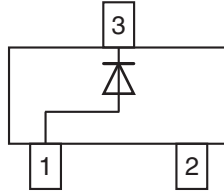


## Small Signal Switching Diodes, High Voltage



### 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](http://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 <sup>(1)</sup>	(av. over any 20 ms period)		$I_{F(AV)}$	200	mA
DC forward current <sup>(2)</sup>			$I_F$	200	mA
Repetitive peak forward current			$I_{FRM}$	625	mA
Power dissipation <sup>(2)</sup>			$P_{tot}$	250	mW

### Notes

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

<sup>(2)</sup> Device on fiberglass substrate, see layout on next page



<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	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**

<sup>(1)</sup> Device on fiberglass substrate, see layout drawing below

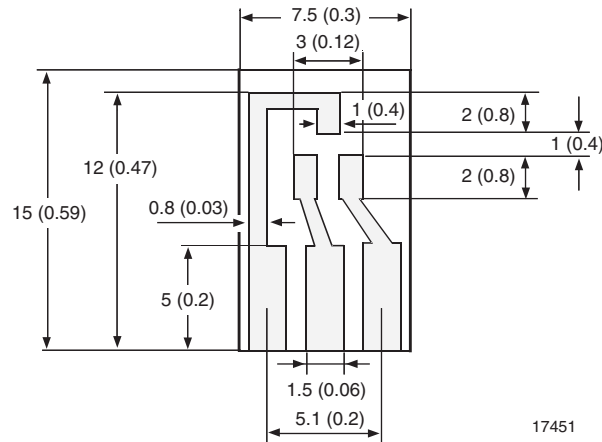
<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1.0	V
	$I_F = 200\text{ mA}$		$V_F$			1.25	V
Leakage current	$V_R = 100\text{ V}$	BAS19-G	$I_R$			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	$\mu\text{A}$
Dynamic forward resistance	$I_F = 10\text{ mA}$		$r_f$		5		$\Omega$
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$		$C_D$			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.)

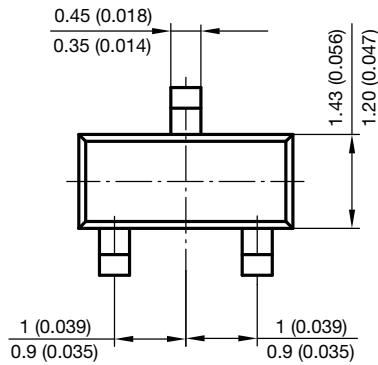
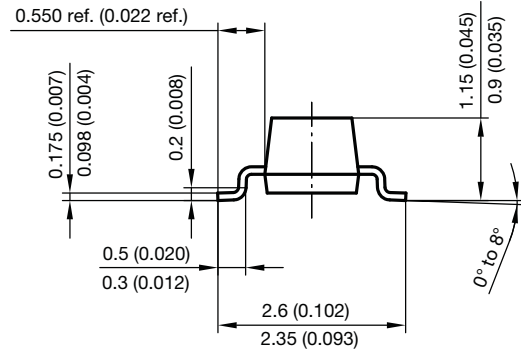
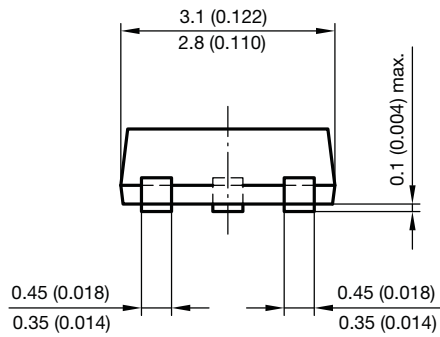
Copper leads 0.3 mm (0.012 in.)



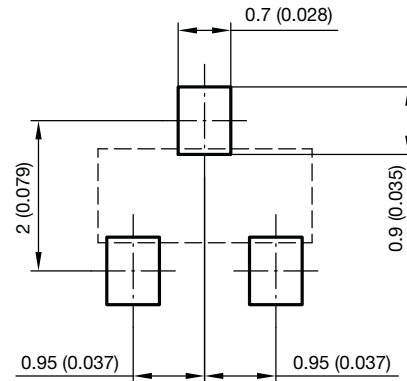
17451



## PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



Document no.: 6.541-5014.01-4  
Rev. 8 - Date: 23.Sept.2009  
17418



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