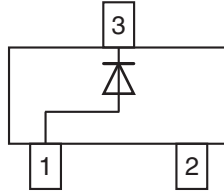


Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion
- General purpose switching applications
- High conductance
- AEC-Q101 qualified
- Base P/N-G3 - green, commercial grade
- Material categorization:

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



MECHANICAL DATA

Case: SOT-23

Weight: approx. 8.1 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
BAS19-G	$V_R = 100\text{ V}$	BAS19-G3-08 or BAS19-G3-18	A8G	Single diode	Tape and reel
BAS20-G	$V_R = 150\text{ V}$	BAS20-G3-08 or BAS20-G3-18	A9G	Single diode	Tape and reel
BAS21-G	$V_R = 200\text{ V}$	BAS21-G3-08 or BAS21-G3-18	AAG	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		BAS19-G	V_R	100	V
		BAS20-G	V_R	150	V
		BAS21-G	V_R	200	V
Repetitive peak reverse voltage		BAS19-G	V_{RRM}	120	V
		BAS20-G	V_{RRM}	200	V
		BAS21-G	V_{RRM}	250	V
Non-repetitive peak forward current	$t = 1\text{ }\mu\text{s}$		I_{FSM}	2.5	A
Non-repetitive peak forward surge current	$t = 1\text{ s}$			0.5	
Maximum average forward rectified current ⁽¹⁾	(av. over any 20 ms period)		$I_{F(AV)}$	200	mA
DC forward current ⁽²⁾			I_F	200	mA
Repetitive peak forward current			I_{FRM}	625	mA
Power dissipation ⁽²⁾			P_{tot}	250	mW

Notes

⁽¹⁾ Measured under pulse conditions; pulse time = $t_p \leq 0.3\text{ ms}$

⁽²⁾ Device on fiberglass substrate, see layout on next page



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}	430	K/W
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	- 55 to + 150	$^{\circ}\text{C}$

Note

⁽¹⁾ Device on fiberglass substrate, see layout drawing below

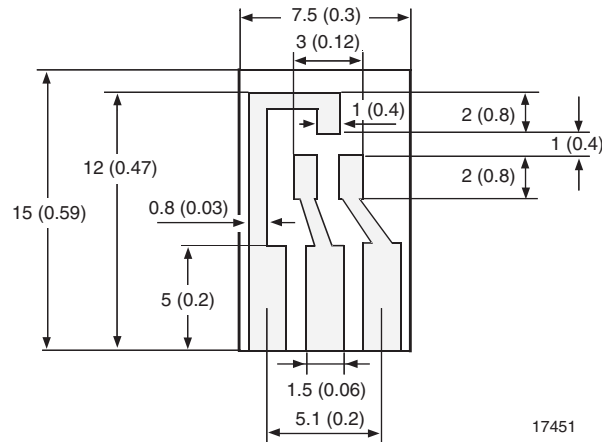
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		V_F			1.0	V
	$I_F = 200\text{ mA}$		V_F			1.25	V
Leakage current	$V_R = 100\text{ V}$	BAS19-G	I_R			100	nA
	$V_R = 150\text{ V}$	BAS20-G	I_R			100	nA
	$V_R = 200\text{ V}$	BAS21-G	I_R			100	nA
	$V_R = V_{Rmax.}, T_J = 150\text{ }^{\circ}\text{C}$		I_R			100	μA
Dynamic forward resistance	$I_F = 10\text{ mA}$		r_f		5		Ω
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$		C_D			5	pF
Reverse recovery time	$I_F = I_R = 30\text{ mA}, R_L = 100\text{ }\Omega,$ $i_R = 3\text{ mA}$		t_{rr}			50	ns

Layout for R_{thJA} test

Thickness:

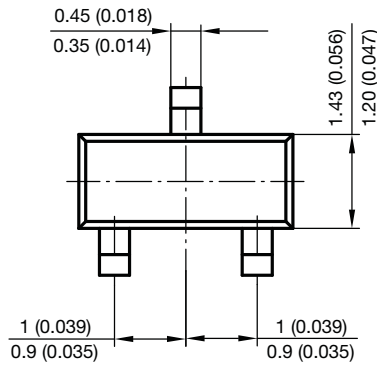
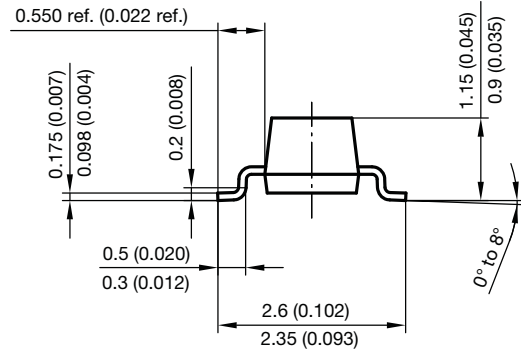
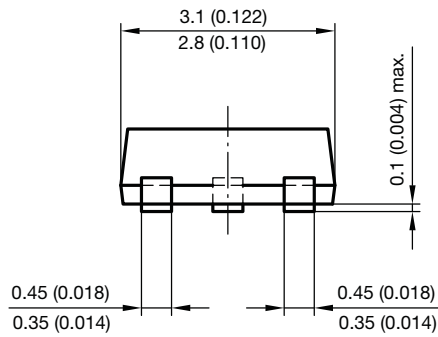
Fiberglass 1.5 mm (0.059 in.)

Copper leads 0.3 mm (0.012 in.)

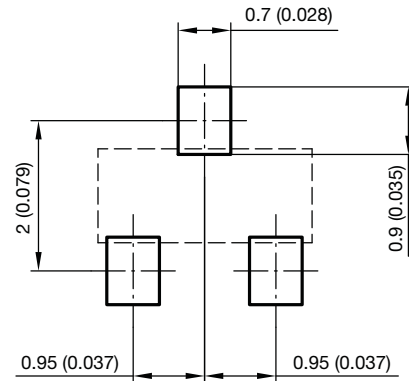




PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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Rev. 8 - Date: 23.Sept.2009
17418



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