

Vishay Semiconductors

RF PIN Diodes - Dual, Common Cathode in SOT-323

Description

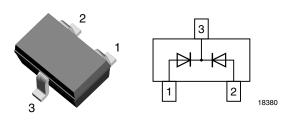
Characterized by low reverse Capacitance the PIN Diodes BAR64V-05W-V was designed for RF signal switching and tuning. As a function of the forward bias current the forward resistance (RF) can be adjusted over a wide range. A long carrier life time offers low signal distortion for signals over 10 MHz up to 3 GHz. Typical applications for these PIN Diodes are switches and attenuators in wireless, mobile and TV-systems.



- High voltage current controlled RF resistor
- Small diode capacitance
- Low series inductance
- Low forward resistance
- Improved performance due to two comiseparate dice
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Applications

- For frequencies up to 3 GHz
- RF-signal tuning
- · Signal attenuator and switches
- Mobile, wireless and TV-Applications





Mechanical Data

Case: SOT-323 Weight: approx. 5.7 mg Packaging Codes/Options:

GS18/10K per 13" reel (8 mm tape), 10K/box GS08/3K per 7" reel (8 mm tape), 15K/box

Parts Table

Part	Ordering code	Marking	Remarks	
BAR64V-05W-V	BAR64V-05W-V-GS18 or BAR64V-05W-V-GS08	DW5	Tape and reel	

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit	
Reverse voltage		V _R	100	V	
Forward current		١ _F	100	mA	
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	- 55 to + 150	°C	

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Electrical Characteristics

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

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Reverse voltage	I _R = 10 μA	V _R	100			V
Reverse current	V _R = 50 V	I _R			50	nA
Forward voltage	I _F = 50 mA	V _F			1.1	V
Diode capacitance	f = 1 MHz, V _R = 0	CD		0.5		pF
	f = 1 MHz, V _R = 1 V	CD		0.37	0.5	pF
	f = 1 MHz, V _R = 20 V	CD		0.23	0.35	pF
Forward resistance	f = 100 MHz, I _F = 1 mA	r _f		10	20	Ω
	f = 100 MHz, I _F = 10 mA	r _f		2.0	3.8	Ω
	f = 100 MHz, I _F = 100 mA	r _f		0.8	1.35	Ω
Charge carrier life time	$I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, i_R = 3 \text{ mA}$	t _{rr}		1.8		μs
Series inductance		LS		1		nH

Typical Characteristics

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

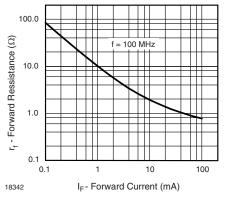


Figure 1. Forward Resistance vs. Forward Current

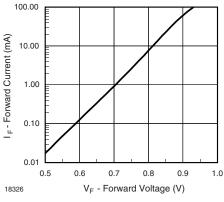


Figure 3. Forward Current vs. Forward Voltage

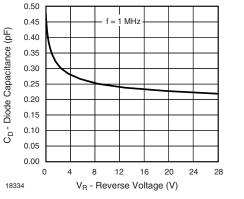


Figure 2. Diode Capacitance vs. Reverse Voltage

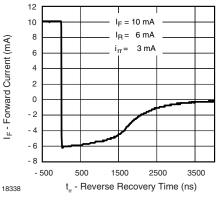


Figure 4. Typical Charge Recovery Curve

www.vishay.com 2 For technical questions within your region, please contact one of the following: Document Number 81836 DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com Rev. 1.3, 29-Oct-10



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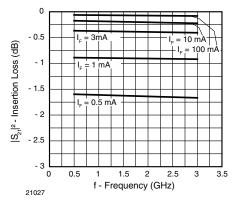


Figure 5. Insertion Loss of One Diode Inserted in Series with 50 Ω Strip Line

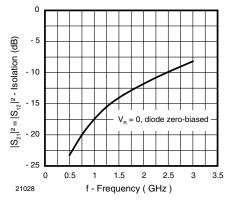


Figure 6. Isolation of One Diode Inserted in Series with 50 Ω Strip Line

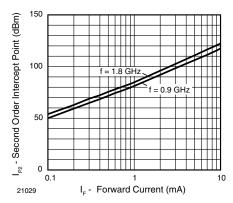


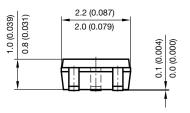
Figure 7. Second Order Intercept Point for One Diode Inserted in 50 Ω Strip Line

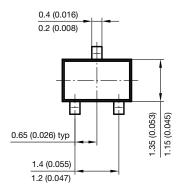
BAR64V-05W-V

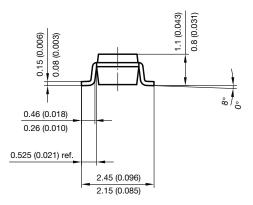


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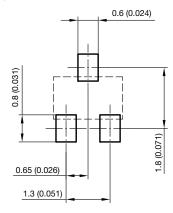
Package Dimensions in millimeters (inches): SOT-323







foot print recommendation:



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