

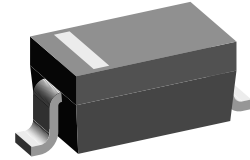
## Band Switching Diodes

### 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.

These diodes are also available in SOD-323 case with the type designations BA782S and BA783S.



17431

### Features

- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### Mechanical Data

**Case:** SOD-123 Plastic case

**Weight:** approx. 9.3 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	Marking	Remarks
BA782	BA782-GS18 or BA782-GS08	-	Tape and Reel
BA783	BA783-GS18 or BA783-GS08	-	Tape and Reel

### Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage		V <sub>R</sub>	35	V
Forward continuous current	T <sub>amb</sub> = 25 °C	I <sub>F</sub>	35	V

### Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Junction temperature		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>S</sub>	- 55 to + 125	°C

### Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1	V
Leakage current	$V_R = 20\text{ V}$		$I_R$			50	nA
Dynamic forward resistance	$f = (50\text{ to }1000)\text{ MHz}, I_F = 3\text{ mA}$	BA782	$r_f$			0.7	$\Omega$
		BA783	$r_f$			1.2	$\Omega$
	$f = (50\text{ to }1000)\text{ MHz}, I_F = 10\text{ mA}$	BA782	$r_f$			0.5	$\Omega$
		BA783	$r_f$			0.9	$\Omega$
Capacitance	$V_R = 1\text{ V}, f = 1\text{ MHz}$					1.5	pF
	$V_R = 3\text{ V}, f = 1\text{ MHz}$	BA782				1.25	pf
		BA783				1.2	pf
Series inductance across case			$L_S$		2.5		nH

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

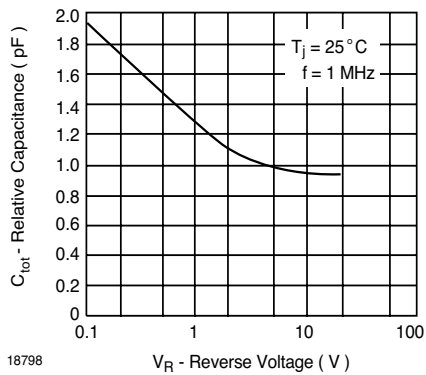


Figure 1. Capacitance vs. Reverse Voltage

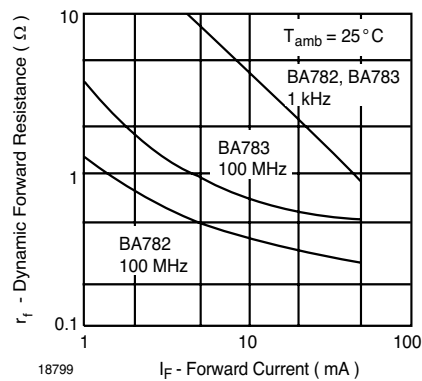
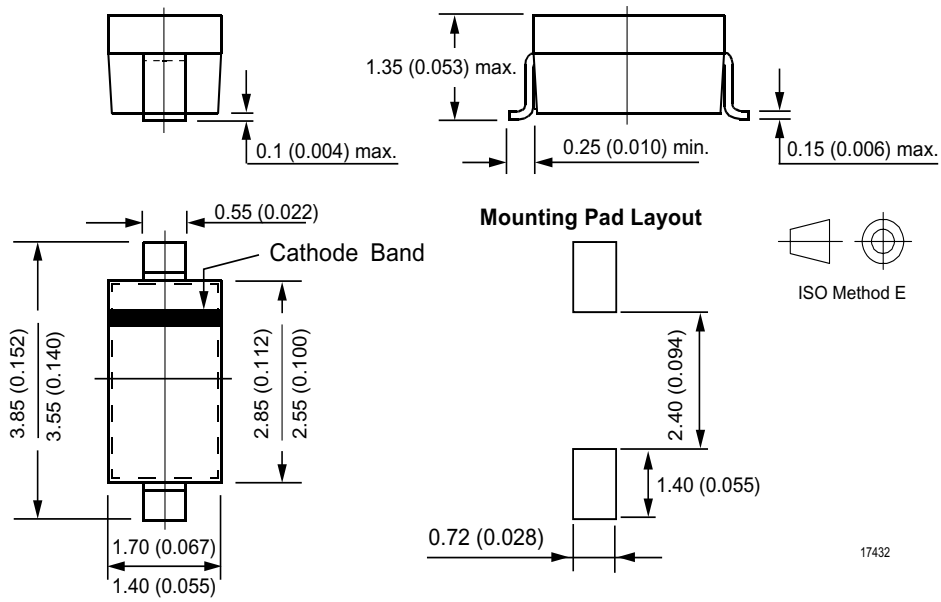


Figure 2. Dynamic Forward Resistance vs. Forward Current

## Package Dimensions in mm (Inches)



### 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.

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