE

| PART  | TYPE DIFFERENTIATION                          | PACKAGE |
|-------|-----------------------------------------------|---------|
| BYX82 | $V_R = 200\text{ V}; I_{F(AV)} = 2\text{ A}$  | SOD-57  |
| BYX83 | $V_R = 400\text{ V}; I_{F(AV)} = 2\text{ A}$  | SOD-57  |
| BYX84 | $V_R = 600\text{ V}; I_{F(AV)} = 2\text{ A}$  | SOD-57  |
| BYX85 | $V_R = 800\text{ V}; I_{F(AV)} = 2\text{ A}$  | SOD-57  |
| BYX86 | $V_R = 1000\text{ V}; I_{F(AV)} = 2\text{ A}$ | 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            | BYX82 | $V_R = V_{RRM}$ | 200         | V                  |
|                                                   |                                           | BYX83 | $V_R = V_{RRM}$ | 400         | V                  |
|                                                   |                                           | BYX84 | $V_R = V_{RRM}$ | 600         | V                  |
|                                                   |                                           | BYX85 | $V_R = V_{RRM}$ | 800         | V                  |
|                                                   |                                           | BYX86 | $V_R = V_{RRM}$ | 1000        | V                  |
| Peak forward surge current                        | $t_p = 10\text{ ms}$ , half sine wave     |       | $I_{FSM}$       | 50          | A                  |
| Repetitive peak forward current                   |                                           |       | $I_{FRM}$       | 10          | A                  |
| Average forward current                           | $T_{amb} \leq 45\text{ }^{\circ}\text{C}$ |       | $I_{F(AV)}$     | 2           | A                  |
| $i^2t$ -rating                                    |                                           |       | $i^2 t$         | 8           | A <sup>2</sup> s   |
| 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                                                    | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
|-------------------------|-------------------------------------------------------------------|----------|------|------|------|---------------|
| Forward voltage         | $I_F = 1\text{ A}$                                                | $V_F$    | -    | 0.9  | 1    | V             |
| Reverse current         | $V_R = V_{RRM}$                                                   | $I_R$    | -    | 0.1  | 1    | $\mu\text{A}$ |
|                         | $V_R = V_{RRM}$ , $T_j = 100\text{ }^{\circ}\text{C}$             | $I_R$    | -    | 10   | 25   | $\mu\text{A}$ |
| Diode capacitance       | $V_R = 4\text{ V}$ , $f = 1\text{ MHz}$                           | $C_D$    | -    | 20   | -    | pF            |
| Reverse recovery time   | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$ | $t_{rr}$ | -    | 2000 | 4000 | ns            |
| Reverse recovery charge | $I_F = I_R = 1\text{ A}$ , $di/dt = 5\text{ A}/\mu\text{s}$       | $Q_{rr}$ | -    | 3    | 6    | $\mu\text{C}$ |

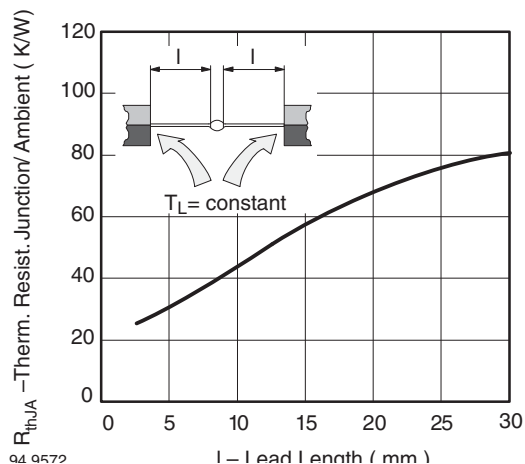
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

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

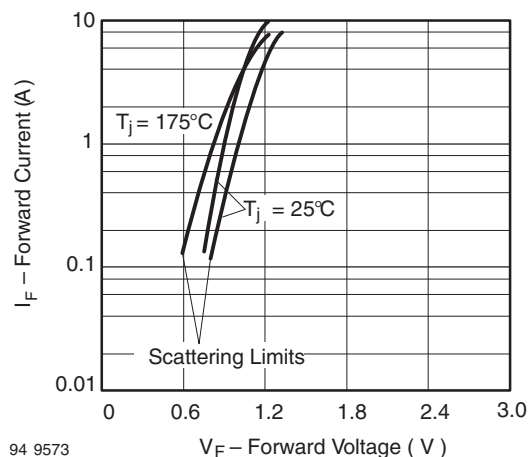


Fig. 3 - Forward Current vs. Forward Voltage

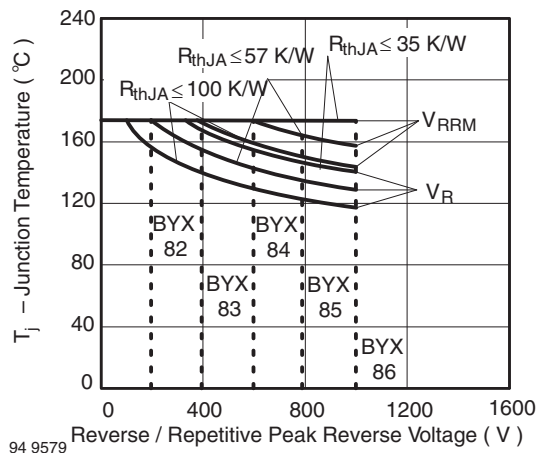


Fig. 2 - Junction Temperature vs. Reverse / Repetitive Peak Reverse Voltage

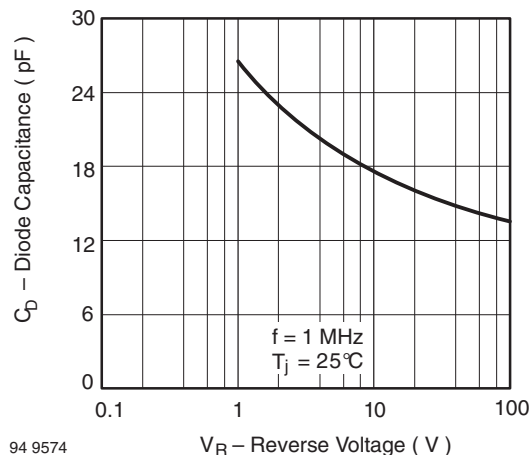


Fig. 4 - Typ. Diode Capacitance vs. Reverse Voltage

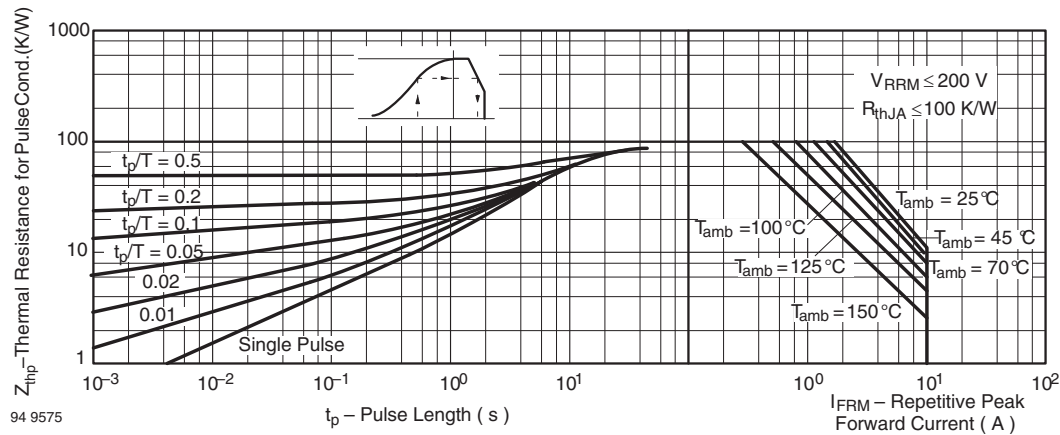


Fig. 5 - Thermal Response

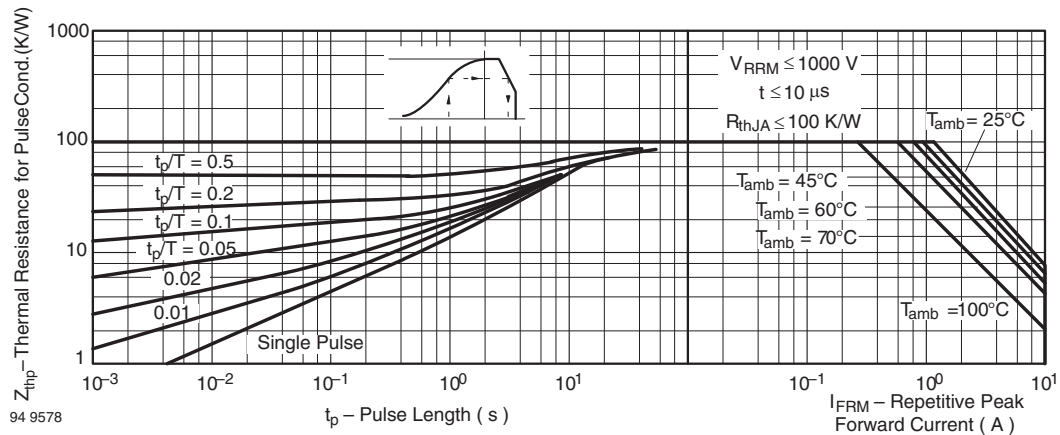


Fig. 6 - Thermal Response

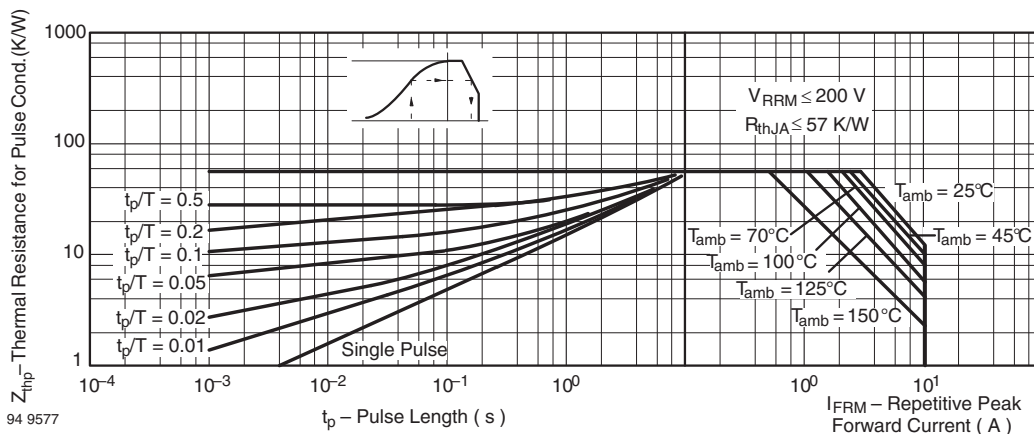


Fig. 7 - Thermal Response

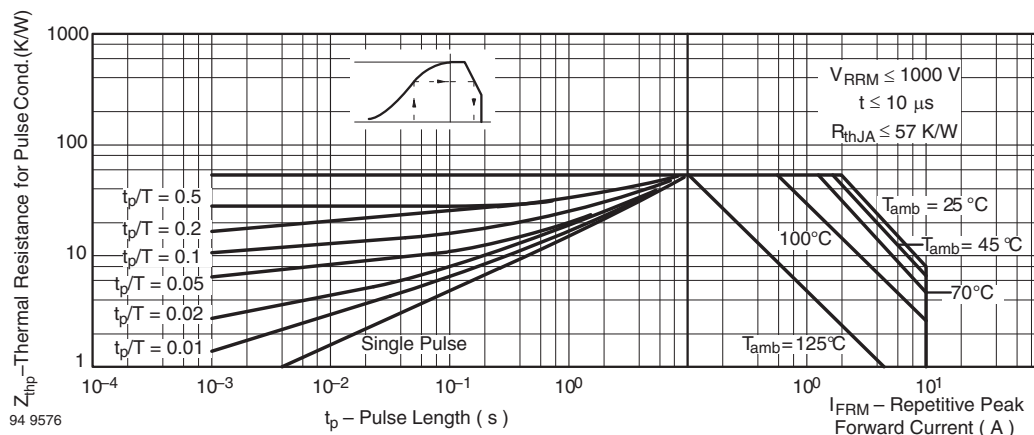
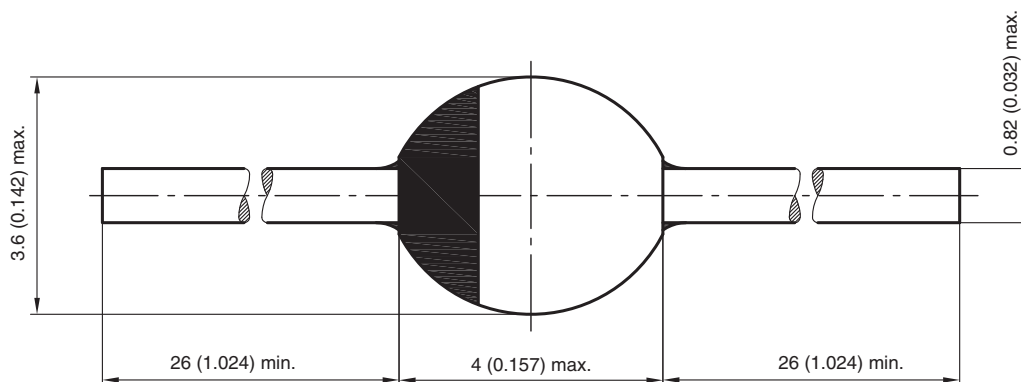


Fig. 8 - Thermal Response

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


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