

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
- 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

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	INTERNAL CONSTRUCTION	REMARKS
BAS19	$V_R = 100\text{ V}$	BAS19-E3-08 or BAS19-E3-18	A8	Single diode	Tape and reel
		BAS19-HE3-08 or BAS19-HE3-18			
BAS20	$V_R = 150\text{ V}$	BAS20-E3-08 or BAS20-E3-18	A81	Single diode	Tape and reel
		BAS20-HE3-08 or BAS20-HE3-18			
BAS21	$V_R = 200\text{ V}$	BAS21-E3-08 or BAS21-E3-18	A82	Single diode	Tape and reel
		BAS21-HE3-08 or BAS21-HE3-18			

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 = $t_p \geq 0.3\text{ ms}$
⁽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		$R_{thJA}^{(1)}$	430	$^{\circ}\text{C}$
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	I_R			100	nA
	$V_R = 150\text{ V}$	BAS20	I_R			100	nA
	$V_R = 200\text{ V}$	BAS21	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 inches)

Copper leads 0.3 mm (0.012 inches)





PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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