

# BAV19WS-G, BAV20WS-G, BAV21WS-G

Vishay Semiconductors

# **Small Signal Switching Diodes, High Voltage**

# DESIGN SUPPORT TOOLS click logo to get started



### **MECHANICAL DATA**

Case: SOD-323

Weight: approx. 4 mg

### Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

# FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- AEC-Q101 qualified
- Base P/N-G3 green, commercial grade
- Base P/N-HG3 green, AEC-Q101 qualified (part number available on request)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>





(5-2008)

PARTS TABLE TYPE TYPE CIRCUIT PART **ORDERING CODE** REMARKS CONFIGURATION DIFFERENTIATION MARKING BAV19WS-G V<sub>R</sub> = 100 V BAV19WS-G3-08 or BAV19WS-G3-18 AS Single Tape and reel BAV20WS-G V<sub>R</sub> = 150 V BAV20WS-G3-08 or BAV20WS-G3-18 AT Single Tape and reel BAV21WS-G V<sub>R</sub> = 200 V BAV21WS-G3-08 or BAV21WS-G3-18 AU Single Tape and reel

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITION	SYMBOL	SYMBOL	VALUE	UNIT			
Continuous reverse voltage		BAV19WS-G	V <sub>R</sub>	100	V			
		BAV20WS-G	V <sub>R</sub>	150	V			
		BAV21WS-G	V <sub>R</sub>	200	V			
Repetitive peak reverse voltage		BAV19WS-G	V <sub>RRM</sub>	120	V			
		BAV20WS-G	V <sub>RRM</sub>	200	V			
		BAV21WS-G	V <sub>RRM</sub>	250	V			
Forward continuous current <sup>(1)</sup>			IF	250	mA			
Rectified current (average) half wave rectification with resistive load <sup>(1)</sup>			I <sub>F(AV)</sub>	200	mA			
Repetitive peak forward current <sup>(1)</sup>	$f \ge 50 \text{ Hz}, \theta = 180^{\circ}$		I <sub>FRM</sub>	625	mA			
Surge forward current	t < 1 s, T <sub>J</sub> = 25 °C		I <sub>FSM</sub>	1	А			
Power dissipation			P <sub>tot</sub>	200	mW			

### Note

<sup>(1)</sup> Valid provided that leads are kept at ambient temperature

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25 \text{ °C}$ , unless otherwise specified)								
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT				
Thermal resistance junction to ambient air		R <sub>thJA</sub>	625	K/W				
Thermal resistance junction to lead		R <sub>thJL</sub>	450	K/W				
Junction temperature		Tj	150	°C				
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C				
Operating temperature range		T <sub>op</sub>	-55 to +150	°C				

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# BAV19WS-G, BAV20WS-G, BAV21WS-G

www.vishay.com

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb}$ = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Forward voltage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V	
	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1.25	V	
Reverse leakage current	V <sub>R</sub> = 100 V	BAV19WS-G	I <sub>R</sub>			100	nA	
	$V_R = 100 V, T_j = 100 °C$	BAV19WS-G	I <sub>R</sub>			15	μA	
	V <sub>R</sub> = 150 V	BAV20WS-G	I <sub>R</sub>			100	nA	
	$V_{R} = 150 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$	BAV20WS-G	I <sub>R</sub>			15	μA	
	V <sub>R</sub> = 200 V	BAV21WS-G	I <sub>R</sub>			100	nA	
	$V_{R} = 200 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$	BAV21WS-G	I <sub>R</sub>			15	μA	
Dynamic Forward resistance	I <sub>F</sub> = 10 mA		r <sub>f</sub>		5		Ω	
Diode capacitance	$V_R = 0 V$ , f = 1 MHz		CD			1.5	pF	
Reverse recovery time	$I_{F}$ = 30 mA, $I_{R}$ = 30 mA, $i_{R}$ = 3 mA, $R_{L}$ = 100 $\Omega$		t <sub>rr</sub>			50	ns	

### TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

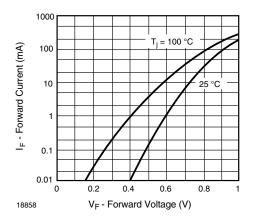


Fig. 1 - Forward Current vs. Forward Voltage

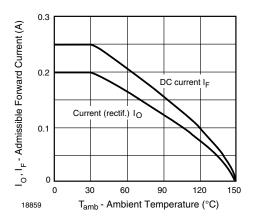


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

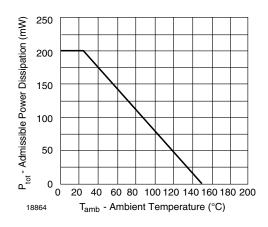


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

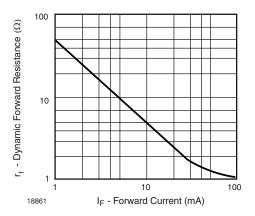


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

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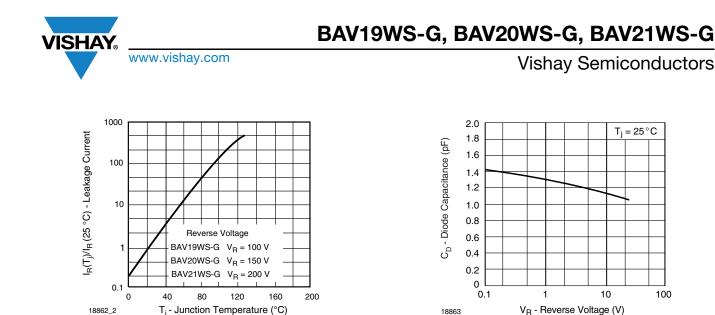


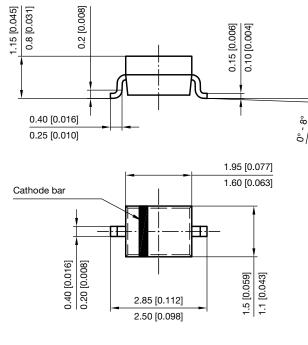
Fig. 5 - Leakage Current vs. Junction Temperature



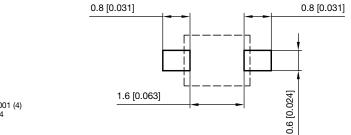
0.1 [0.004] max.

100

# PACKAGE DIMENSIONS in millimeters (inches): SOD-323



Footprint recommendation:



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