



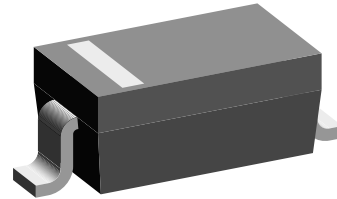
## Small Signal Switching Diodes, High Voltage

### Features

- Silicon epitaxial planar diodes
- For general purpose
- These diodes are also available in other case styles including: the DO-35 case with the type designations BAV19 to BAV21, the MiniMELF case with the type designations BAV100 to BAV103, the SOT-23 case with the type designations BAS19 to BAS21, and the SOD-323 case with type designations BAV19WS-V to BAV21WS-V
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS  
COMPLIANT



17431

### Mechanical Data

**Case:** SOD-123

**Weight:** approx. 10.3 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	Type differentiation	Ordering code	Marking	Remarks
BAV19W-V	$V_R = 100\text{ V}$	BAV19W-V-GS18 or BAV19W-V-GS08	A8	Tape and reel
BAV20W-V	$V_R = 150\text{ V}$	BAV20W-V-GS18 or BAV20W-V-GS08	A9	Tape and reel
BAV21W-V	$V_R = 200\text{ V}$	BAV21W-V-GS18 or BAV21W-V-GS08	AA	Tape and reel

### Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Continuous reverse voltage		BAV19W-V	$V_R$	100	V
		BAV20W-V	$V_R$	150	V
		BAV21W-V	$V_R$	200	V
Repetitive peak voltage		BAV19W-V	$V_{RRM}$	120	V
		BAV20W-V	$V_{RRM}$	200	V
		BAV21W-V	$V_{RRM}$	250	V
DC Forward current			$I_F$	250 <sup>1)</sup>	mA
Rectified current (average) half wave rectification with resist. load			$I_{F(AV)}$	200 <sup>1)</sup>	mA
Repetitive peak forward current	$f \geq 50\text{ Hz}$ , $\theta = 180^{\circ}$		$I_{FRM}$	625 <sup>1)</sup>	mA
Surge forward current	$t < 1\text{ s}$ , $T_j = 25\text{ }^{\circ}\text{C}$		$I_{FSM}$	1	A
Power dissipation			$P_{tot}$	410 <sup>1)</sup>	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		$R_{thJA}$	375 <sup>1)</sup>	$^{\circ}\text{C/W}$
Junction temperature		$T_j$	150 <sup>1)</sup>	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 150 <sup>1)</sup>	$^{\circ}\text{C}$

#### Note

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

### Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1	V
	$I_F = 200\text{ mA}$		$V_F$			1.25	V
Leakage current	$V_R = 100\text{ V}$	BAV19W-V	$I_R$			100	nA
	$V_R = 100\text{ V}$ , $T_j = 100\text{ }^{\circ}\text{C}$	BAV19W-V	$I_R$			15	$\mu\text{A}$
	$V_R = 150\text{ V}$	BAV20W-V	$I_R$			100	nA
	$V_R = 150\text{ V}$ , $T_j = 100\text{ }^{\circ}\text{C}$	BAV20W-V	$I_R$			15	$\mu\text{A}$
	$V_R = 200\text{ V}$	BAV21W-V	$I_R$			100	nA
	$V_R = 200\text{ V}$ , $T_j = 100\text{ }^{\circ}\text{C}$	BAV21W-V	$I_R$			15	$\mu\text{A}$
Dynamic forward resistance	$I_F = 10\text{ mA}$		$r_f$		5		$\Omega$
Diode capacitance	$V_R = 0$ , $f = 1\text{ MHz}$		$C_D$		1.5		pF
Reverse recovery time	$I_F = 30\text{ mA}$ , $I_R = 30\text{ mA}$ , $i_R = 3\text{ mA}$ , $R_L = 100\text{ }\Omega$		$t_{rr}$			50	ns

## Typical Characteristics

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

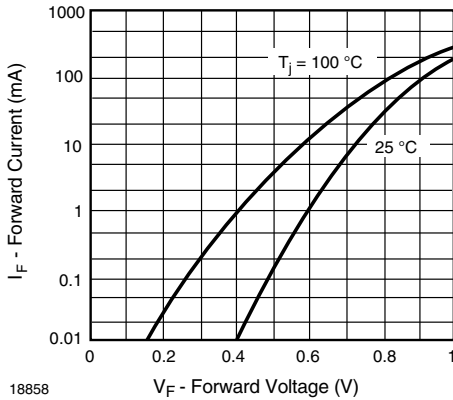


Figure 1. Forward Current vs. Forward Voltage

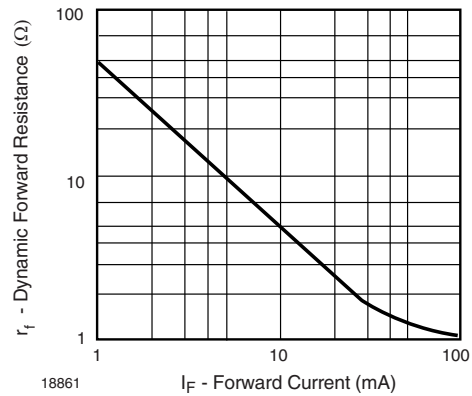


Figure 4. Dynamic Forward Resistance vs. Forward Current

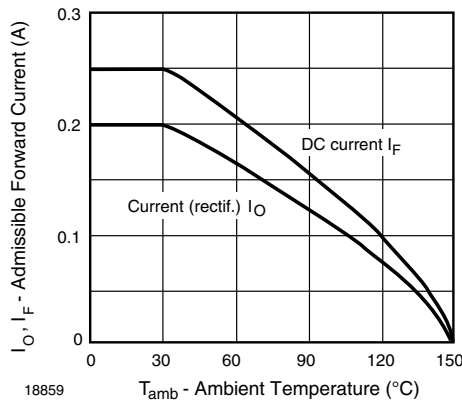


Figure 2. Admissible Forward Current vs. Ambient Temperature

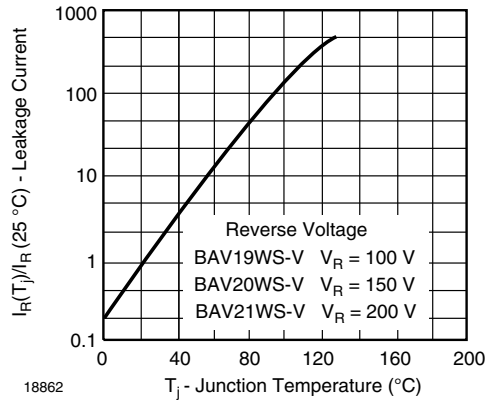


Figure 5. Leakage Current vs. Junction Temperature

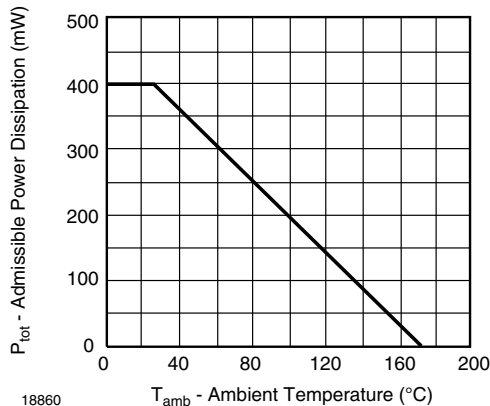


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

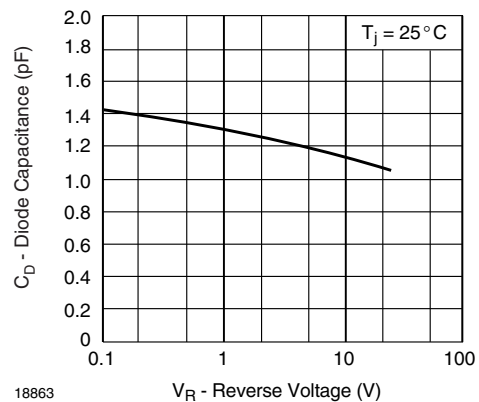


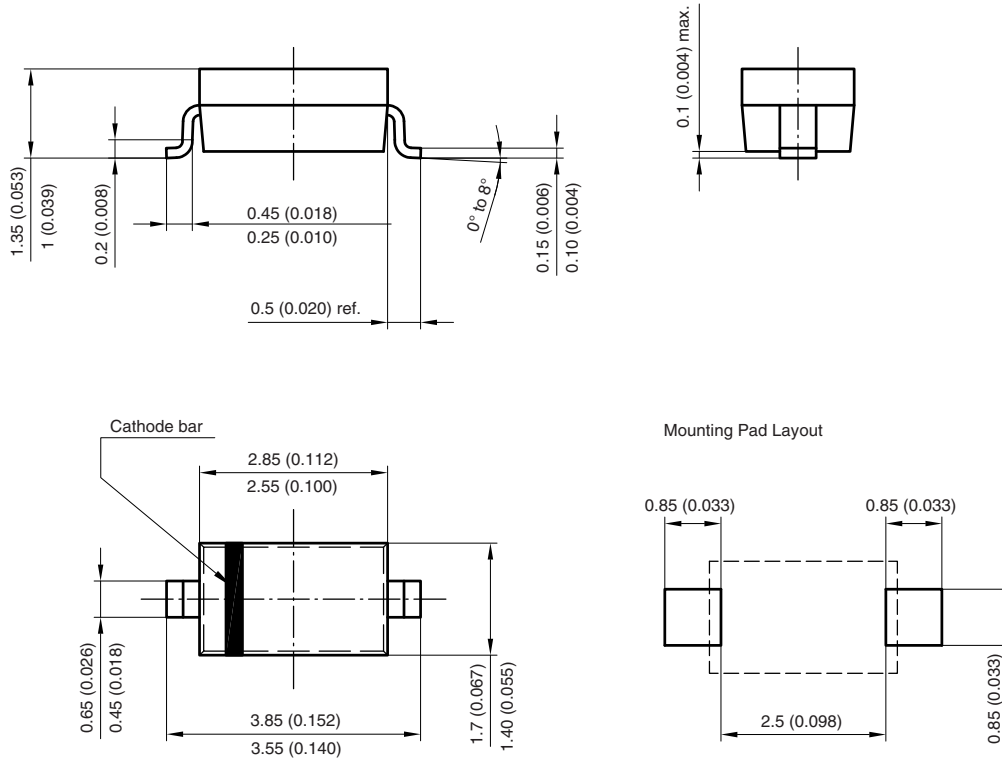
Figure 6. Capacitance vs. Reverse Voltage

# BAV19W-V, BAV20W-V, BAV21W-V



Vishay Semiconductors

## Package Dimensions in millimeters (inches): SOD-123



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