

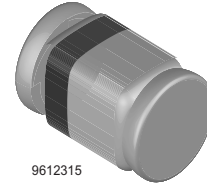
## Small Signal Schottky Barrier Diode

### Features

- Integrated protection ring against static discharge
- Very low forward voltage

### Applications

Applications where a very low forward voltage is required



9612315

### Mechanical Data

**Case:** MicroMELF Glass Case

**Weight:** approx. 12 mg

**Cathode Band Color:** Black

**Packaging Codes/Options:**

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

GS08 / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

### Parts Table

| Part   | Type differentiation | Ordering code              | Remarks       |
|--------|----------------------|----------------------------|---------------|
| BAS386 | $V_R = 50\text{ V}$  | BAS386-GS18 or BAS386-GS08 | Tape and Reel |

### Absolute Maximum Ratings

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

| Parameter                       | Test condition        | Symbol    | Value | Unit |
|---------------------------------|-----------------------|-----------|-------|------|
| Reverse voltage                 |                       | $V_R$     | 50    | V    |
| Peak forward surge current      | $t_p = 10\text{ ms}$  | $I_{FSM}$ | 5     | A    |
| Repetitive peak forward current | $t_p \leq 1\text{ s}$ | $I_{FRM}$ | 500   | mA   |
| Forward current                 |                       | $I_F$     | 200   | mA   |
| Average forward current         |                       | $I_{FAV}$ | 200   | mA   |

### Thermal Characteristics

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

| Parameter                 | Test condition                        | Symbol     | Value         | Unit             |
|---------------------------|---------------------------------------|------------|---------------|------------------|
| Junction ambient          | on PC board<br>50 mm x 50 mm x 1.6 mm | $R_{thJA}$ | 320           | K/W              |
| Junction temperature      |                                       | $T_j$      | 125           | $^\circ\text{C}$ |
| Storage temperature range |                                       | $T_{stg}$  | - 65 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   | $I_F = 0.1\text{ mA}$                | $V_F$  |     |      | 300 | mV            |
|                   | $I_F = 1\text{ mA}$                  | $V_F$  |     |      | 380 | mV            |
|                   | $I_F = 10\text{ mA}$                 | $V_F$  |     |      | 450 | mV            |
|                   | $I_F = 30\text{ mA}$                 | $V_F$  |     |      | 600 | mV            |
|                   | $I_F = 100\text{ mA}$                | $V_F$  |     |      | 900 | mV            |
| Reverse current   | $V_R = 40\text{ V}$                  | $I_R$  |     |      | 5   | $\mu\text{A}$ |
| Diode capacitance | $V_R = 1\text{ V}, f = 1\text{ MHz}$ | $C_D$  |     |      | 8   | pF            |

### Typical Characteristics ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

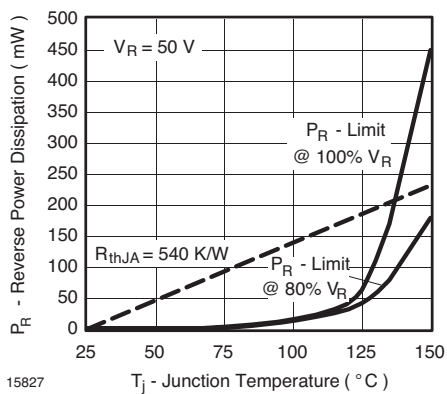


Fig. 1 Max. Reverse Power Dissipation vs. Junction Temperature

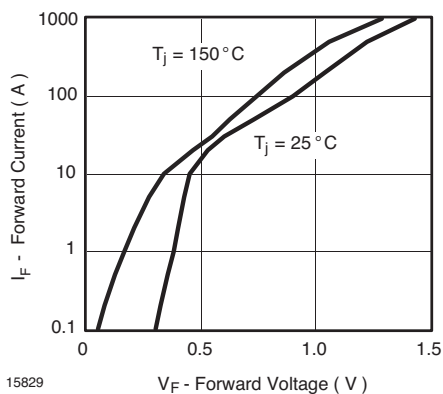


Fig. 3 Forward Current vs. Forward Voltage

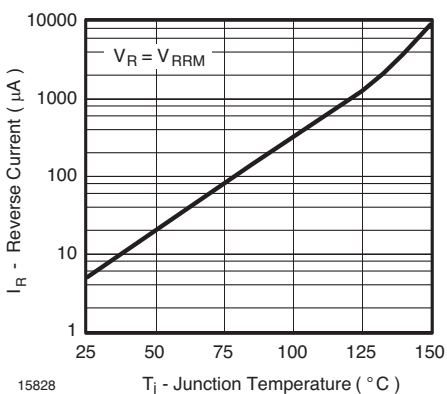


Fig. 2 Reverse Current vs. Junction Temperature

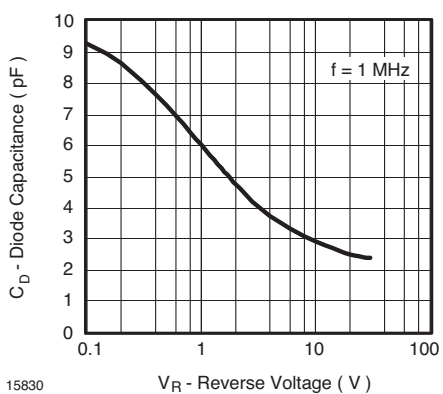


Fig. 4 Diode Capacitance vs. Reverse Voltage

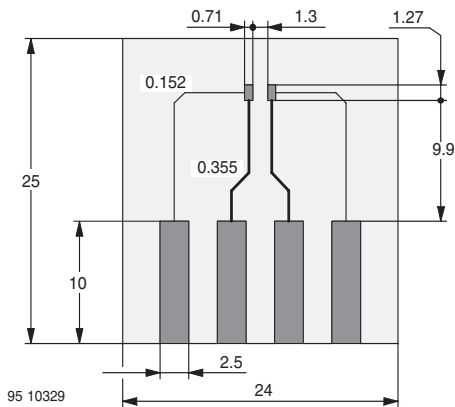
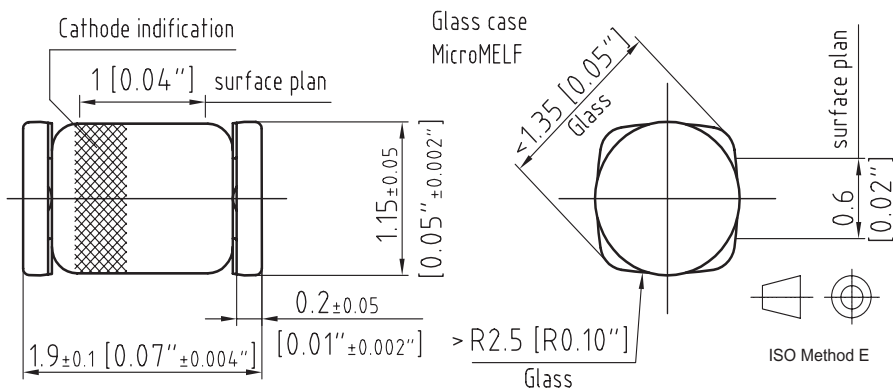
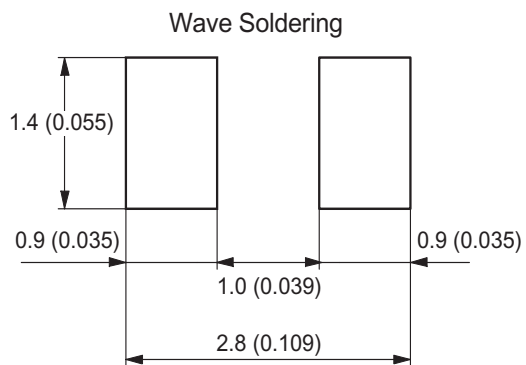
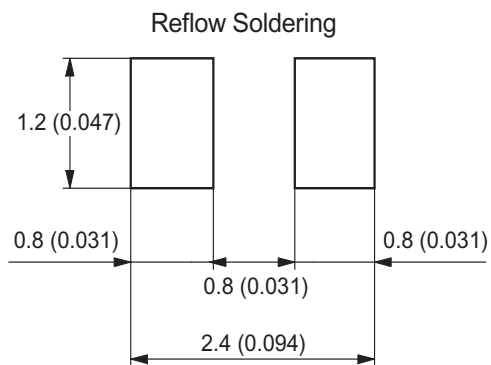


Fig. 5 Board for  $R_{thJA}$  definition (in mm)

## Package Dimensions in mm



9612072



### Ozone Depleting Substances Policy Statement

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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.

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