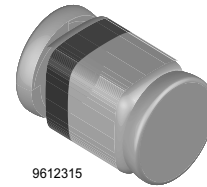


Small Signal Switching Diodes, High Voltage

Features

- Silicon Epitaxial Planar Diodes
- Saving space
- Hermetic sealed parts
- Fits onto SOD323 / SOT23 footprints
- Electrical data identical with the devices BAV100...BAV103 / BAV200...BAV203
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



9612315

Applications

- General purposes

Mechanical Data

Case: MicroMELF Glass case

Weight: approx. 12 mg

Cathode Band Color: Black

Packaging Codes/Options:

TR3 / 10 k per 13" reel (8 mm tape), 10 k/box

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

Parts Table

| Part | Type differentiation | Ordering code | Remarks |
|--------|--------------------------|-------------------------|---------------|
| BAV300 | $V_{RRM} = 60\text{ V}$ | BAV300-TR3 or BAV300-TR | Tape and Reel |
| BAV301 | $V_{RRM} = 120\text{ V}$ | BAV301-TR3 or BAV301-TR | Tape and Reel |
| BAV302 | $V_{RRM} = 200\text{ V}$ | BAV302-TR3 or BAV302-TR | Tape and Reel |
| BAV303 | $V_{RRM} = 250\text{ V}$ | BAV303-TR3 or BAV303-TR | Tape and Reel |

Absolute Maximum Ratings

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

| Parameter | Test condition | Part | Symbol | Value | Unit |
|----------------------------|--|--------|-----------|-------|------|
| Peak reverse voltage | | BAV300 | V_{RRM} | 60 | V |
| | | BAV301 | V_{RRM} | 120 | V |
| | | BAV302 | V_{RRM} | 200 | V |
| | | BAV303 | V_{RRM} | 250 | V |
| Reverse voltage | | BAV300 | V_R | 50 | V |
| | | BAV301 | V_R | 100 | V |
| | | BAV302 | V_R | 150 | V |
| | | BAV303 | V_R | 200 | V |
| Forward continuous current | | | I_F | 250 | mA |
| Peak forward surge current | $t_p = 1\text{ s}, T_j = 25\text{ }^{\circ}\text{C}$ | | I_{FSM} | 1 | A |
| Forward peak current | $f = 50\text{ Hz}$ | | I_{FM} | 625 | mA |

Thermal Characteristics

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

| Parameter | Test condition | Symbol | Value | Unit |
|---------------------------|---|------------|---------------|--------------------|
| Junction to ambient air | mounted on epoxy-glass hard tissue, Fig. 4 35 μm copper clad, 0.9 mm^2 copper area per electrode | R_{thJA} | 500 | K/W |
| Junction temperature | | T_j | 175 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | - 65 to + 175 | $^{\circ}\text{C}$ |

Electrical Characteristics

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

| Parameter | Test condition | Part | Symbol | Min | Typ. | Max | Unit |
|---------------------------------|---|--------|------------|-----|------|------|---------------|
| Forward voltage | $I_F = 100\text{ mA}$ | | V_F | | | 1000 | mV |
| Reverse current | $V_R = 50\text{ V}$ | BAV300 | I_R | | | 100 | nA |
| | $V_R = 100\text{ V}$ | BAV301 | I_R | | | 100 | nA |
| | $V_R = 150\text{ V}$ | BAV302 | I_R | | | 100 | nA |
| | $V_R = 200\text{ V}$ | BAV303 | I_R | | | 100 | nA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 50\text{ V}$ | BAV300 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 100\text{ V}$ | BAV301 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 150\text{ V}$ | BAV302 | I_R | | | 15 | μA |
| | $T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 200\text{ V}$ | BAV303 | I_R | | | 15 | μA |
| Breakdown voltage | $I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$ | BAV300 | $V_{(BR)}$ | 60 | | | V |
| | $I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$ | BAV301 | $V_{(BR)}$ | 120 | | | V |
| | | BAV302 | $V_{(BR)}$ | 200 | | | V |
| | | BAV303 | $V_{(BR)}$ | 250 | | | V |
| Diode capacitance | $V_R = 0$, $f = 1\text{ MHz}$ | | C_D | | 1.5 | | pF |
| Differential forward resistance | $I_F = 10\text{ mA}$ | | r_f | | 5 | | Ω |
| Reverse recovery time | $I_F = I_R = 30\text{ mA}$, $i_R = 3\text{ mA}$, $R_L = 100\text{ }\Omega$ | | t_{rr} | | | 50 | ns |

Typical Characteristics

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

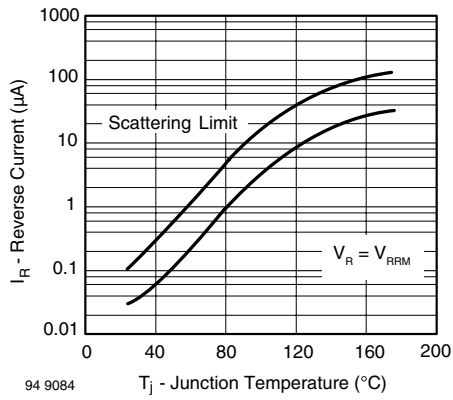


Figure 1. Reverse Current vs. Junction Temperature

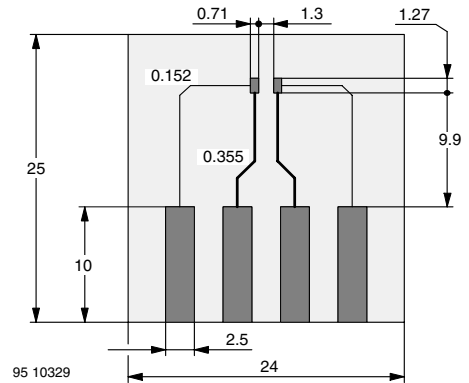


Figure 4. Board for R_{thJA} definition (in mm)

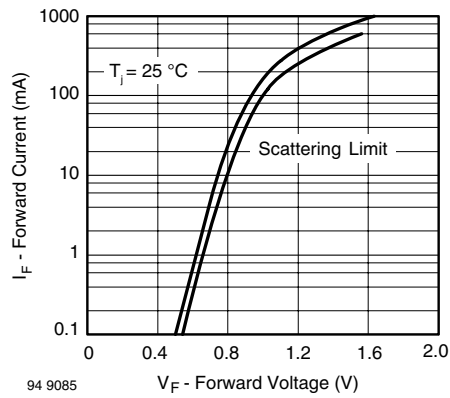


Figure 2. Forward Current vs. Forward Voltage

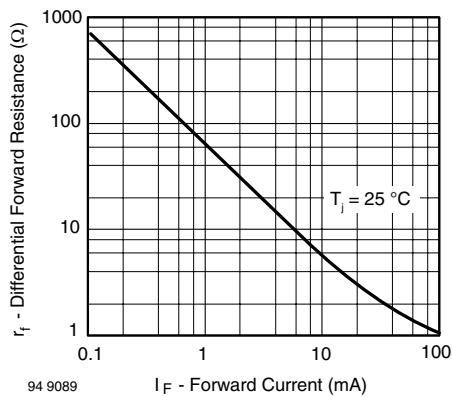
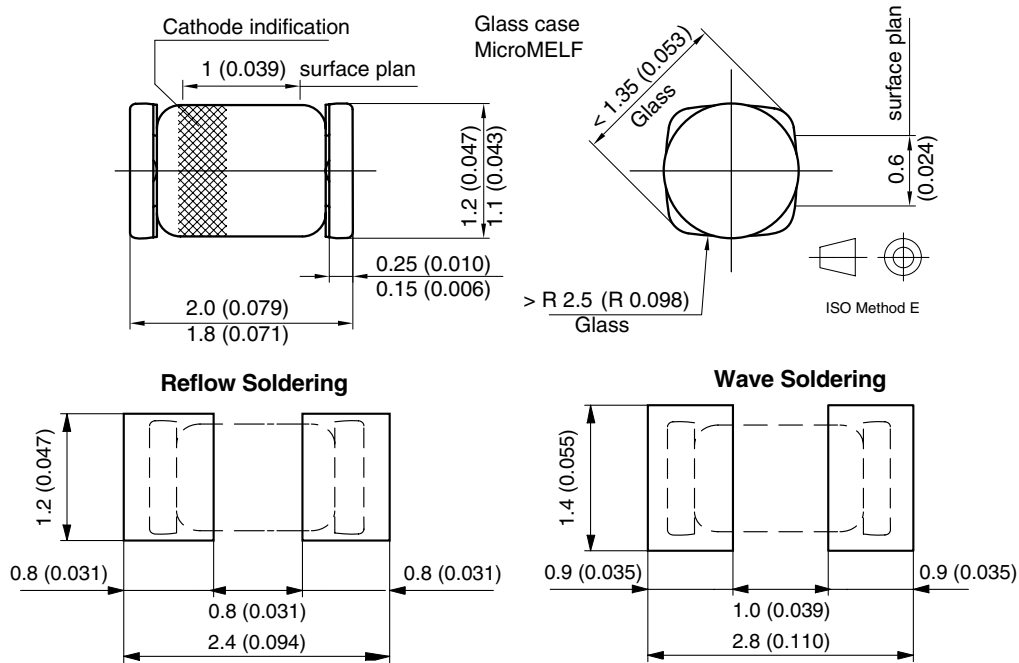


Figure 3. Differential Forward Resistance vs. Forward Current

Package Dimensions in mm (Inches)



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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
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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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