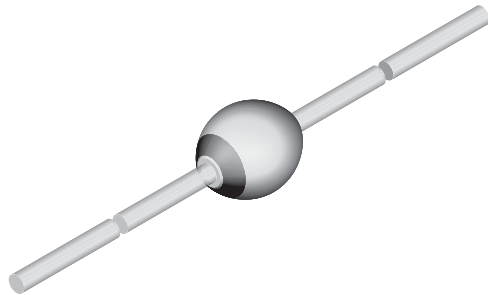




Standard Avalanche Sinterglass Diode



949539

DESIGN SUPPORT TOOLS

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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



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 ² 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 | μA |
| | $V_R = V_{RRM}$, $T_j = 100\text{ }^{\circ}\text{C}$ | I_R | - | 10 | 25 | μA |
| 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 | μC |

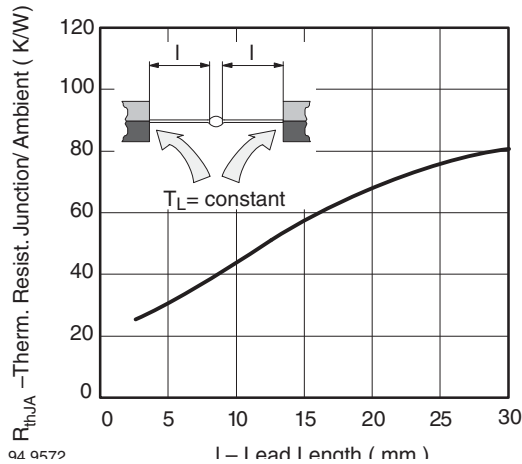
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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

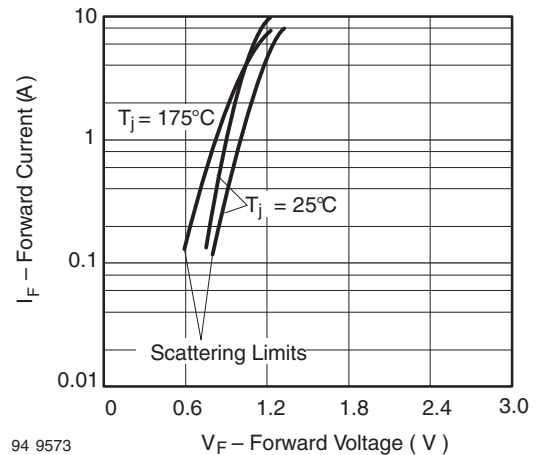


Fig. 3 - Forward Current vs. Forward Voltage

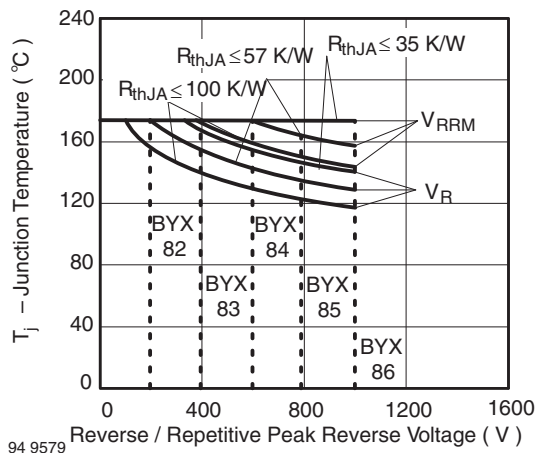


Fig. 2 - Junction Temperature vs. Reverse / Repetitive Peak Reverse Voltage

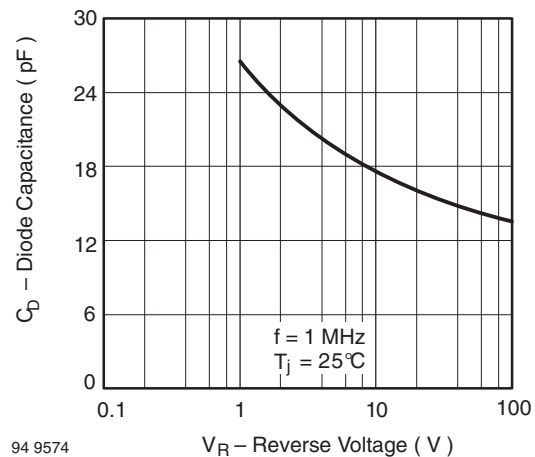


Fig. 4 - Typ. Diode Capacitance vs. Reverse Voltage

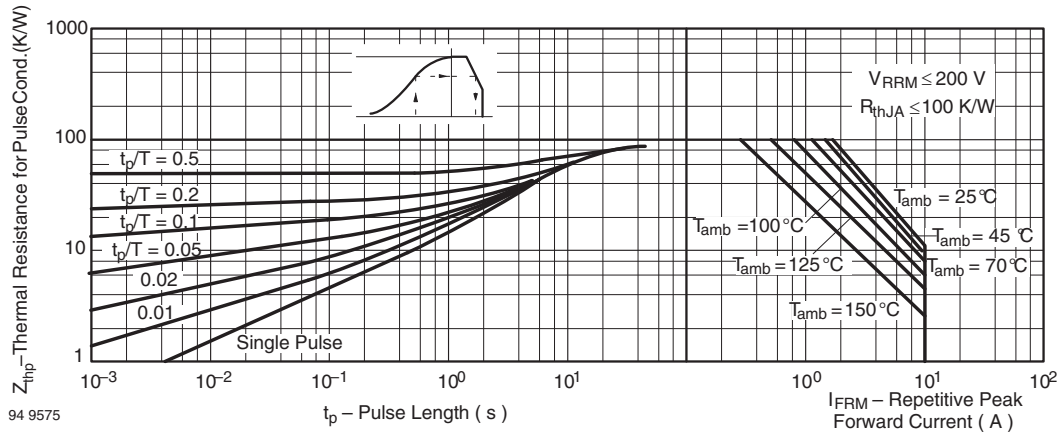


Fig. 5 - Thermal Response

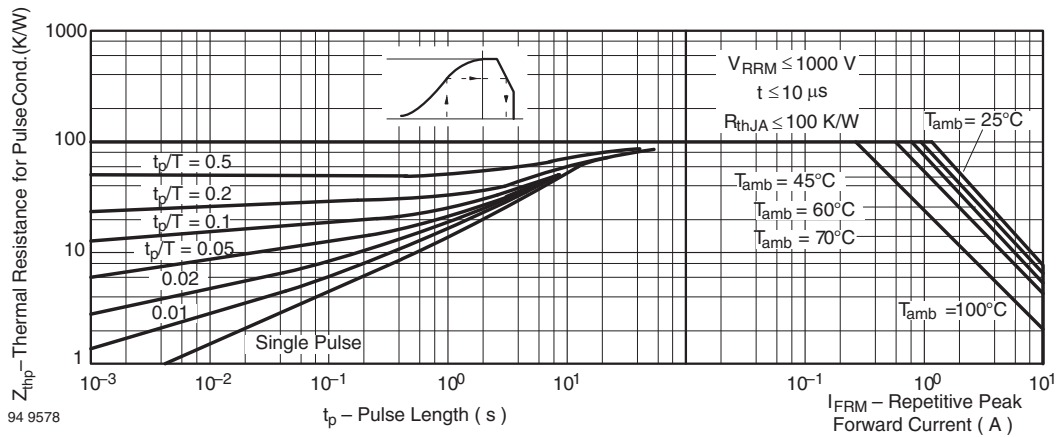


Fig. 6 - Thermal Response

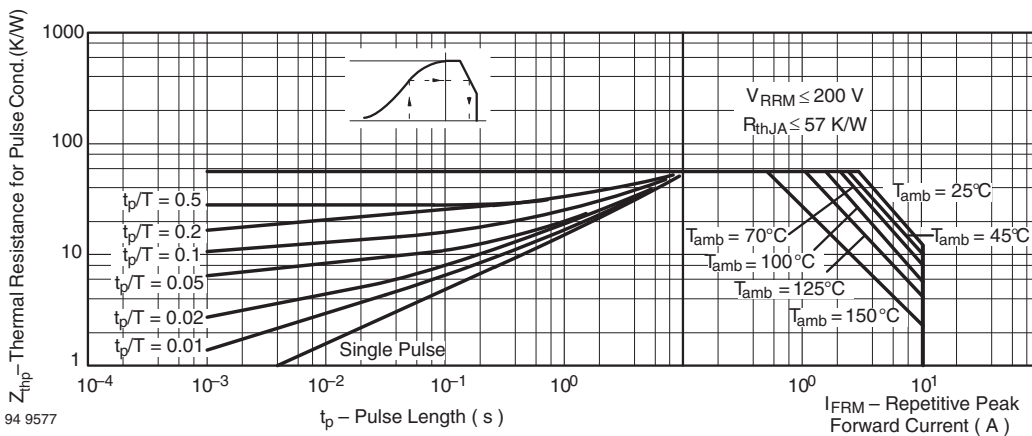


Fig. 7 - Thermal Response

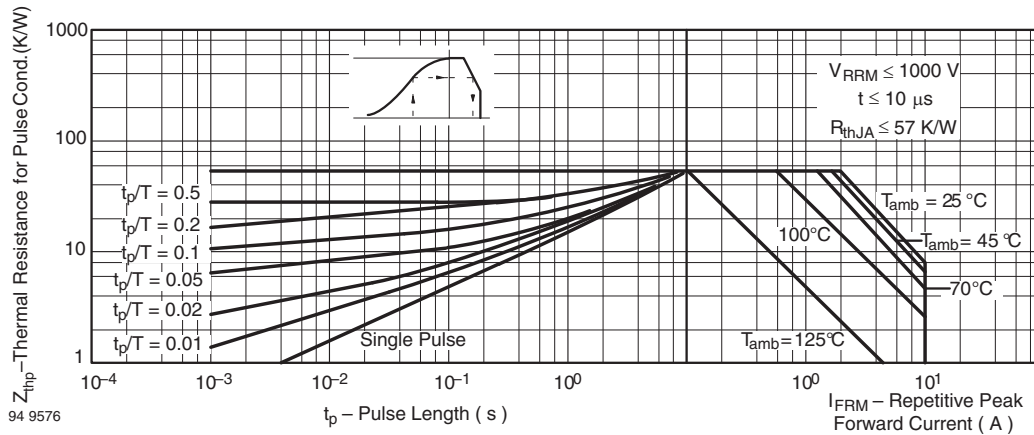
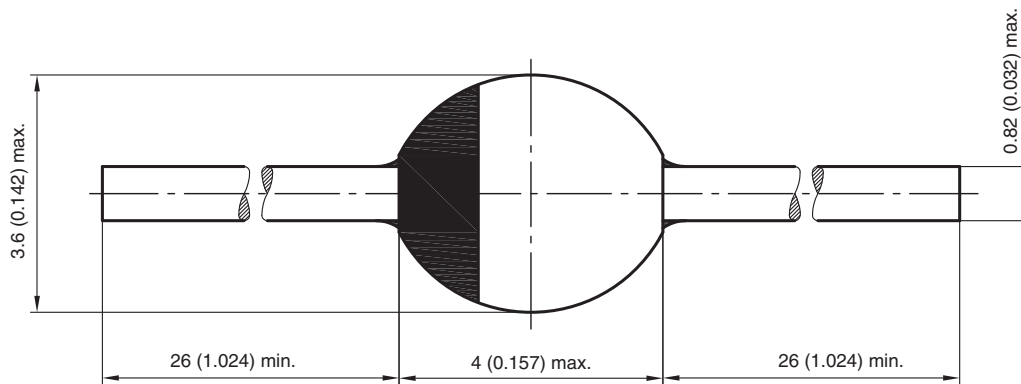


Fig. 8 - Thermal Response

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



20543
 Rev. 3 - Date: 09.February 2005
 Document no.:6.563-5006.3-4



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