

BAV19WS, BAV20WS, BAV21WS

Vishay Semiconductors

Small Signal Switching Diodes, High Voltage



DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 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 available
- Base P/N-E3 RoHS-compliant, commercial grade



- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

PARTS TABLE							
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS		
BAV19WS	V _R = 100 V	BAV19WS-E3-08 or BAV19WS-E3-18 BAV19WS-HE3-08 or BAV19WS-HE3-18	A8	Single	Tape and reel		
BAV20WS	V _R = 150 V	BAV20WS-E3-08 or BAV20WS-E3-18 BAV20WS-HE3-08 or BAV20WS-HE3-18	A9	Single	Tape and reel		
BAV21WS	V _R = 200 V	BAV21WS-E3-08 or BAV21WS-E3-18 BAV21WS-HE3-08 or BAV21WS-HE3-18	AA	Single	Tape and reel		

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		BAV19WS	V_{R}	100	V	
Continuous reverse voltage		BAV20WS	V_{R}	150	V	
		BAV21WS	V_{R}	200	V	
		BAV19WS	V_{RRM}	120	V	
Repetitive peak reverse voltage		BAV20WS	V_{RRM}	200	V	
		BAV21WS	V_{RRM}	250	V	
Forward continuous current (1)			I _F	250	mA	
Rectified current (average) half wave rectification with resistive load (1)			I _{F(AV)}	200	mA	
Repetitive peak forward current (1)	f ≥ 50 Hz, θ = 180°		I _{FRM}	625	mA	
Surge forward current	t < 1 s, T _J = 25 °C		I _{FSM}	1	А	
Power dissipation			P _{tot}	200	mW	

Note

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

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

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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 100 mA		V_{F}			1	V
Forward voltage	$I_F = 200 \text{ mA}$		V_{F}			1.25	V
	V _R = 100 V	BAV19WS	I _R			100	nA
	V _R = 100 V, T _J = 100 °C	BAV19WS	I _R			15	μA
Reverse leakage current	V _R = 150 V	BAV20WS	I _R			100	nA
neverse leakage current	V _R = 150 V, T _J = 100 °C	BAV20WS	I _R			15	μA
	V _R = 200 V	BAV21WS	I _R			100	nA
	V _R = 200 V, T _J = 100 °C	BAV21WS	I _R			15	μA
Dynamic forward resistance	I _F = 10 mA		r _f		5		Ω
Diode capacitance	V _R = 0, f = 1 MHz		C _D			1.5	pF
Reverse recovery time	I_F = 30 mA, I_R = 30 mA, I_R = 100 Ω		t _{rr}			50	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

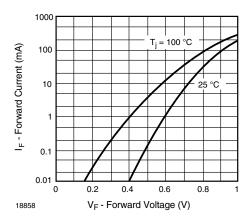


Fig. 1 - Forward Current vs. Forward Voltage

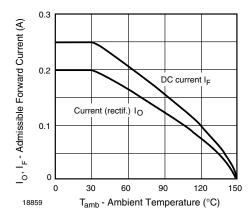


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

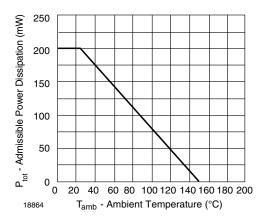


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

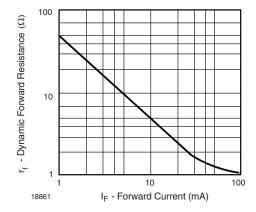
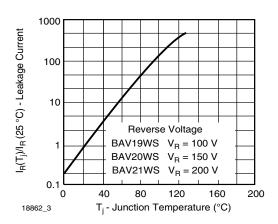


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

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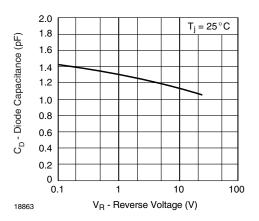
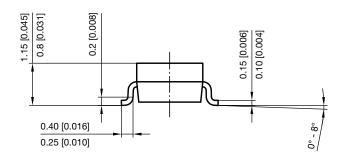
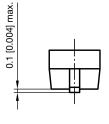
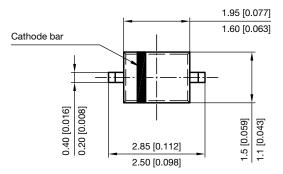


Fig. 6 - Capacitance vs. Reverse Voltage

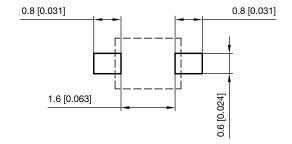
PACKAGE DIMENSIONS in millimeters (inches): SOD-323







Footprint recommendation:



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