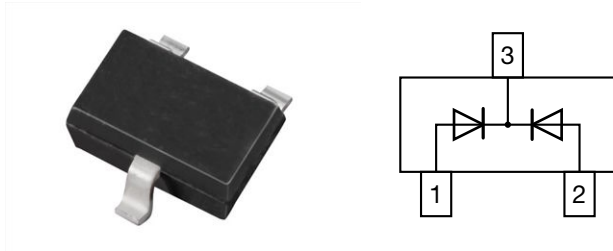


RF PIN Diodes - Dual, Common Cathode in SOT-323



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
- Material categorization:

For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

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

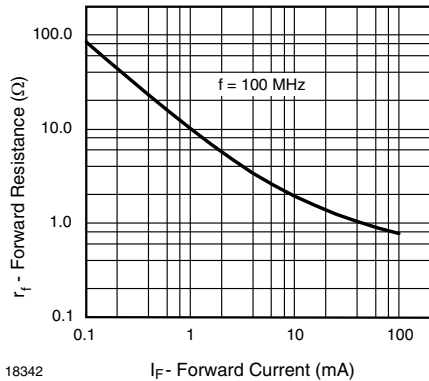
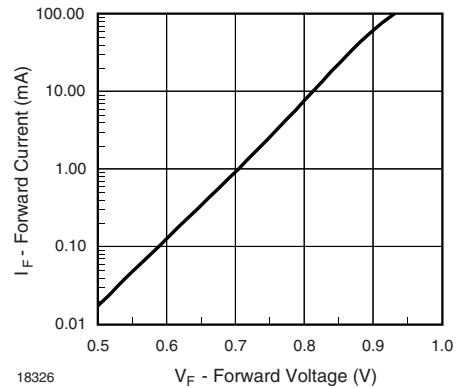
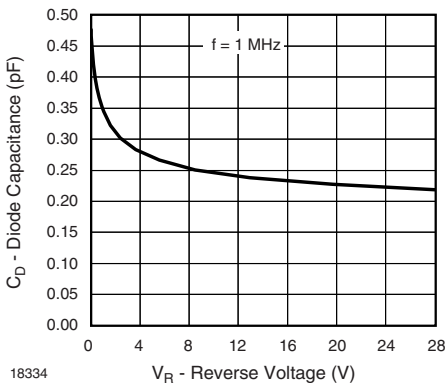
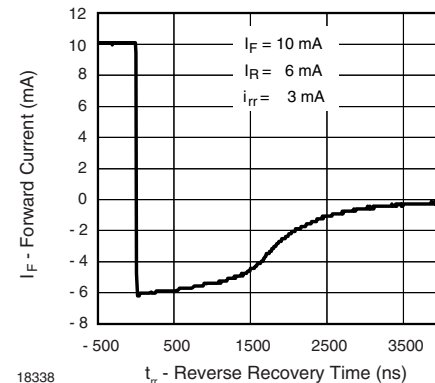
GS08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE				
PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAR64V-05W-V	BAR64V-05W-V-GS18 or BAR64V-05W-V-GS08	DW5	Dual common cathode	Tape and reel

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PART	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	100	V
Forward continuous current		I_F	100	mA

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$		V_F			1.1	V
Reverse voltage	$I_F = 10\text{ }\mu\text{A}$		V_R	100			V
Reverse current	$V_R = 50\text{ V}$		I_R			0.05	μA
Diode capacitance	$f = 1\text{ MHz}, V_R = 0\text{ V}$		C_D		0.5		pF
	$f = 1\text{ MHz}, V_R = 1\text{ V}$		C_D		0.37	0.5	pF
	$f = 1\text{ MHz}, V_R = 20\text{ V}$		C_D		0.23	0.35	pF
Differential forward resistance	$f = 100\text{ MHz}, I_F = 1\text{ mA}$		r_f		10	20	Ω
	$f = 100\text{ MHz}, I_F = 10\text{ mA}$		r_f		2	3.8	Ω
	$f = 100\text{ MHz}, I_F = 100\text{ mA}$		r_f		0.8	1.35	Ω
Charge carrier lifetime	$I_F = 10\text{ mA}, I_R = 6\text{ mA}, i_{rr} = 3\text{ mA}$		t_{rr}		1.8		μs
Series inductance			L_S		1		nH

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

 18342
 Fig. 1 - Forward Resistance vs. Forward Current

 18326
 Fig. 3 - Forward Current vs. Forward Voltage

 18334
 Fig. 2 - Diode Capacitance vs. Reverse Voltage

 18338
 Fig. 4 - Typical Charge Recovery Curve

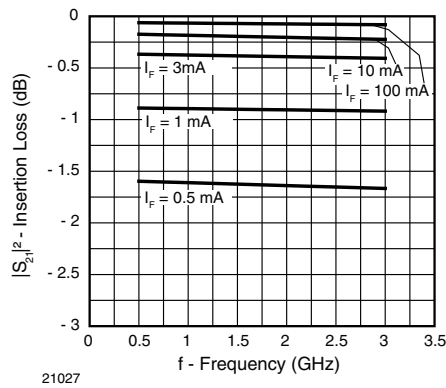


Fig. 5 - Insertion Loss of One Diode Inserted in Series with 50 Ω Strip Line

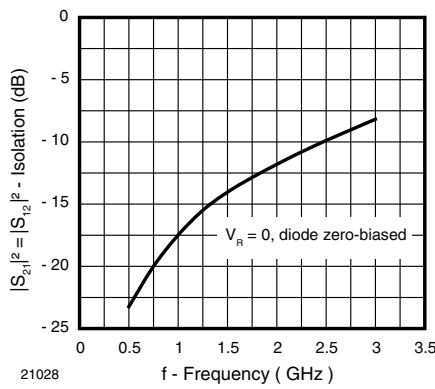


Fig. 6 - Isolation of One Diode Inserted in Series with 50 Ω Strip Line

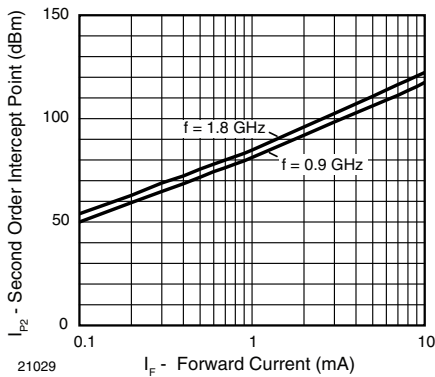
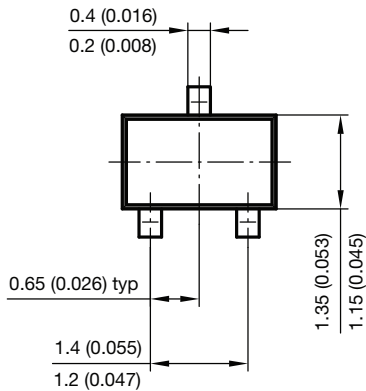
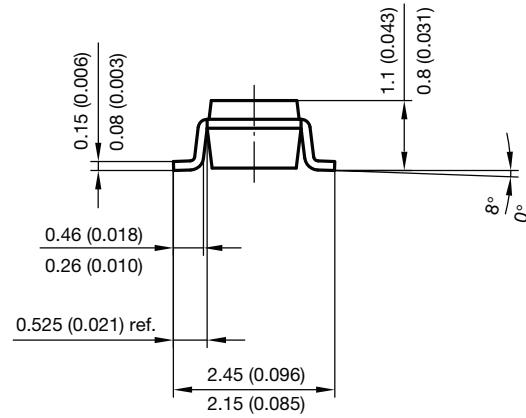
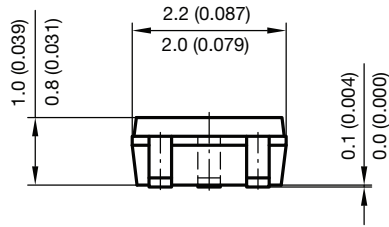


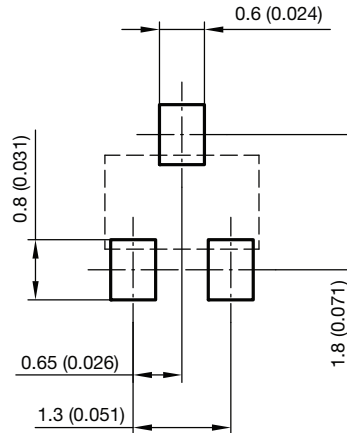
Fig. 7 - Second Order Intercept Point for One Diode Inserted in 50 Ω Strip Line



PACKAGE DIMENSIONS in millimeters (inches): **SOT-323**



foot print recommendation:



Document no.: 6.541-5040.02-4
Rev. 1 - Date: 06. April 2010
21113



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.