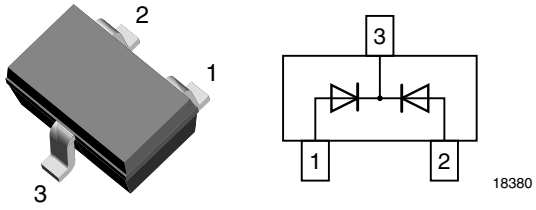
RF PIN Diodes - Dual, Common Cathode in SOT-323

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.



Features

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

Pb-free

e3

RoHS COMPLIANT

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

Applications

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

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		I_F	100	mA
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

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	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	C_D		0.5		pF
	f = 1 MHz, V_R = 1 V	C_D		0.37	0.5	pF
	f = 1 MHz, V_R = 20 V	C_D		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 mA, I_R = 6 mA, i_R = 3 mA	t_{rr}		1.8		µs
Series inductance		L_S		1		nH

Typical Characteristics

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

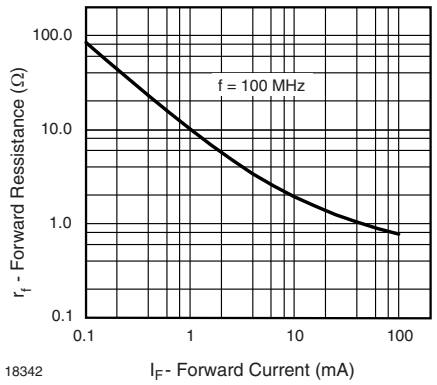


Figure 1. Forward Resistance vs. Forward Current

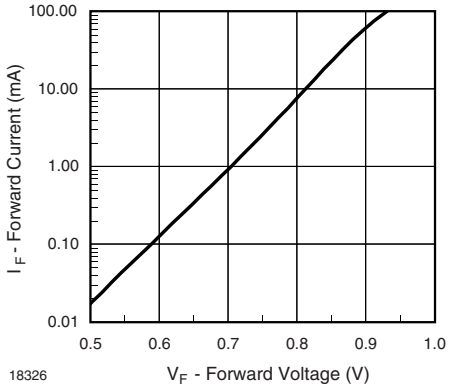


Figure 3. Forward Current vs. Forward Voltage

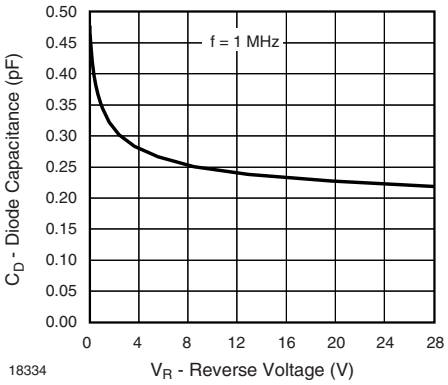


Figure 2. Diode Capacitance vs. Reverse Voltage

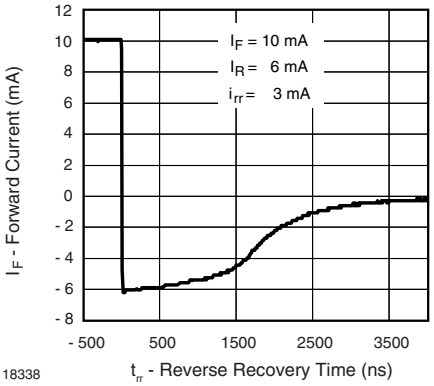


Figure 4. Typical Charge Recovery Curve

For technical questions within your region, please contact one of the following:
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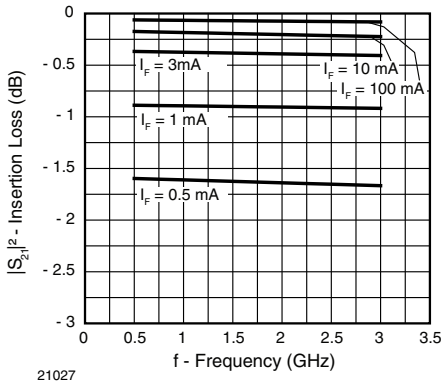


Figure 5. Insertion Loss of One Diode Inserted in Series with 50 Ω Strip Line

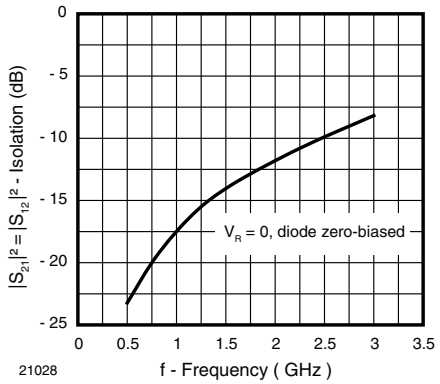


Figure 6. Isolation of One Diode Inserted in Series with 50 Ω Strip Line

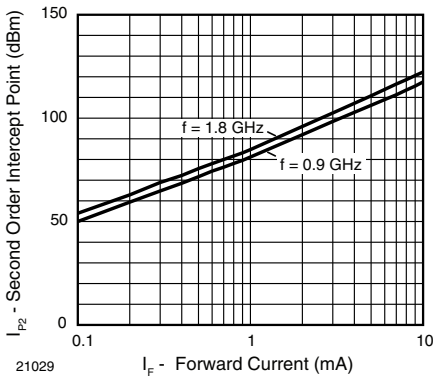
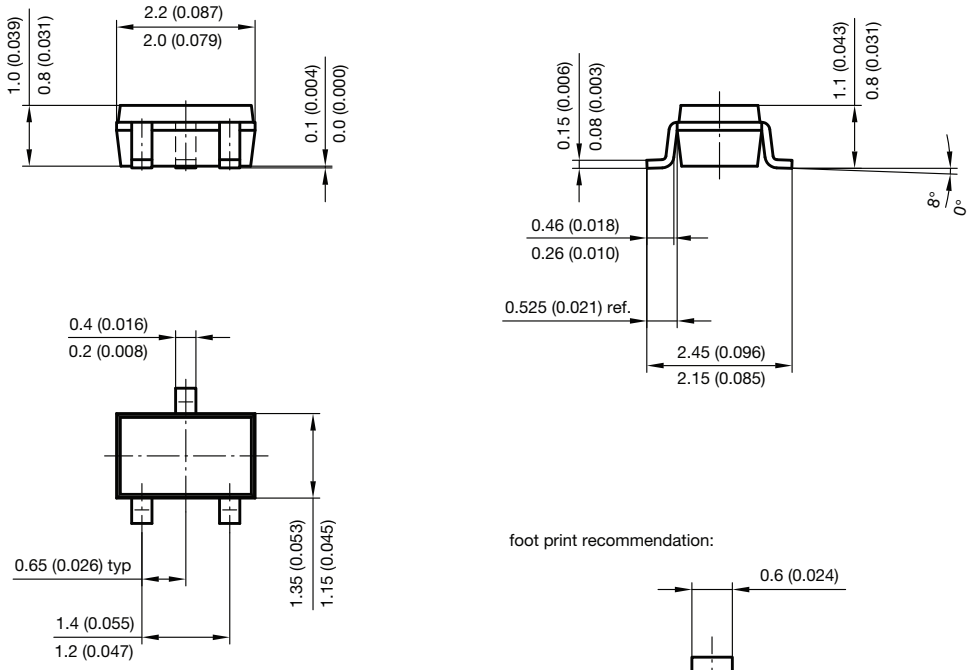
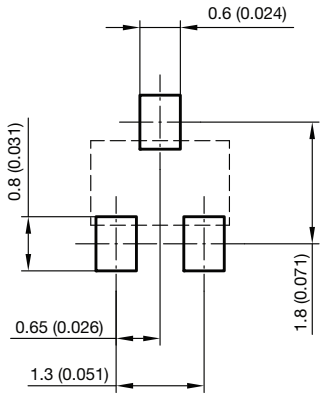


Figure 7. Second Order Intercept Point for One Diode Inserted in 50 Ω Strip Line

Package Dimensions in millimeters (inches): SOT-323



foot print recommendation:



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