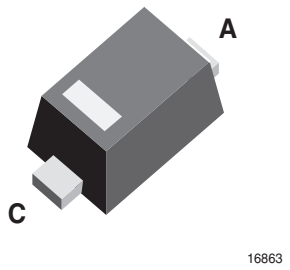
Band Switching Diodes

Mechanical Data

Case: Plastic case (SOD 523)
Weight: 1.5 mg
Cathode Band Color: Laser marking
Packaging Codes/Options:
GS08 / 3 k per 7" reel (8 mm tape), 3 k/Box



Description

The main purpose of the BA892V-02V is the Band Switching. Biased with a DC forward current for signals at frequencies over 100 MHz up to 3 GHz this diode behaves like a current controlled resistor and not as a diode any more.

Depending on the forward current the forward resistance rf can be switched far below 1 Ω, so that the Switch is closed. To open the Switch, the BA892V-02V has to be driven in the reverse mode where the BA892V-02V behaves like a small capacitor with high isolation. So typical applications for this Band Switching Diode are mobile and TV-applications.

Features

- Low forward resistance
- Small, space saving SOD523 package with low series inductance
- Small capacitance

Applications

• Band switching up to 3 GHz
• Low loss band-switching in TV/VTR tuners

Parts Table

Part	Ordering code	Marking	Remarks	Package
BA892V-02V	BA892V-02V-GS08	A	Tape and Reel	SOD523

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Value	Unit
Reverse voltage			V_R	35	V
Forward current			I_F	100	mA
Junction temperature			T_j	150	°C
Storage temperature range			T_{stg}	-55 to +150	°C

Maximum Thermal Resistance

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction soldering point		R_{thJS}	100	K/W

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Reverse voltage	I_R = 10 µA		V_R	35			V

Parameter	Test condition	Sub type	Symbol	Min	Typ.	Max	Unit
Reverse current	V_R = 20 V		I_R			20	nA
Forward voltage	I_F = 100 mA		V_F			1.1	V
Diode capacitance	f = 1 MHz, V_R = 0		C_D		1.1		pF
	f = 1 MHz, V_R = 1 V		C_D		0.9	1.2	pF
	f = 1 MHz, V_R = 3 V		C_D		0.82	1.1	pF
Forward resistance	f = 100 MHz, I_F = 1 mA		r_f		0.7		Ω
	f = 100 MHz, I_F = 3 mA		r_f		0.5	0.7	Ω
	f = 100 MHz, I_F = 10 mA		r_f		0.38	0.5	Ω
Charge carrier life time	I_F = 10 mA, I_R = 6 mA, i_R = 3 mA		t_{rr}		100		ns

Characteristics (T_{amb} = 25°C unless otherwise specified)

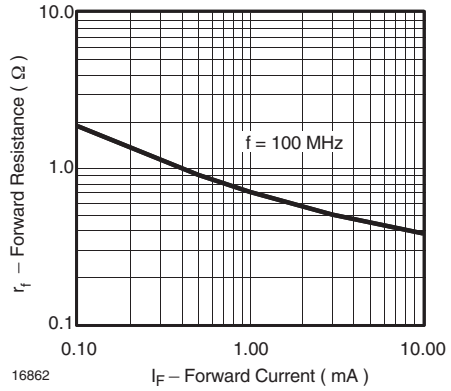


Figure 1. Forward Resistance vs. Forward Current

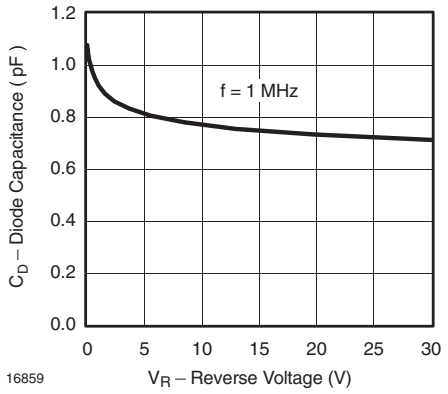
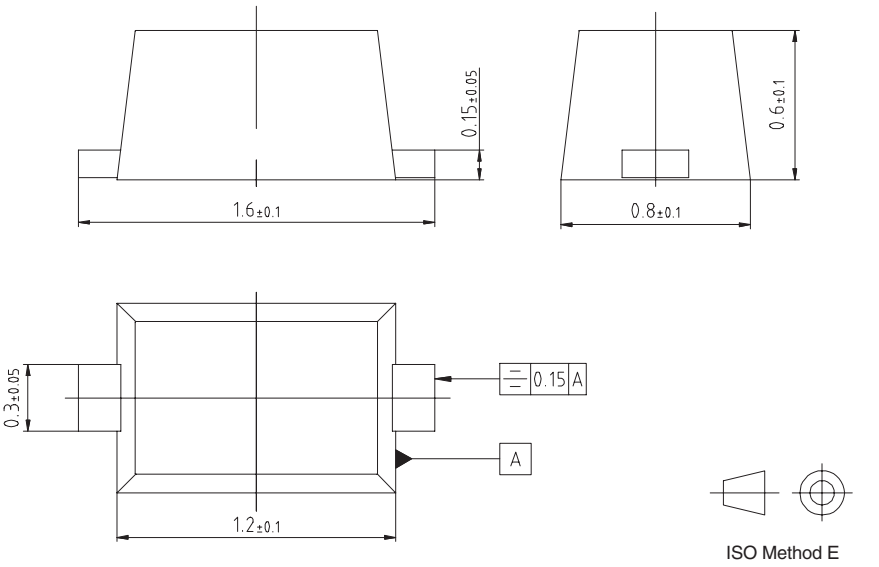


Figure 2. Diode Capacitance vs. Reverse Voltage

Package Dimensions in mm or Inches (mm)



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 operatingsystems 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.

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