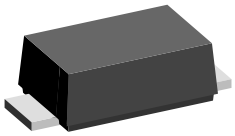
# Small Signal Fast Switching Diode, High Voltage

## Features

- For surface mounted applications
- Low profile package
- Ideal for automated placement
- Glass passivated
- High temperature soldering:
  260 °C/ 10 seconds at terminals
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



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## Mechanical Data

**Case:** JEDEC DO-219AB (SMF®) Plastic case
**Polarity:** Band denotes cathode end
**Weight:** approx. 15 mg

**Packaging codes-options:**
GS18 / 10 K per 13" reel (8 mm tape), 50 k/box
GS08 / 3 K per 7" reel (8 mm tape), 30 k/box

## Parts Table

| Part | Ordering code | Marking | Remarks |
|---|---|---|---|
| RS07B | RS07B-GS18 or RS07B-GS08 | RB | Tape and Reel |
| RS07D | RS07D-GS18 or RS07D-GS08 | RD | Tape and Reel |
| RS07G | RS07G-GS18 or RS07G-GS08 | RG | Tape and Reel |
| RS07J | RS07J-GS18 or RS07J-GS08 | RJ | Tape and Reel |

## Absolute Maximum Ratings

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Part | Symbol | Value | Unit |
|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | | RS07B | $V_{RRM}$ | 100 | V |
| | | RS07D | $V_{RRM}$ | 200 | V |
| | | RS07G | $V_{RRM}$ | 400 | V |
| | | RS07J | $V_{RRM}$ | 600 | V |
| Maximum RMS voltage | | RS07B | $V_{RMS}$ | 70 | V |
| | | RS07D | $V_{RMS}$ | 140 | V |
| | | RS07G | $V_{RMS}$ | 280 | V |
| | | RS07J | $V_{RMS}$ | 420 | V |
| Maximum DC blocking voltage | | RS07B | $V_{DC}$ | 100 | V |
| | | RS07D | $V_{DC}$ | 200 | V |
| | | RS07G | $V_{DC}$ | 400 | V |
| | | RS07J | $V_{DC}$ | 600 | V |
| Maximum average forward rectified current | $T_{tp}$ = 65 °C | | $I_{F(AV)}$ | 1.4 | A |
| | $T_A$ = 45 °C | | $I_{F(AV)}$ | 0.5 | A |

## Thermal Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
|---|---|---|---|---|
| Thermal resistance junction to ambient air[1)] | | $R_{thJA}$ | 180 | K/W |
| Operating junction and storage temperature range | | $T_J$, $T_{STG}$ | - 55 to + 150 | °C |

1) Mounted on epoxy glass PCB with 3 x 3 mm, Cu pads (≥ 40 μm thick)

## Electrical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Part | Symbol | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Maximum instantaneous forward voltage | 0.7 A[2)] | | $V_F$ | | | 1.15 | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A$ = 25°C | | $I_R$ | | | 10 | μA |
| | $T_A$ = 125°C | | $I_R$ | | | 50 | μA |
| Reverse recovery time | $I_F$ = 0.5 A, $I_R$ = 1 A, $I_{rr}$ = 0.25 A | RS07B | $t_{rr}$ | | | 150 | ns |
| | | RS07D | $t_{rr}$ | | | 150 | ns |
| | | RS07G | $t_{rr}$ | | | 150 | ns |
| | | RS07J | $t_{rr}$ | | | 250 | ns |
| Typical capacitance | 4 V, 1 MHz | | $C_j$ | | 9 | | pF |

2) Pulse test, 300 μs pulse width 1 % duty cycle

## Typical Characteristics (Tamb = 25 °C unless otherwise specified)

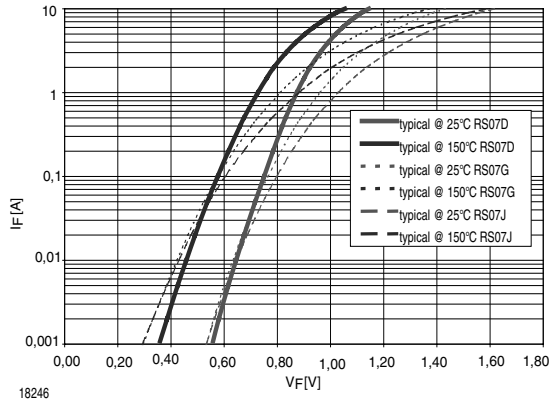



Figure 1. Typical Forward Characteristics

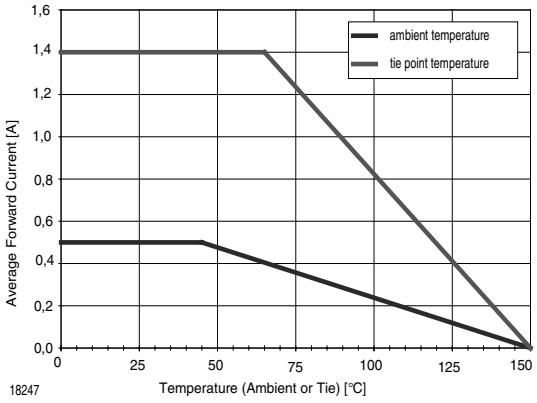



Figure 2. Forward Current Derating Curve

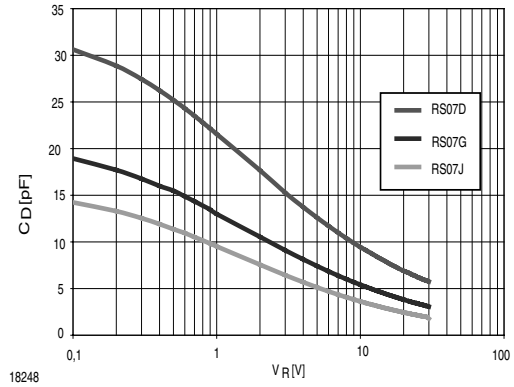



Figure 3. Typ. Diode Capacitance vs. Reverse Voltage

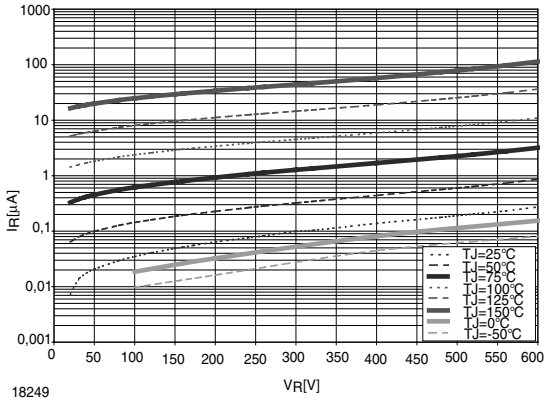
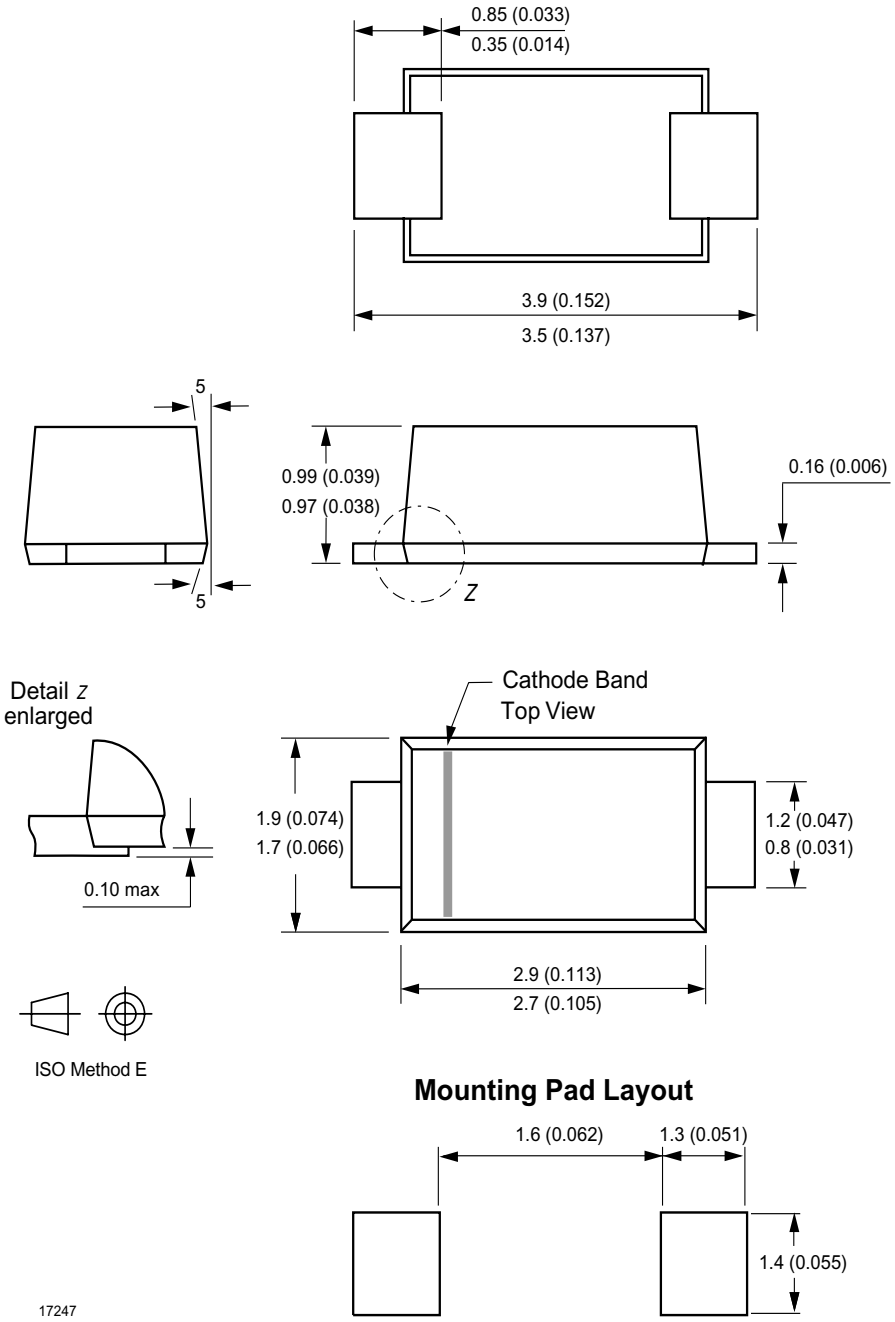



Figure 4. Typical Reverse Characteristics

## Package Dimensions in mm (Inches)




### Mounting Pad Layout

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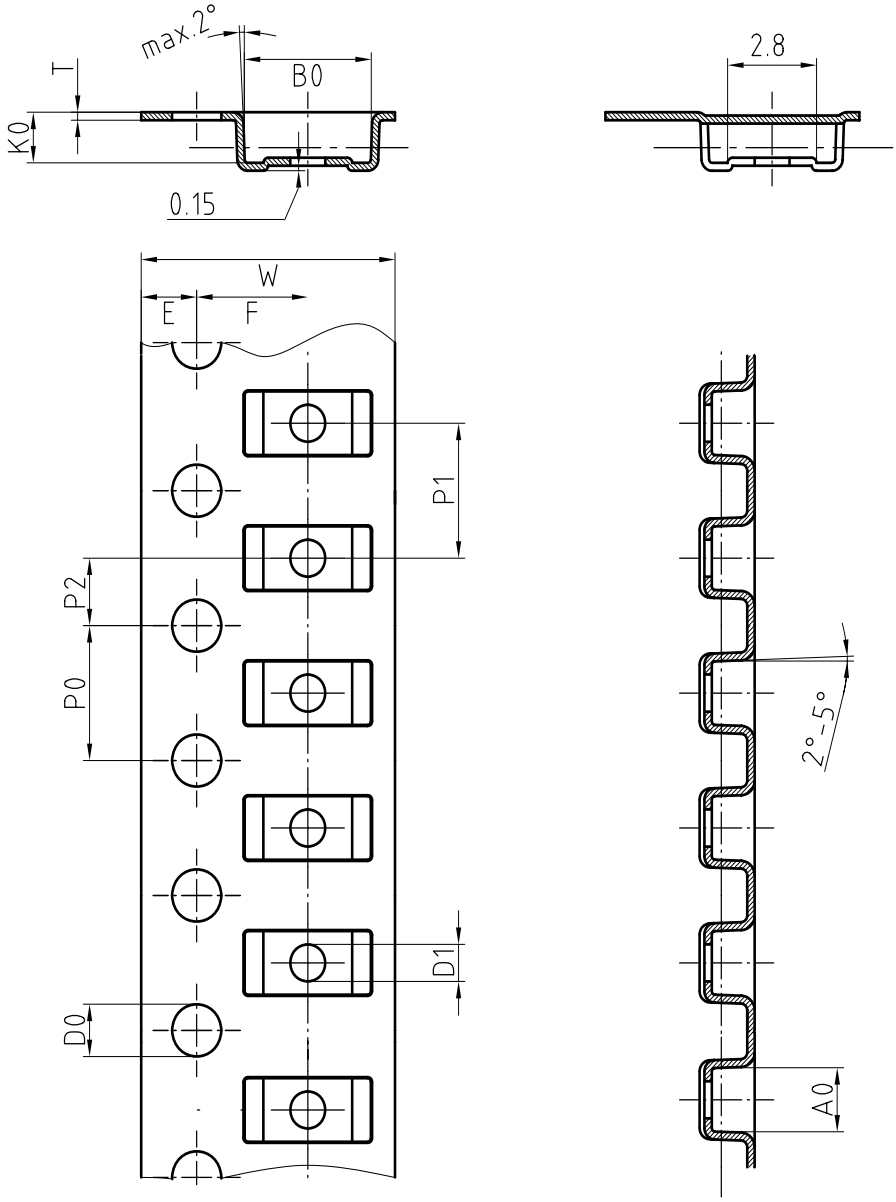
## Blistertape for SMF




| Mat: | A0 | B0 | K0 | W | T | P0 | P2 | P1 | D0 | D1 | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1 | 1.75 | 3.5 |

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## Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.



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