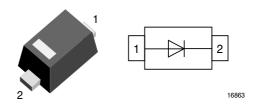


# **RF PIN Diode - Single in SOD-523**

### **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  $m\Omega.$  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	Е	Tape and Reel	

#### **Absolute Maximum Ratings**

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

Parameter	Test condition	Symbol	Value	Unit	
Reverse voltage		V <sub>R</sub>	30	V	
Forward current		I <sub>F</sub>	100	mA	
Junction temperature		Tj	150	°C	
Storage temperature range		T <sub>stg</sub>	- 55 to + 150	°C	

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#### **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	Тур.	Max	Unit
Reverse voltage	I <sub>R</sub> = 10 μA	V <sub>R</sub>	30			V
Reverse current	V <sub>R</sub> = 20 V	I <sub>R</sub>			20	nA
Forward voltage	I <sub>F</sub> = 100 mA	V <sub>F</sub>			1.1	V
Diode capacitance	f = 1 MHz, V <sub>R</sub> = 0	C <sub>D</sub>		0.65		pF
	f = 1 MHz, V <sub>R</sub> = 1 V	C <sub>D</sub>		0.55	0.9	pF
	f = 1 MHz, V <sub>R</sub> = 3 V	C <sub>D</sub>		0.50	0.8	pF
Forward resistance	f = 100 MHz, I <sub>F</sub> = 1 mA	r <sub>f</sub>		1		Ω
	f = 100 MHz, I <sub>F</sub> = 5 mA	r <sub>f</sub>		0.6	0.95	Ω
	f = 100 MHz, I <sub>F</sub> = 10 mA	r <sub>f</sub>		0.5	0.9	Ω
Charge carrier life time	$I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, I_R = 3 \text{ mA}$	t <sub>rr</sub>		175		ns

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

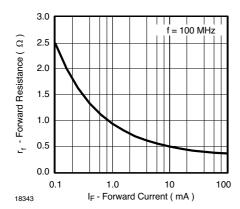


Figure 1. Forward Resistance vs. Forward Current

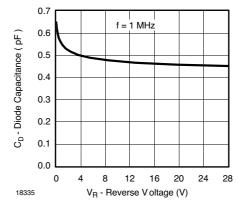


Figure 2. Diode Capacitance vs. Reverse Voltage





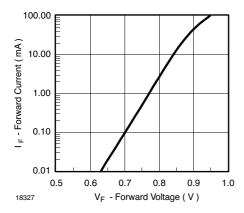


Figure 3. Forward Current vs. Forward Voltage

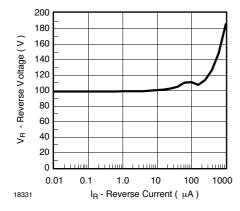


Figure 4. Reverse Voltage vs. Reverse Current

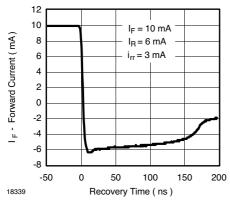
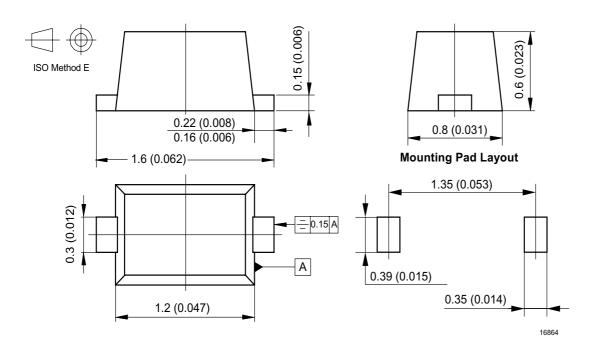


Figure 5. Typical Charge Recovery Curve



## **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.

> We reserve the right to make changes to improve technical design and may do so without further notice.

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