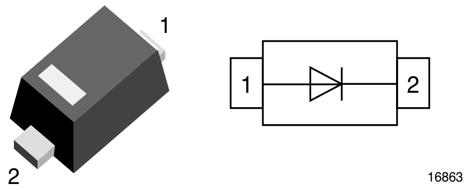
RF PIN Diode - Single in SOD-523

Description

With the very low forward resistance combined with a low reverse capacitance the BAR65V-02V is ideal for RF-signal switching. Depending on the forward current (If) the forward resistance (rf) can be reduced to only a few hundred mΩ. In the reverse mode the isolation capacitance is less than 1 pF. Due to its low loss behaviour this PIN diode is most suitable for switching of transmitter and receiver in wireless and mobile systems as well as for band switching in TV-tuner systems.



Features

- Space saving SOD-523 package with low series inductance
- Very low forward resistance
- Small reverse capacitance
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Mechanical Data

Case: SOD-523 Plastic case
Weight: approx. 1.6 mg
Cathode Band Color: Laser marking
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

Applications

For frequency up to 3 GHz
RF-signal switching
Mobile, wireless and TV-Applications

Parts Table

Part	Ordering code	Marking	Remarks
BAR65V-02V	BAR65V-02V-GS18 or BAR65V-02V-GS08	E	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Reverse voltage		V_R	30	V
Forward current		I_F	100	mA
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

Thermal Characteristics

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	Symbol	Min	Typ.	Max	Unit
Reverse voltage	I_R = 10 µA	V_R	30			V
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		0.65		pF
	f = 1 MHz, V_R = 1 V	C_D		0.55	0.9	pF
	f = 1 MHz, V_R = 3 V	C_D		0.50	0.8	pF
Forward resistance	f = 100 MHz, I_F = 1 mA	r_f		1		Ω
	f = 100 MHz, I_F = 5 mA	r_f		0.6	0.95	Ω
	f = 100 MHz, I_F = 10 mA	r_f		0.5	0.9	Ω
Charge carrier life time	I_F = 10 mA, I_R = 6 mA, i_R = 3 mA	t_{rr}		175		ns

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

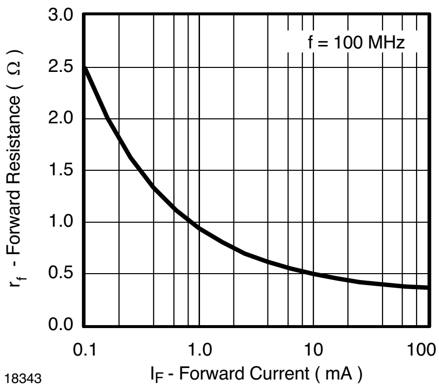


Figure 1. Forward Resistance vs. Forward Current

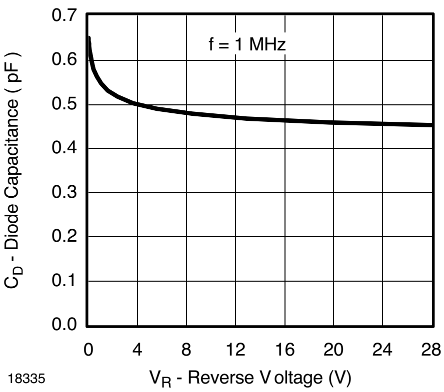


Figure 2. Diode Capacitance vs. Reverse Voltage

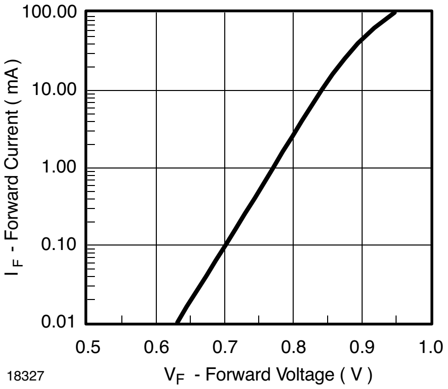


Figure 3. Forward Current vs. Forward Voltage

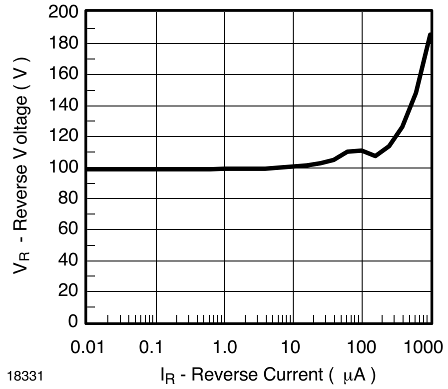


Figure 4. Reverse Voltage vs. Reverse Current

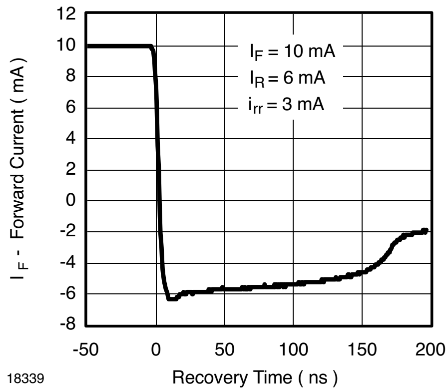
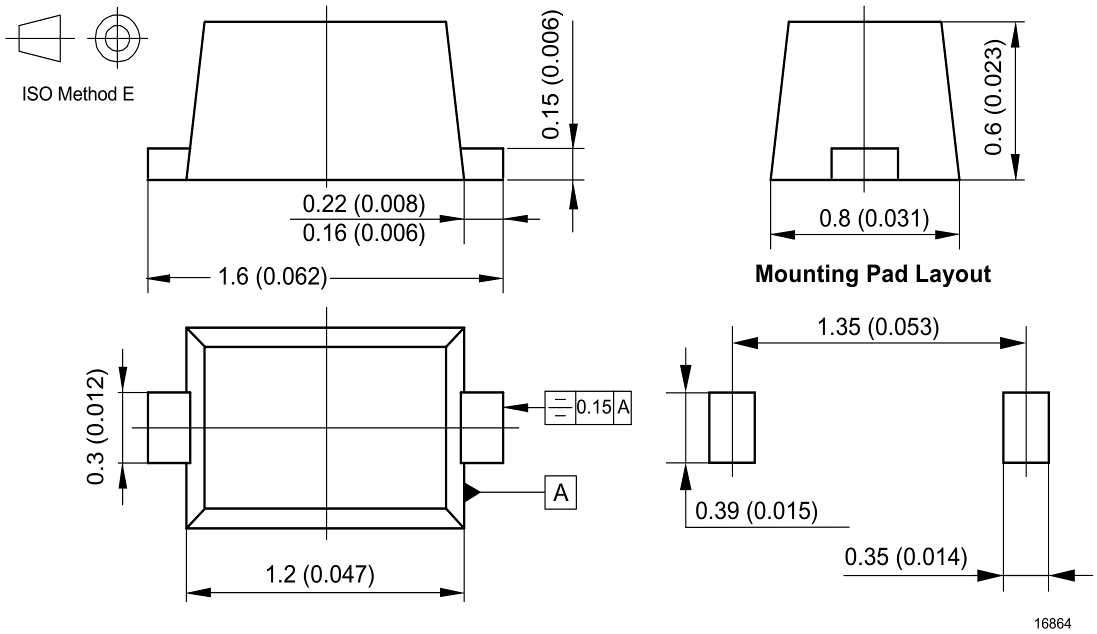


Figure 5. Typical Charge Recovery Curve

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.

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and may do so without further notice.
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