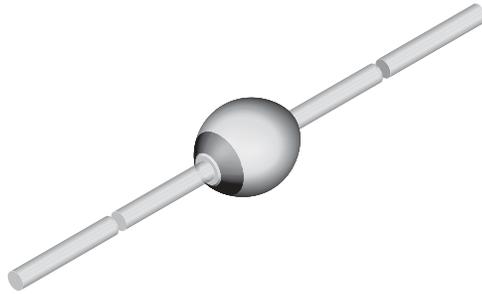




Standard Avalanche Sinterglass Diode



949539

DESIGN SUPPORT TOOLS

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FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Rectification diode

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 |
| BYT51M | BYT51M-TR | 5000 per 10" tape and reel | 25 000 |
| BYT51M | BYT51M-TAP | 5000 per ammopack | 25 000 |

| PARTS TABLE | | |
|-------------|---|---------|
| PART | TYPE DIFFERENTIATION | PACKAGE |
| BYT51A | $V_R = 50\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51B | $V_R = 100\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51D | $V_R = 200\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51G | $V_R = 400\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51J | $V_R = 600\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51K | $V_R = 800\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | SOD-57 |
| BYT51M | $V_R = 1000\text{ V}; I_{F(AV)} = 1.5\text{ A}$ | 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 | BYT51A | $V_R = V_{RRM}$ | 50 | V |
| | | BYT51B | $V_R = V_{RRM}$ | 100 | V |
| | | BYT51D | $V_R = V_{RRM}$ | 200 | V |
| | | BYT51G | $V_R = V_{RRM}$ | 400 | V |
| | | BYT51J | $V_R = V_{RRM}$ | 600 | V |
| | | BYT51K | $V_R = V_{RRM}$ | 800 | V |
| BYT51M | $V_R = V_{RRM}$ | 1000 | V | V | |
| Peak forward surge current | $t_p = 10\text{ ms}$, half sine wave | | I_{FSM} | 50 | A |
| Repetitive peak forward current | | | I_{FRM} | 9 | A |
| Average forward current | $l = 10\text{ mm}$ | | $I_{F(AV)}$ | 1.5 | A |
| | On PC board | | $I_{F(AV)}$ | 1 | A |
| Junction and storage temperature range | | | $T_J = T_{stg}$ | -55 to +175 | $^{\circ}\text{C}$ |
| Non repetitive reverse avalanche energy | $I(BR)R = 1\text{ A}$ | | ER | 20 | mJ |

| 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 | - | 0.95 | 1.1 | V |
| | $I_F = 1\text{ A}$, $T_J = 175\text{ }^{\circ}\text{C}$ | V_F | - | - | 1 | V |
| Reverse current | $V_R = V_{RRM}$ | I_R | - | - | 1 | μA |
| | $V_R = V_{RRM}$, $T_J = 150\text{ }^{\circ}\text{C}$ | I_R | - | - | 100 | μA |
| Reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $i_R = 0.25\text{ A}$ | t_{rr} | - | - | 4 | μs |

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

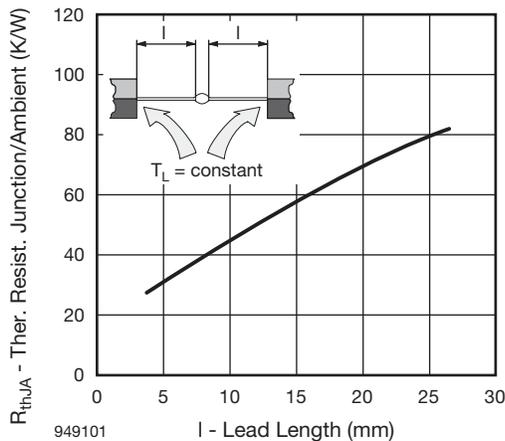


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

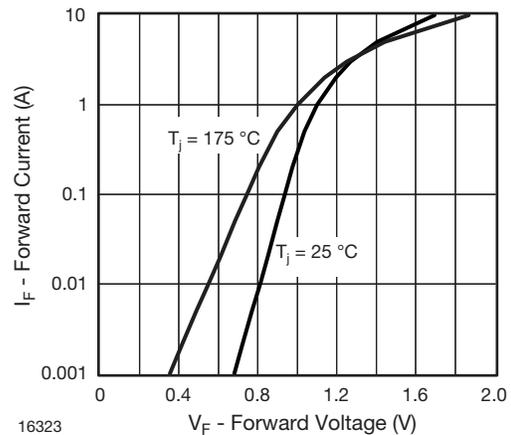


Fig. 2 - Forward Current vs. Forward Voltage

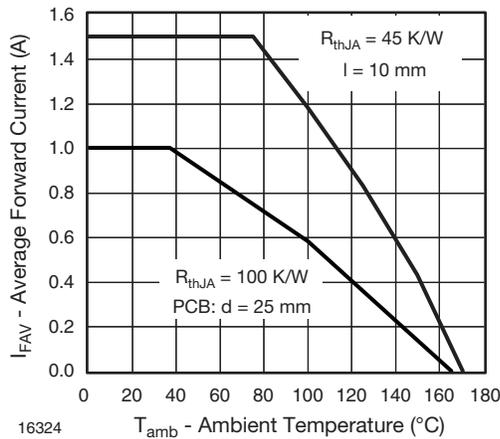


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

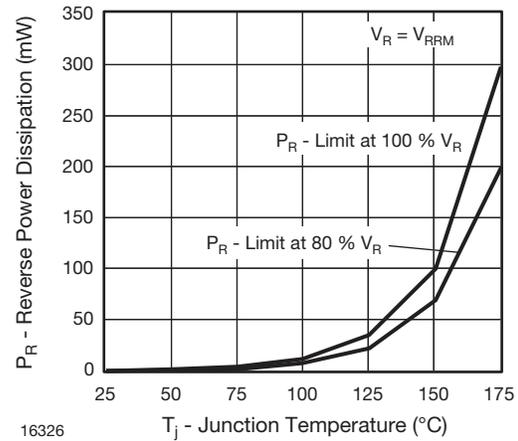


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

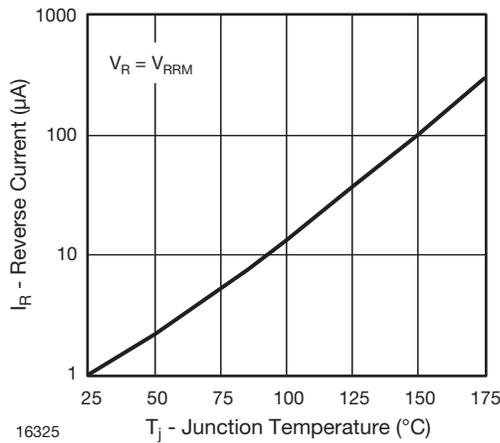


Fig. 4 - Reverse Current vs. Junction Temperature

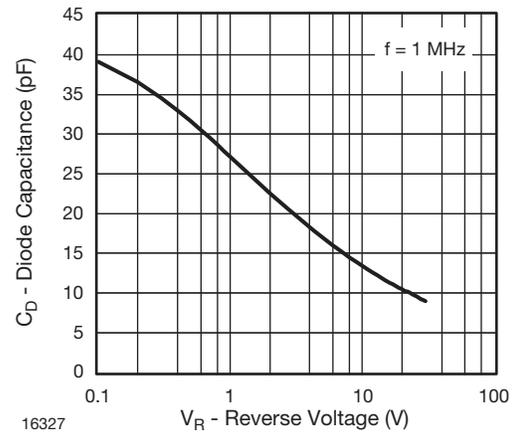
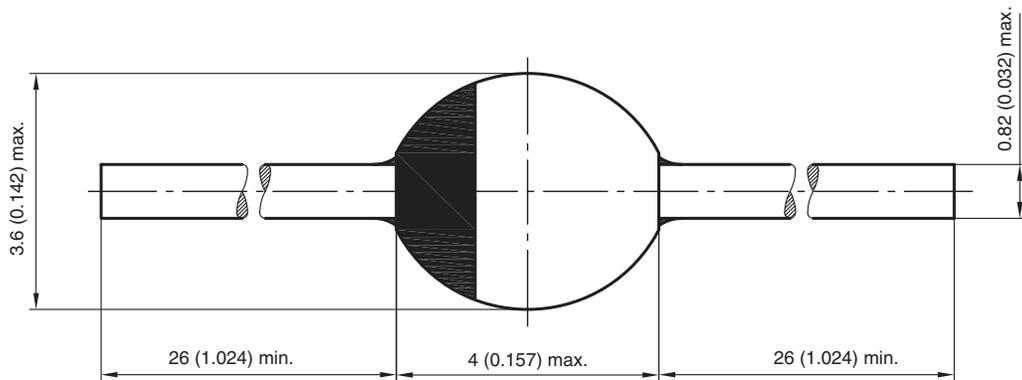


Fig. 6 - Diode Capacitance vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches): SOD-57



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