



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:



RoHS COMPLIANT

For definitions of compliance please see www.vishay.com/doc?99912

MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 mg

Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 m tape), 15K/box

PARTS TABLE					
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAV19W	V _R = 100 V	BAV19W-E3-08 or BAV19W-E3-18	A8	Single diode	Tape and reel
		BAV19W-HE3-08 or BAV19W-HE3-18			
BAV20W	V _R = 150 V	BAV20W-E3-08 or BAV20W-E3-18	A9	Single diode	Tape and reel
		BAV20W-HE3-08 or BAV20W-HE3-18			
BAV21W	V _R = 200 V	BAV21W-E3-08 or BAV21W-E3-18	AA	Single diode	Tape and reel
		BAV21W-HE3-08 or BAV21W-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Continuous reverse voltage		BAV19W	V _R	100	V
		BAV20W	V _R	150	V
		BAV21W	V _R	200	V
Repetitive peak reverse voltage		BAV19W	V _{RRM}	120	V
		BAV20W	V _{RRM}	200	V
		BAV21W	V _{RRM}	250	V
DC Forward current ⁽¹⁾			I _F	250	mA
Rectified current (average) half wave rectification with resist. 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	A
Power dissipation ⁽¹⁾			P _{tot}	410	mW

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R _{thJA}	375	°C/W
Junction temperature ⁽¹⁾		T _j	150	°C
Storage temperature range ⁽¹⁾		T _{stg}	- 65 to + 150	°C
Operating temperature range		T _{op}	- 55 to + 150	°C

Note

⁽¹⁾ 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	I_R			100	nA
	$V_R = 100\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV19W	I_R			15	μA
	$V_R = 150\text{ V}$	BAV20W	I_R			100	nA
	$V_R = 150\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV20W	I_R			15	μA
	$V_R = 200\text{ V}$	BAV21W	I_R			100	nA
	$V_R = 200\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV21W	I_R			15	μA
Dynamic forward resistance	$I_F = 10\text{ mA}$		r_f		5		Ω
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

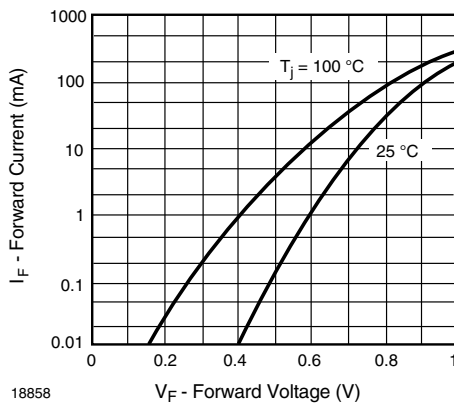
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

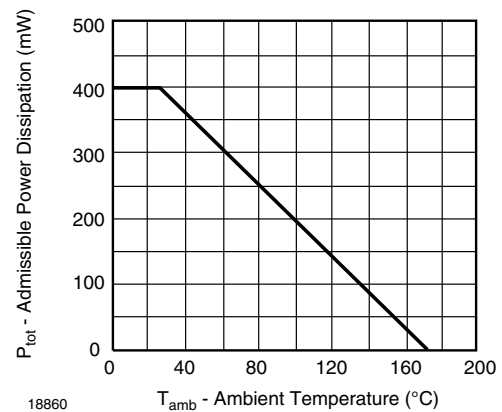


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

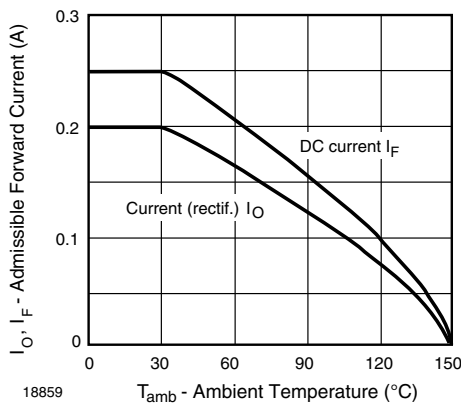


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

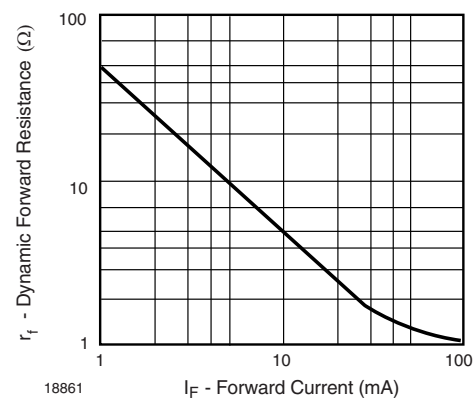


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

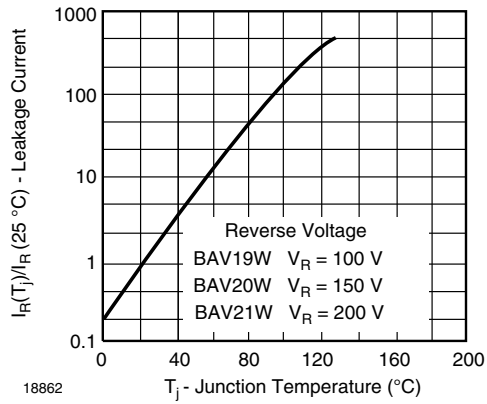


Fig. 5 - Leakage Current vs. Junction Temperature

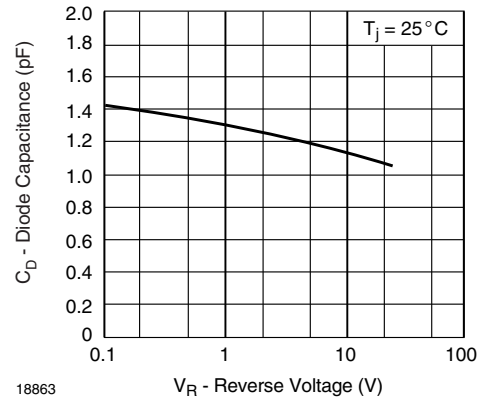


Fig. 6 - Capacitance vs. Reverse Voltage

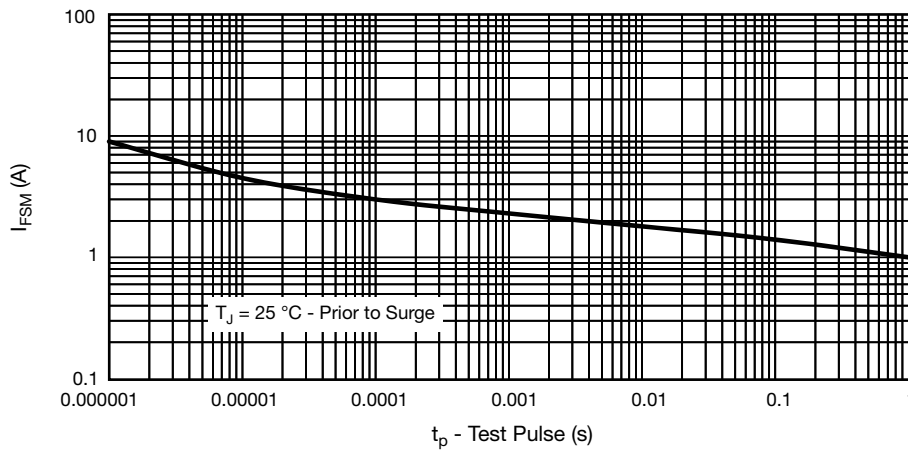
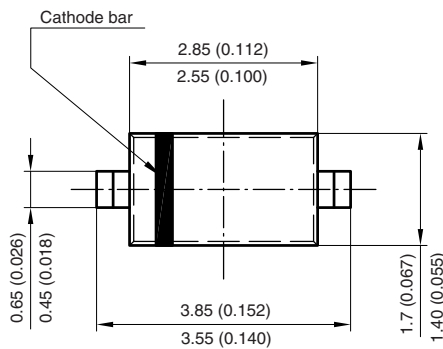
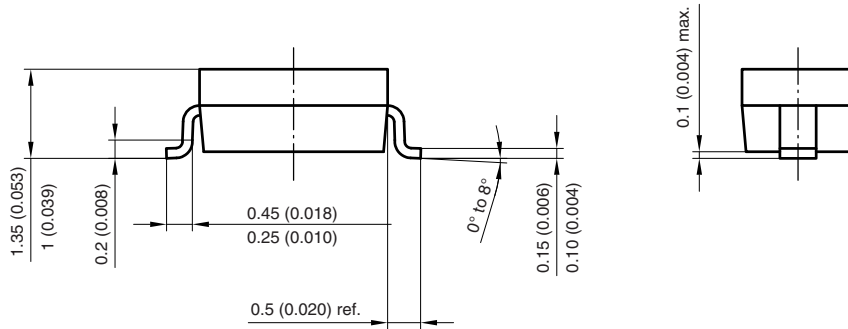


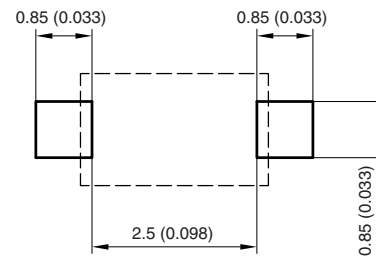
Fig. 7 - Non-Repetitive Peak Forward Current vs. Pulse Duration
Maximum Admissible Values of Square Pulse



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Mounting Pad Layout



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 17432



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