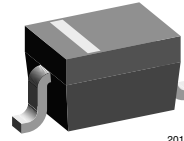


Band Switching Diodes

Description

Silicon Epitaxial Planar Diode Switches

For electric bandswitching in radio and TV tuners in the frequency range of (50 to 1000) MHz. The dynamic forward resistance is constant and very small over a wide range of frequency and forward current. The reverse capacitance is also small and largely independent of the reverse voltage.



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Features

- These diodes are also available in SOD123 case with the type designations BA782-V and BA783-V.
- Lead (Pb)-free component
- Component in acc. to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD323 Plastic case

Weight: approx. 4.3 mg

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 | Type Marking | Remarks |
|----------|--------------------------------|--------------|---------------|
| BA782S-V | BA782S-V-GS18 or BA782S-V-GS08 | R2 | Tape and Reel |
| BA783S-V | BA783S-V-GS18 or BA783S-V-GS08 | R3 | 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 | 35 | V |
| Forward continuous current | $T_{amb} = 25\text{ }^{\circ}\text{C}$ | I_F | 100 | mA |

Thermal Characteristics

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

| Parameter | Test condition | Symbol | Value | Unit |
|---------------------------|----------------|-----------|---------------|--------------------|
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | - 55 to + 125 | $^{\circ}\text{C}$ |

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 |
| Leakage current | $V_R = 20\text{ V}$ | | I_R | | | 50 | nA |
| Dynamic forward resistance | $f = (50\text{ to }1000)\text{ MHz}$, $I_F = 3\text{ mA}$ | BA782S-V | r_f | | | 0.7 | Ω |
| | | BA783S-V | r_f | | | 1.2 | Ω |
| | $f = (50\text{ to }1000)\text{ MHz}$, $I_F = 10\text{ mA}$ | BA782S-V | r_f | | | 0.5 | Ω |
| | | BA783S-V | r_f | | | 0.9 | Ω |
| Diode capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | | C_D | | | 1.5 | pF |
| | $V_R = 3\text{ V}$, $f = 1\text{ MHz}$ | BA782S-V | C_D | | | 1.25 | pF |
| | | BA783S-V | C_D | | | 1.2 | pF |
| Series inductance across case | | | L_S | | 2.5 | | nH |

Typical Characteristics

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

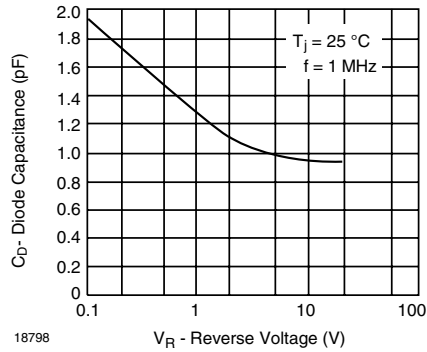


Figure 1. Diode Capacitance

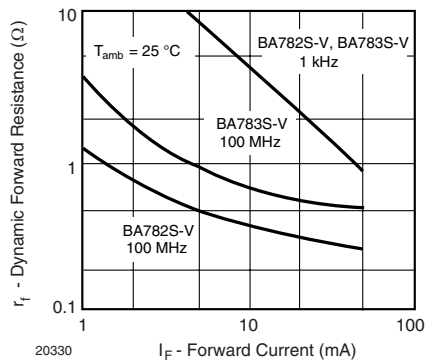
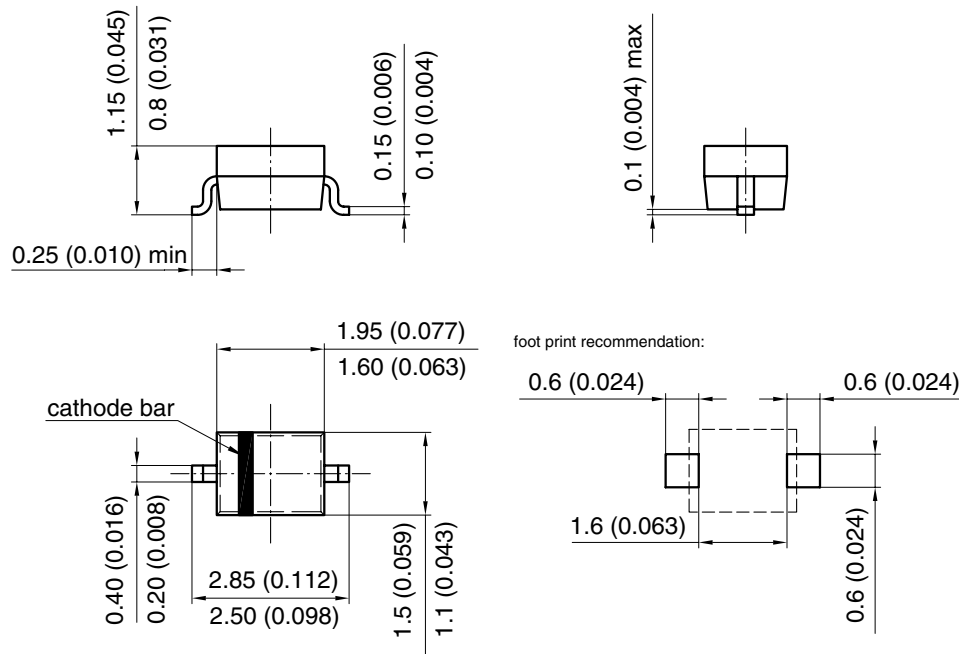


Figure 2. Dynamic Forward Resistance vs. Forward Current

Package Dimensions in mm (Inches): SOD323



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 17443

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.

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