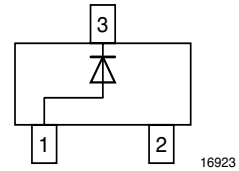
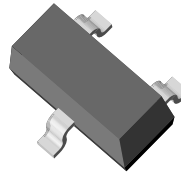
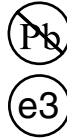


## Small Signal Fast Switching Diode

### Features

- Silicon Epitaxial Planar Diode
- Ultra fast switching speed
- Surface mount package ideally suited for automatic insertion
- High conductance
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### Mechanical Data

**Case:** SOT23 Plastic case

**Weight:** approx. 8.0 mg

**Polarity:** cathode band

**Packaging Codes/Options:**

GS18 / 10 k per 13" reel (8 mm tape), 10 k/box

GS08 / 3 k per 7" reel (8 mm tape), 15 k/box

### Parts Table

| Part    | Ordering code                | Marking | Remarks       |
|---------|------------------------------|---------|---------------|
| BAS16-V | BAS16-V-GS18 or BAS16-V_GS08 | A6      | Tape and Reel |

### Absolute Maximum Ratings

T<sub>amb</sub> = 25 °C, unless otherwise specified

| Parameter  | Test condition  | Symbol   | Value | Unit |
|--|---|--|-------|------|
| Non repetitive peak reverse voltage  |   | V <sub>RM</sub>                                      | 100   | V    |
| Repetitive peak reverse voltage<br>= Working peak reverse voltage<br>= DC Blocking voltage |   | V <sub>RRM</sub> = V <sub>RWM</sub> = V <sub>R</sub> | 75    | V    |
| Peak forward surge current   | t <sub>p</sub> = 1 s  | I <sub>FSM</sub>                                     | 1     | A    |
|  | t <sub>p</sub> = 1 μs   | I <sub>FSM</sub>                                     | 2     | A    |
| Average forward current  | half wave rectification with resistive load and f ≥ 50 MHz, on ceramic substrate<br>8 mm x 10 mm x 0.7 mm | I <sub>FAV</sub>                                     | 150   | mA   |
| Forward current  | on ceramic substrate<br>8 mm x 10 mm x 0.7 mm   | I <sub>F</sub>                                       | 300   | mA   |
| Power dissipation  | on ceramic substrate<br>8 mm x 10 mm x 0.7 mm   | P <sub>tot</sub>                                     | 350   | mW   |

## Thermal Characteristics

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

| Parameter                              | Test condition                                | Symbol          | Value         | Unit               |
|--|---|-----------------|---------------|--------------------|
| Junction ambient                       | on ceramic substrate<br>8 mm x 10 mm x 0.7 mm | $R_{thJA}$      | 357           | K/W                |
| Junction and storage temperature range |   | $T_j = T_{stg}$ | - 55 to + 150 | $^{\circ}\text{C}$ |

## Electrical Characteristics

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

| Parameter             | Test condition   | Symbol   | Min | Typ. | Max  | Unit          |
|-----------------------|--|----------|-----|------|------|---------------|
| Forward voltage       | $I_F = 1\text{ mA}$  | $V_F$    |     |      | 715  | mV            |
|                       | $I_F = 10\text{ mA}$   | $V_F$    |     |      | 855  | mV            |
|                       | $I_F = 50\text{ mA}$   | $V_F$    |     |      | 1    | V             |
|                       | $I_F = 150\text{ mA}$  | $V_F$    |     |      | 1.25 | V             |
| Reverse current       | $V_R = 75\text{ V}$  | $I_R$    |     |      | 1    | $\mu\text{A}$ |
|                       | $V_R = 75\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$                                 | $I_R$    |     |      | 50   | $\mu\text{A}$ |
|                       | $V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$                                 | $I_R$    |     |      | 30   | $\mu\text{A}$ |
| Diode capacitance     | $V_R = 0, f = 1\text{ MHz}$  | $C_D$    |     |      | 4    | pF            |
| Reverse recovery time | $I_F = 10\text{ mA}$ to $I_R = 1\text{ mA}$ ,<br>$V_R = 6\text{ V}, R_L = 100\ \Omega$ | $t_{rr}$ |     |      | 6    | ns            |

## Typical Characteristics

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

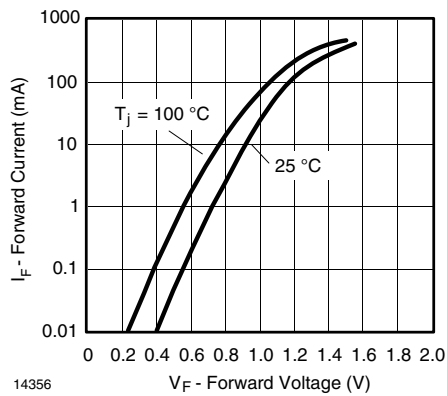


Figure 1. Forward Current vs. Forward Voltage

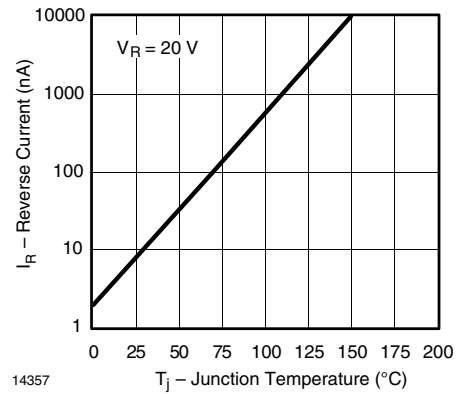
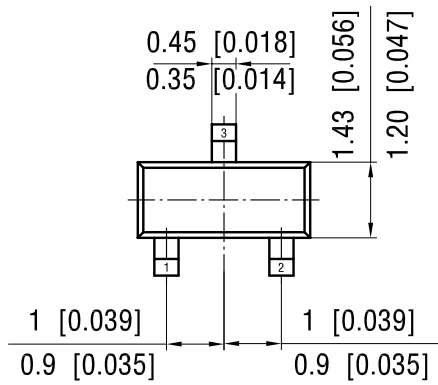
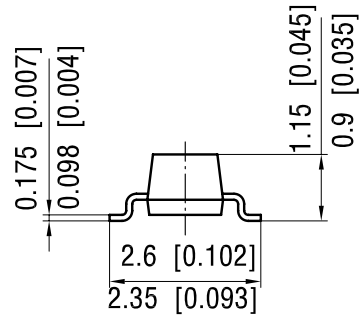
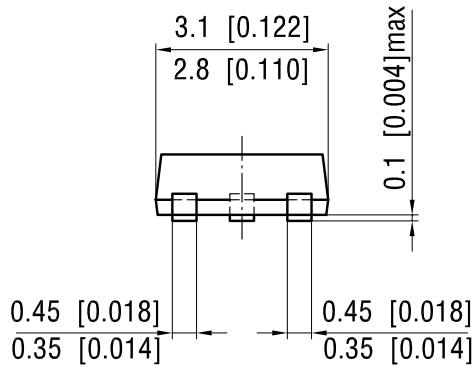
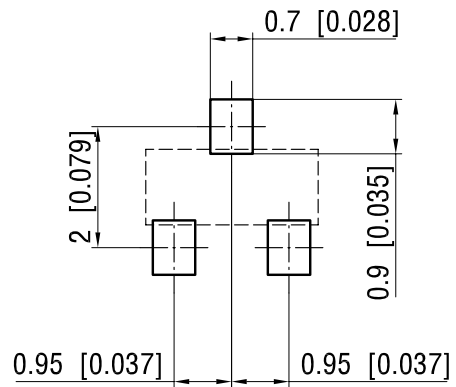


Figure 2. Reverse Current vs. Junction Temperature

## Package Dimensions in mm (Inches)



foot print recommendation:



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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.

We reserve the right to make changes to improve technical design  
and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



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