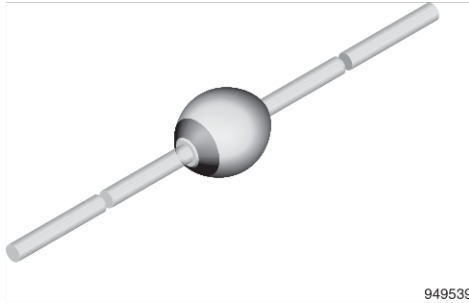


Fast Avalanche Sinterglass Diode



949539

FEATURES

- Glass passivated junction
- Hermetically sealed package
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

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

MECHANICAL DATA

Case: SOD-57 sintered glass case

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 |
|-------------|---------------|----------------------------|------------------------|
| BY203-20S | BY203-20STR | 5000 per 10" tape and reel | 25 000 |
| BY203-20S | BY203-20STAP | 5000 per ammpack | 25 000 |

PARTS TABLE

| PART | TYPE DIFFERENTIATION | PACKAGE |
|-----------|---|---------|
| BY203-12S | $V_R = 1200\text{ V}$; $I_{F(AV)} = 250\text{ mA}$ | SOD-57 |
| BY203-16S | $V_R = 1600\text{ V}$; $I_{F(AV)} = 250\text{ mA}$ | SOD-57 |
| BY203-20S | $V_R = 2000\text{ V}$; $I_{F(AV)} = 250\text{ mA}$ | 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 | $I_R = 100\text{ }\mu\text{A}$ | BY203-12S | $V_R = V_{RRM}$ | 1200 | V |
| | | BY203-16S | $V_R = V_{RRM}$ | 1600 | V |
| | | BY203-20S | $V_R = V_{RRM}$ | 2000 | V |
| Peak forward surge current | $t_p = 10\text{ ms}$, half sine wave | | I_{FSM} | 20 | A |
| Average forward current | | | $I_{F(AV)}$ | 250 | mA |
| Non repetitive reverse avalanche energy | $I_{(BR)R} = 0.4\text{ A}$ | | E_R | 10 | mJ |
| Junction temperature range | | | T_j | - 55 to + 150 | $^\circ\text{C}$ |
| Storage temperature range | | | 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 |
| | Maximum lead length | 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 | $I_F = 200\text{ mA}$, $t_p/T = 0.01$, $t_p = 0.3\text{ms}$ | | V_F | - | - | 2.4 | V |
| Reverse current | $V_R = 700\text{ V}$ | BY203-12S | I_R | - | - | 2 | μA |
| | $V_R = 1000\text{ V}$ | BY203-16S | I_R | - | - | 2 | μA |
| | $V_R = 1200\text{ V}$ | BY203-20S | I_R | - | - | 2 | μA |
| Breakdown voltage | $I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$ | BY203-12S | $V_{(BR)}$ | 1200 | - | - | V |
| | | BY203-16S | $V_{(BR)}$ | 1600 | - | - | V |
| | | BY203-20S | $V_{(BR)}$ | 2000 | - | - | V |
| Reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $i_R = 0.25\text{ A}$ | | t_{rr} | - | - | 300 | ns |

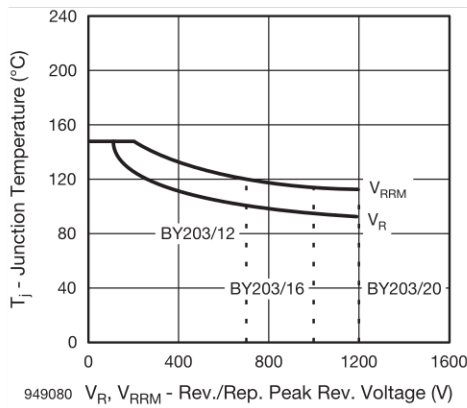
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

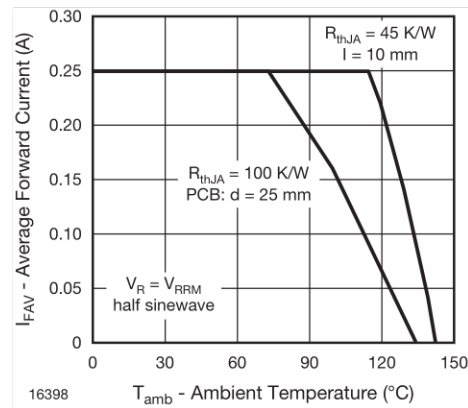


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

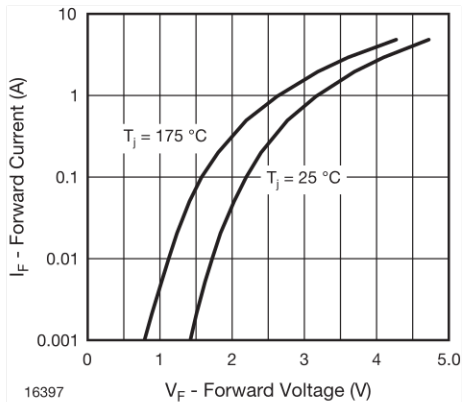


Fig. 2 - Max. Forward Current vs. Forward Voltage

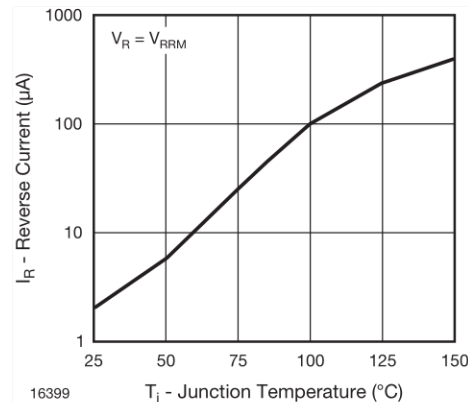


Fig. 4 - Max. Reverse Current vs. Junction Temperature

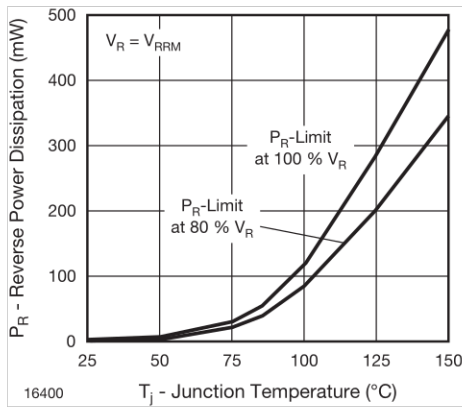


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

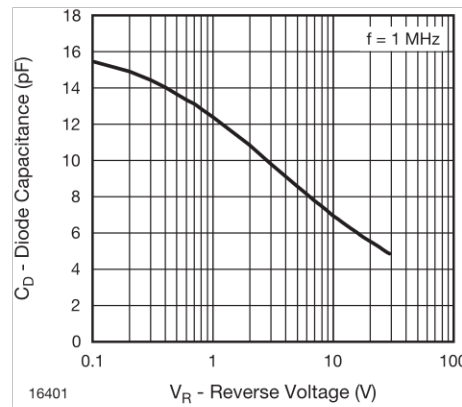
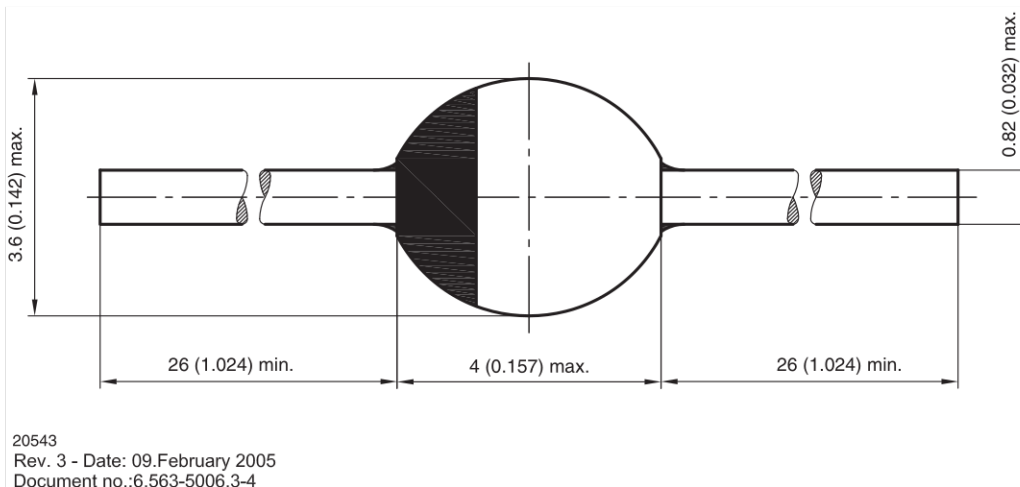


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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





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