

Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- AEC-Q101 qualified
- Base P/N-G3 - green, commercial grade
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

MECHANICAL DATA

Case: SOD-123

Weight: approx. 9.4 mg

Packaging codes/options:

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

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

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAV19W-G	$V_R = 100\text{ V}$	BAV19W-G3-08 or BAV19W-G3-18	AS	Single diode	Tape and reel
BAV20W-G	$V_R = 150\text{ V}$	BAV20W-G3-08 or BAV20W-G3-18	AT	Single diode	Tape and reel
BAV21W-G	$V_R = 200\text{ V}$	BAV21W-G3-08 or BAV21W-G3-18	AU	Single diode	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-G	V_R	100	V
		BAV20W-G	V_R	150	V
		BAV21W-G	V_R	200	V
Repetitive peak reverse voltage		BAV19W-G	V_{RRM}	120	V
		BAV20W-G	V_{RRM}	200	V
		BAV21W-G	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⁾	$f \geq 50\text{ Hz}$		I_{FRM}	625	mA
Surge forward current	$t < 1\text{ s}$		I_{FSM}	1	A
Power dissipation ⁽¹⁾			P_{tot}	410	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	375	K/W
Junction temperature ⁽¹⁾		T_J	150	$^{\circ}\text{C}$
Storage temperature range ⁽¹⁾		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	- 55 to + 150	$^{\circ}\text{C}$

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			1250	mV
Leakage current	$V_R = 100\text{ V}$	BAV19W-G	I_R			100	nA
	$V_R = 100\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV19W-G	I_R			15	μA
	$V_R = 150\text{ V}$	BAV20W-G	I_R			100	nA
	$V_R = 150\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV20W-G	I_R			15	μA
	$V_R = 200\text{ V}$	BAV21W-G	I_R			100	nA
	$V_R = 200\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV21W-G	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)

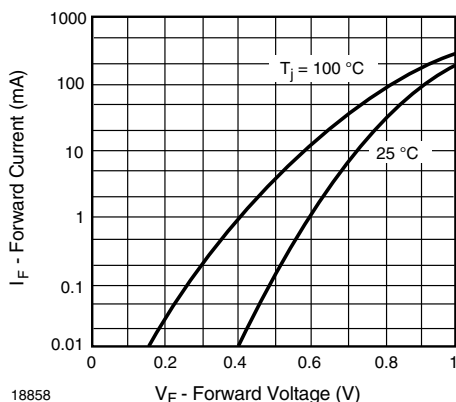


Fig. 1 - Forward Current vs. Forward Voltage

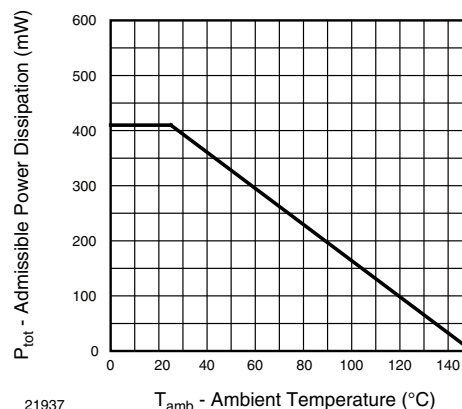


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

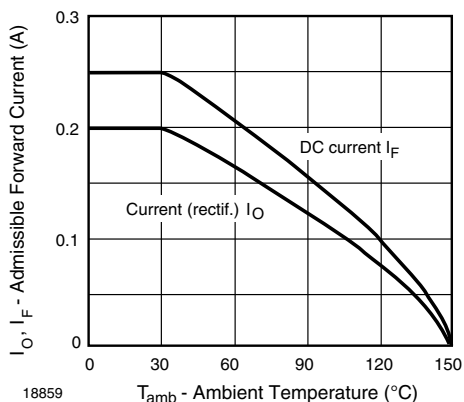


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

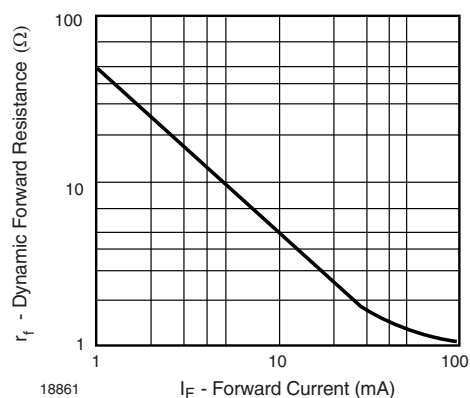


Fig. 4 - Dynamic Forward Resistance vs. Forward Current

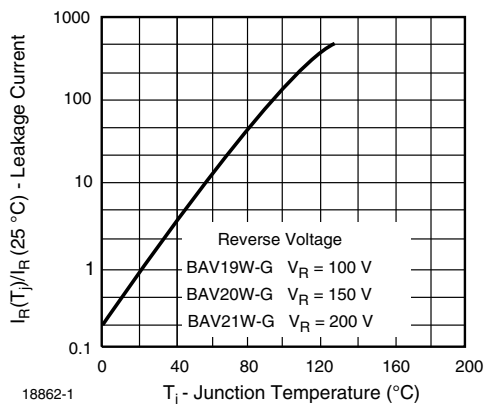


Fig. 5 - Leakage Current vs. Junction Temperature

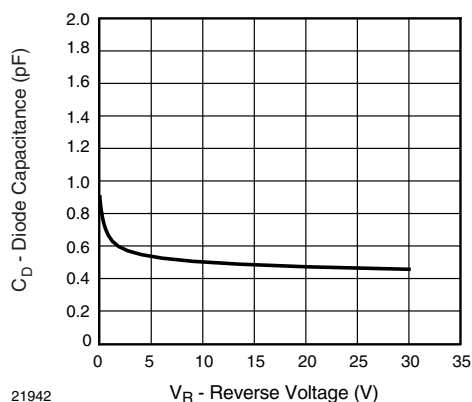
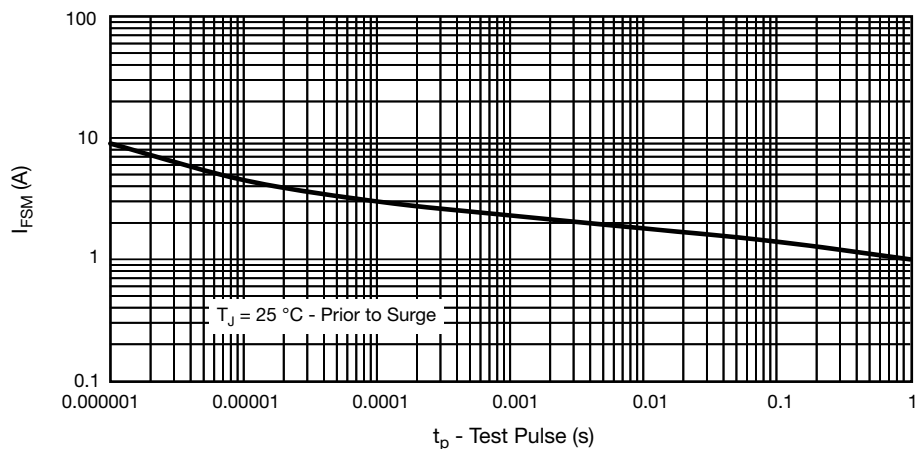
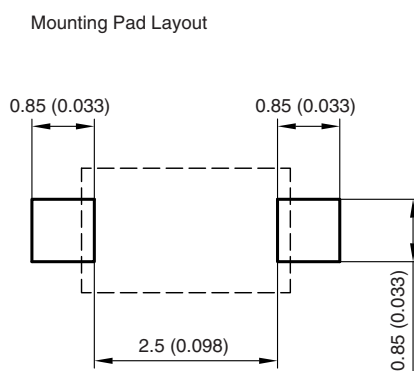
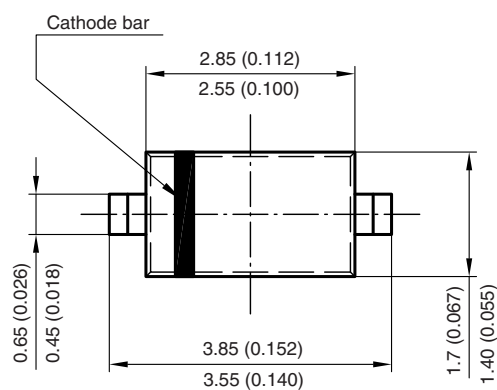
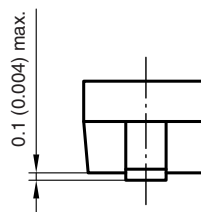
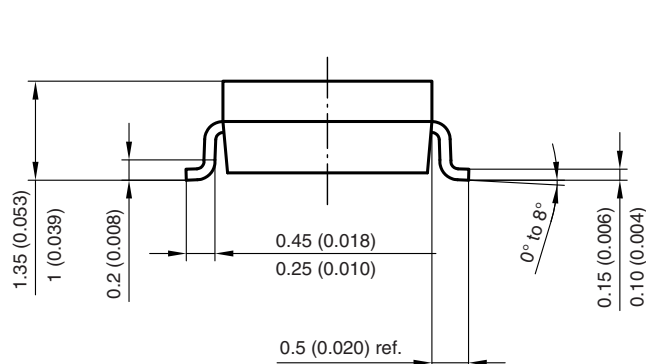


Fig. 6 - Diodes Capacitance vs. Reverse Voltage


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

PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**

Rev. 4 - Date: 24. Sep. 2009
Document no.: S8-V-3910.01-001 (4)
17432



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