

Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started


MECHANICAL DATA

Case: SOT-23

Weight: approx. 8.8 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	CIRCUIT CONFIGURATION	REMARKS
BAS19	$V_R = 100\text{ V}$	BAS19-E3-08 or BAS19-E3-18 BAS19-HE3-08 or BAS19-HE3-18	A8	Single	Tape and reel
BAS20	$V_R = 150\text{ V}$	BAS20-E3-08 or BAS20-E3-18 BAS20-HE3-08 or BAS20-HE3-18	A81	Single	Tape and reel
BAS21	$V_R = 200\text{ V}$	BAS21-E3-08 or BAS21-E3-18 BAS21-HE3-08 or BAS21-HE3-18	A82	Single	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	V_R	100	V
		BAS20	V_R	150	V
		BAS21	V_R	200	V
Repetitive peak reverse voltage		BAS19	V_{RRM}	120	V
		BAS20	V_{RRM}	200	V
		BAS21	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	$t = 1\text{ s}$		I_{FSM}	0.5	A
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 = $t_p \geq 0.3\text{ }\mu\text{s}$
⁽²⁾ Device on fiberglass substrate, see layout on next page



THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air		R _{thJA} ⁽¹⁾	430	°C
Junction temperature		T _j	150	°C
Storage temperature range		T _{stg}	-65 to +150	°C
Operating temperature range		T _{op}	-55 to +150	°C

Note

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

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 100 mA		V _F			1.0	V
	I _F = 200 mA		V _F			1.25	V
Leakage current	V _R = 100 V	BAS19	I _R			100	nA
	V _R = 150 V	BAS20	I _R			100	nA
	V _R = 200 V	BAS21	I _R			100	nA
	V _R = V _{Rmax} , T _j = 150 °C		I _R			100	μA
Dynamic forward resistance	I _F = 10 mA		r _f		5		Ω
Diode capacitance	V _R = 0, f = 1 MHz		C _D			5	pF
Reverse recovery time	I _F = I _R = 30 mA, R _L = 100 Ω, i _R = 3 mA		t _{rr}			50	ns

LAYOUT FOR R_{thJA} TEST

Thickness:

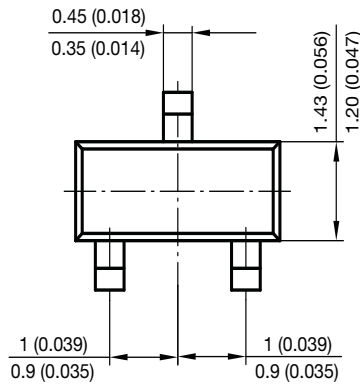
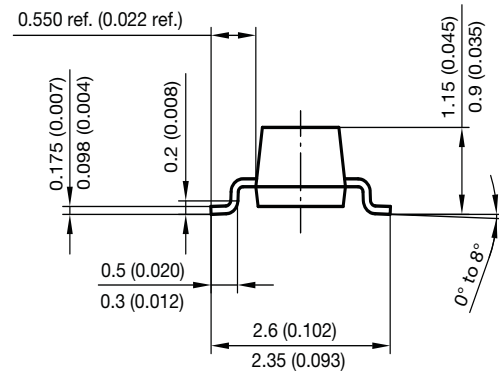
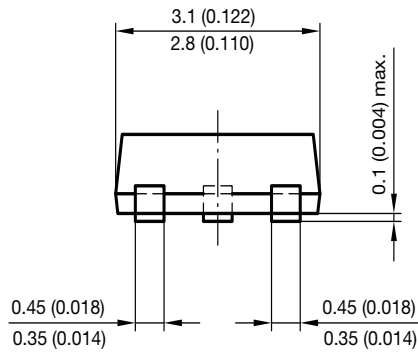
Fiberglass 1.5 mm (0.059 inches)

Copper leads 0.3 mm (0.012 inches)





PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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