

# 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 gualified (part number available on request)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





HALOGEN FREE

**GREEN** (5-2008)

PARTS TABLE							
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE CIRCUIT MARKING CONFIGURATION		REMARKS		
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	
		BAV19WS-G	V <sub>R</sub>	100	V	
Continuous reverse voltage		BAV20WS-G	$V_R$	150	V	
		BAV21WS-G	$V_{R}$	200	V	
		BAV19WS-G	$V_{RRM}$	120	V	
Repetitive peak reverse voltage		BAV20WS-G	$V_{RRM}$	200	V	
		BAV21WS-G	$V_{RRM}$	250	V	
Forward continuous current (1)			l <sub>F</sub>	250	mA	
Rectified current (average) half wave rectification with resistive load (1)			I <sub>F(AV)</sub>	200	mA	
Repetitive peak forward current (1)	f ≥ 50 Hz, θ = 180°		I <sub>FRM</sub>	625	mA	
Surge forward current	t < 1 s, T <sub>J</sub> = 25 °C		I <sub>FSM</sub>	1	Α	
Power dissipation			P <sub>tot</sub>	200	mW	

#### Note

(1) Valid provided that leads are kept at ambient temperature

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °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		T <sub>j</sub>	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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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward valtage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V
Forward voltage	$I_F = 200 \text{ mA}$		$V_{F}$			1.25	V
	V <sub>R</sub> = 100 V	BAV19WS-G	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 100 V, T <sub>j</sub> = 100 °C	BAV19WS-G	I <sub>R</sub>			15	μA
Povorce leekage current	V <sub>R</sub> = 150 V	BAV20WS-G	I <sub>R</sub>			100	nA
Reverse leakage current	V <sub>R</sub> = 150 V, T <sub>j</sub> = 100 °C	BAV20WS-G	I <sub>R</sub>			15	μA
	V <sub>R</sub> = 200 V	BAV21WS-G	I <sub>R</sub>			100	nA
	$V_R = 200 \text{ V}, T_j = 100 ^{\circ}\text{C}$	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 <sub>R</sub> = 0 V, f = 1 MHz		C <sub>D</sub>			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 (T<sub>amb</sub> = 25 °C, unless otherwise specified)

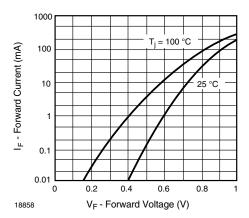


Fig. 1 - Forward Current vs. Forward Voltage

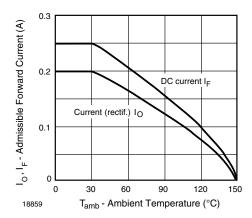


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

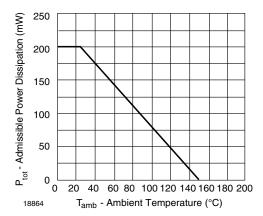


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

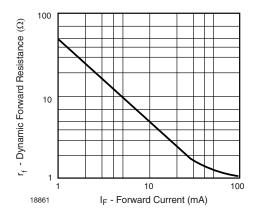


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

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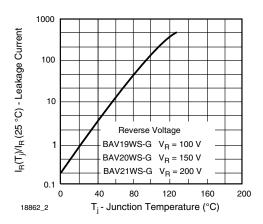


Fig. 5 - Leakage Current vs. Junction Temperature

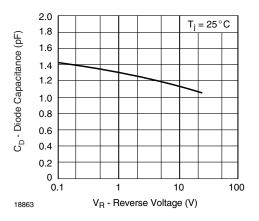
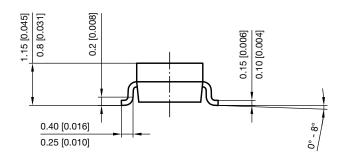
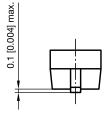
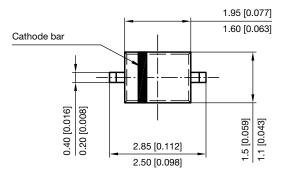


Fig. 6 - Capacitance vs. Reverse Voltage

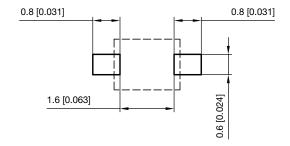
### PACKAGE DIMENSIONS in millimeters (inches): SOD-323







#### Footprint recommendation:



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