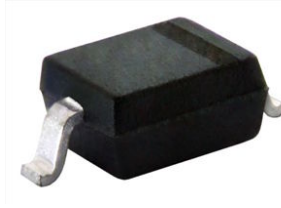




## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- AEC-Q101 qualified
- 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 [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

### 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

PARTS TABLE					
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAV19WS	$V_R = 100\text{ V}$	BAV19WS-E3-08 or BAV19WS-E3-18	A8	Single diode	Tape and reel
		BAV19WS-HE3-08 or BAV19WS-HE3-18			
BAV20WS	$V_R = 150\text{ V}$	BAV20WS-E3-08 or BAV20WS-E3-18	A9	Single diode	Tape and reel
		BAV20WS-HE3-08 or BAV20WS-HE3-18			
BAV21WS	$V_R = 200\text{ V}$	BAV21WS-E3-08 or BAV21WS-E3-18	AA	Single diode	Tape and reel
		BAV21WS-HE3-08 or BAV21WS-HE3-18			

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Continuous reverse voltage		BAV19WS	$V_R$	100	V
		BAV20WS	$V_R$	150	V
		BAV21WS	$V_R$	200	V
Repetitive peak reverse voltage		BAV19WS	$V_{RRM}$	120	V
		BAV20WS	$V_{RRM}$	200	V
		BAV21WS	$V_{RRM}$	250	V
Forward continuous current <sup>(1)</sup>			$I_F$	250	mA
Rectified current (average) half wave rectification with resistive load <sup>(1)</sup>			$I_{F(AV)}$	200	mA
Repetitive peak forward current <sup>(1)</sup>	$f \geq 50\text{ Hz}, \theta = 180\text{ }^\circ\text{C}$		$I_{FRM}$	625	mA
Surge forward current	$t < 1\text{ s}, T_J = 25\text{ }^\circ\text{C}$		$I_{FSM}$	1	A
Power dissipation <sup>(1)</sup>			$P_{tot}$	200	mW

### Note

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

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	650	K/W
Junction temperature <sup>(1)</sup>		$T_J$	150	$^\circ\text{C}$
Storage temperature range <sup>(1)</sup>		$T_{stg}$	- 65 to + 150	$^\circ\text{C}$
Operating temperature range		$T_{op}$	- 55 to + 150	$^\circ\text{C}$

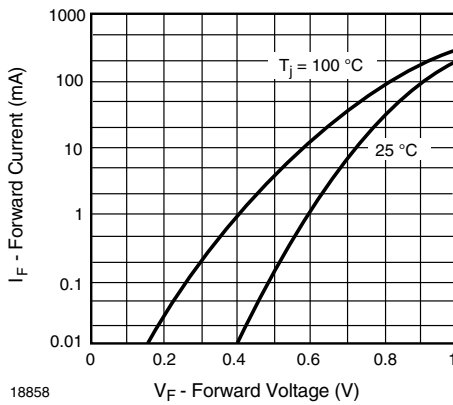
### Note

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



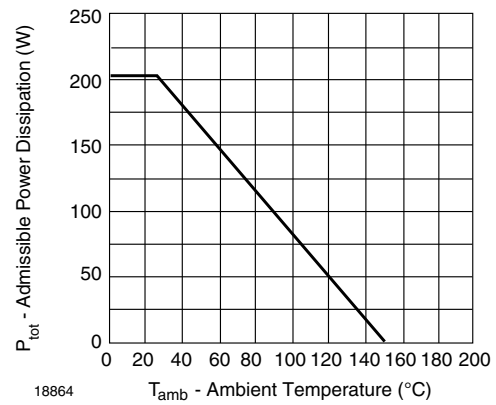
ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V
	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1.25	V
Reverse leakage current	V <sub>R</sub> = 100 V	BAV19WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 100 V, T <sub>J</sub> = 100 °C	BAV19WS	I <sub>R</sub>			15	μA
	V <sub>R</sub> = 150 V	BAV20WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 150 V, T <sub>J</sub> = 100 °C	BAV20WS	I <sub>R</sub>			15	μA
	V <sub>R</sub> = 200 V	BAV21WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 200 V, T <sub>J</sub> = 100 °C	BAV21WS	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, f = 1 MHz		C <sub>D</sub>			1.5	pF
Reverse recovery time	I <sub>F</sub> = 30 mA, I <sub>R</sub> = 30 mA, i <sub>R</sub> = 3 mA, R <sub>L</sub> = 100 Ω		t <sub>rr</sub>			50	ns

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)



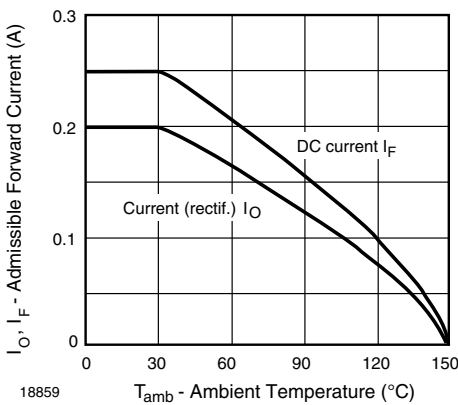
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Fig. 1 - Forward Current vs. Forward Voltage



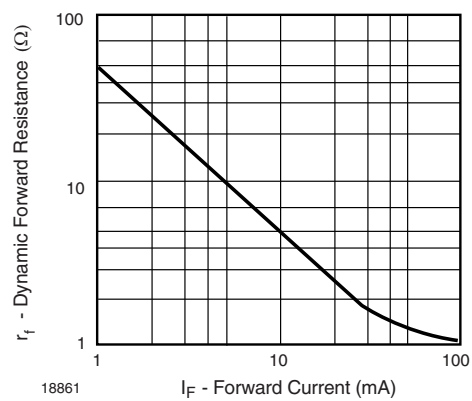
18864

Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature



18859

Fig. 2 - Admissible Forward Current vs. Ambient Temperature



18861

Fig. 4 - Dynamic Forward Resistance vs. Forward Current

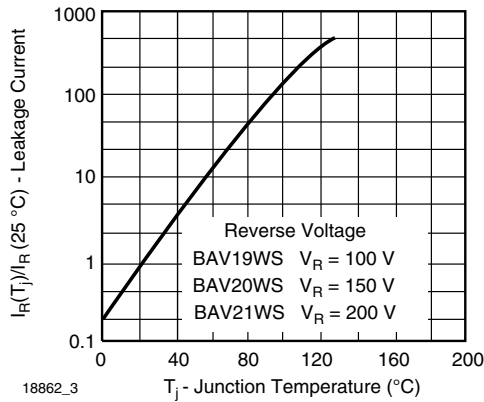


Fig. 5 - Leakage Current vs. Junction Temperature

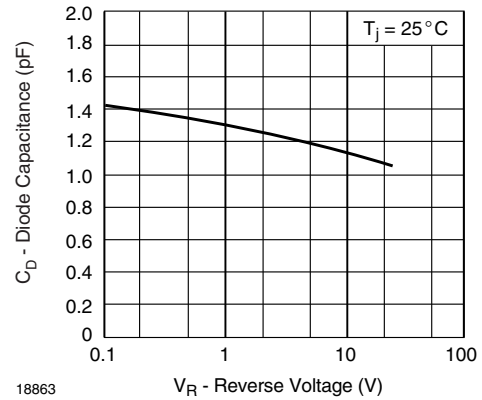
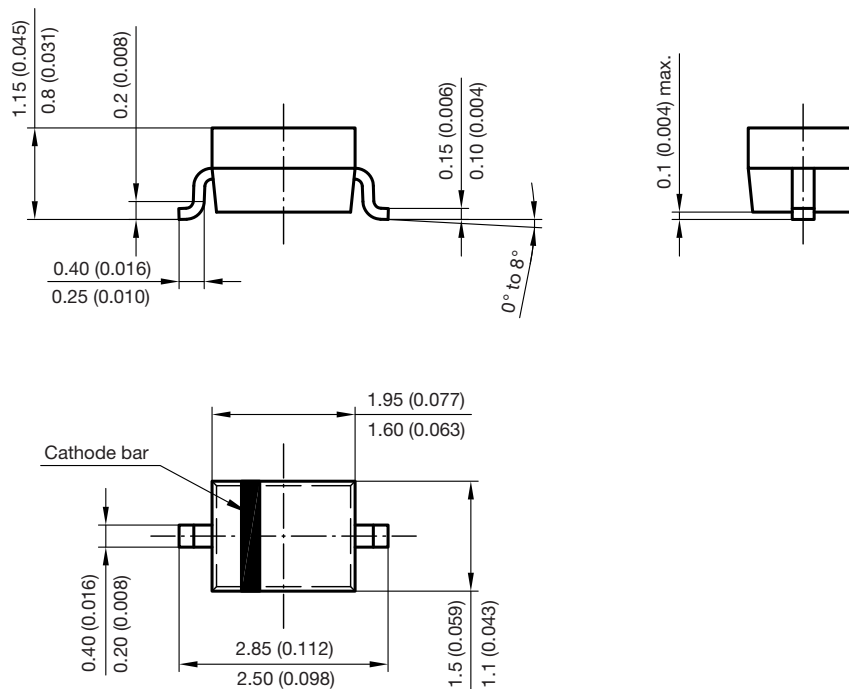
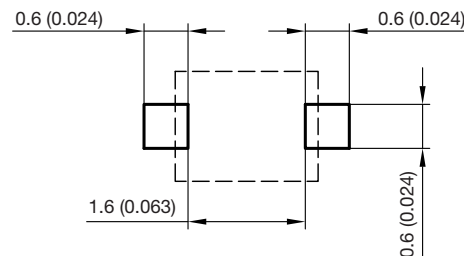


Fig. 6 - Capacitance vs. Reverse Voltage

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



Foot print recommendation:



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 17443



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