



Ultra-Fast Avalanche Sinterglass Diode



949539

FEATURES

- Controlled avalanche characteristic
- Low forward voltage
- Ultra fast recovery time
- Glass passivated junction
- Hermetically sealed package
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS COMPLIANT HALOGEN FREE

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

APPLICATIONS

- Very fast rectification diode e.g. for switch mode power supply

| ORDERING INFORMATION (Example) | | | |
|--------------------------------|---------------|----------------------------|------------------------|
| DEVICE NAME | ORDERING CODE | TAPED UNITS | MINIMUM ORDER QUANTITY |
| BYV27-200 | BYV27-200-TR | 5000 per 10" tape and reel | 25 000 |
| BYV27-200 | BYV27-200-TAP | 5000 per ammpack | 25 000 |

| PARTS TABLE | | |
|-------------|--|---------|
| PART | TYPE DIFFERENTIATION | PACKAGE |
| BYV27-50 | $V_R = 50\text{ V}; I_{F(AV)} = 2\text{ A}$ | SOD-57 |
| BYV27-100 | $V_R = 100\text{ V}; I_{F(AV)} = 2\text{ A}$ | SOD-57 |
| BYV27-150 | $V_R = 150\text{ V}; I_{F(AV)} = 2\text{ A}$ | SOD-57 |
| BYV27-200 | $V_R = 200\text{ V}; I_{F(AV)} = 2\text{ A}$ | SOD-57 |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified) | | | | | |
|---|--|-----------|-----------------|---------------|------------------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
| Peak reverse voltage, non repetitive | See electrical characteristics | BYV27-50 | V_{RSM} | 55 | V |
| | | BYV27-100 | V_{RSM} | 110 | V |
| | | BYV27-150 | V_{RSM} | 165 | V |
| | | BYV27-200 | V_{RSM} | 220 | V |
| Reverse voltage = repetitive peak reverse voltage | See electrical characteristics | BYV27-50 | $V_R = V_{RRM}$ | 50 | V |
| | | BYV27-100 | $V_R = V_{RRM}$ | 100 | V |
| | | BYV27-150 | $V_R = V_{RRM}$ | 150 | V |
| | | BYV27-200 | $V_R = V_{RRM}$ | 200 | V |
| Peak forward surge current | $t_p = 10\text{ ms}$, half sine wave | | I_{FSM} | 50 | A |
| Repetitive peak forward current | | | I_{FRM} | 15 | A |
| Average forward current | | | $I_{F(AV)}$ | 2 | A |
| Pulse energy in avalanche mode, non repetitive (inductive load switch off) | $I_{(BR)R} = 1\text{ A}$, $T_j = 175\text{ }^\circ\text{C}$ | | E_R | 20 | 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 | $l = 10\text{ mm}$, $T_L = \text{constant}$ | 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 | $I_F = 3\text{ A}$ | | V_F | - | - | 1.07 | V |
| | $I_F = 3\text{ A}, T_j = 175\text{ }^{\circ}\text{C}$ | | V_F | - | - | 0.88 | V |
| Reverse current | $V_R = V_{RRM}$ | | I_R | - | - | 1 | μA |
| | V_{RSM} | | I_R | - | - | 100 | μA |
| | $V_R = V_{RRM}, T_j = 165\text{ }^{\circ}\text{C}$ | | I_R | - | - | 150 | μA |
| Reverse recovery time | $I_F = 0.5\text{ A}, I_R = 1\text{ A}, I_R = 0.25\text{ A}$ | | t_{rr} | - | - | 25 | ns |

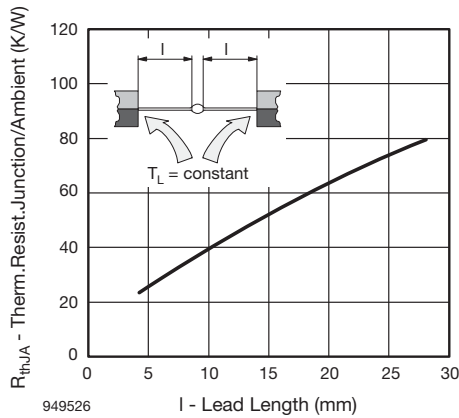
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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



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



Fig. 2 - Forward Current vs. Forward Voltage



Fig. 4 - Reverse Current vs. Junction Temperature

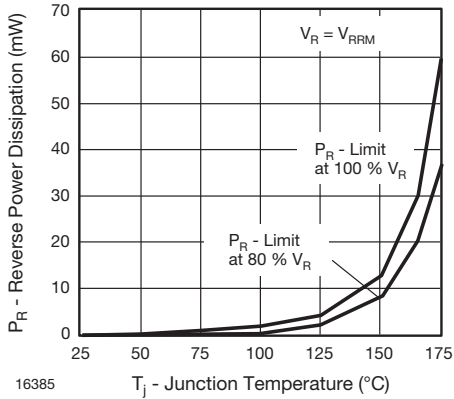


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

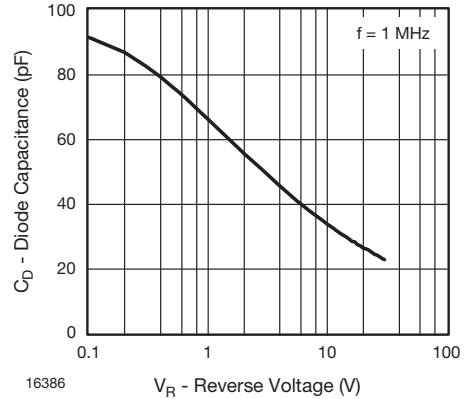


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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