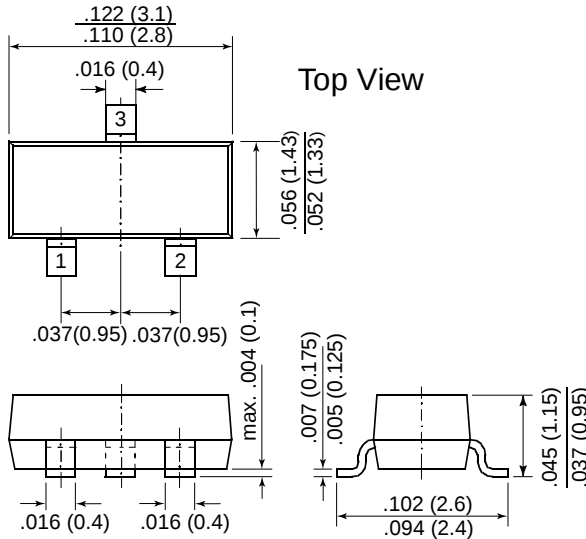


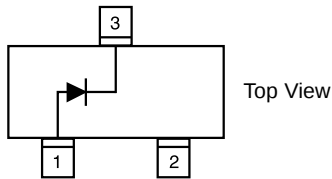


TO-236AB (SOT-23)



Marking

BAS19 = A8
BAS20 = A81
BAS21 = A82



Features

- Silicon Epitaxial Planar Diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- These diodes are also available in other case styles including: the SOD-123 case with the type designations BAV19W to BAV21W, the Mini-MELF case with the type designation BAV101 to BAV103, the DO-35 case with the type designations BAV19 to BAV21 and the SOD-323 case with type designation BAV19WS to BAV21WS.

Mechanical Data

Case: SOT-23 Plastic Package

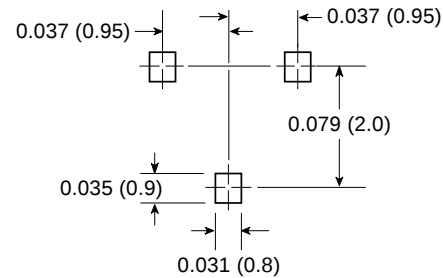
Weight: approx. 0.008g

Packaging Codes/Options:

E8/10K per 13" reel (8mm tape), 30K/box

E9/3K per 7" reel (8mm tape), 30K/box

Mounting Pad Layout



Maximum Ratings and Thermal Characteristics

(T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Continuous Reverse Voltage	BAS19 BAS20 BAS21 V _R	100 150 200	V
Repetitive Peak Reverse Voltage	BAS19 BAS20 BAS21 V _{RRM}	120 200 250	V
Non-Repetitive Peak Forward Current	at t = 1μs at t = 1s I _{FSM}	2.5 0.5	A
Average Rectified Forward Current (av. over any 20ms period)	I _{F(AV)}	200 ⁽¹⁾	mA
Forward DC Current at T _{amb} = 25°C	I _F	200 ⁽²⁾	mA
Repetitive Peak Forward Current	I _{FRM}	625	mA
Power Dissipation up to T _{amb} = 25°C	P _{tot}	250 ⁽²⁾	mW
Thermal Resistance Junction to Ambient Air	R _{θJA}	430 ⁽²⁾	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-65 to +150	°C

Notes: (1) Measured under pulse conditions; Pulse time = t_p ≤ 0.3ms

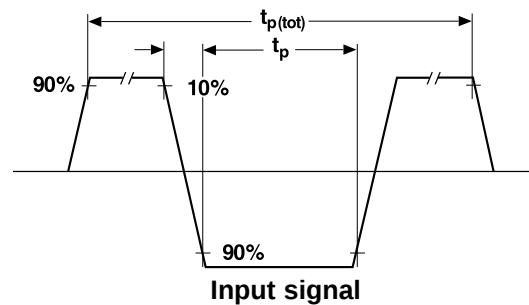
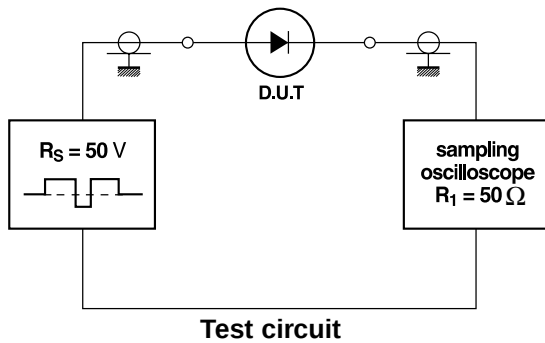
(2) Device on fiberglass substrate, see layout on next page

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F = 100mA I _F = 200mA	— —	— —	1.0 1.25	mV mV
Leakage Current	I _R	V _R = V _{Rmax} V _R = V _{Rmax} ; T _J = 150°C	— —	— —	100 100	nA μA
Dynamic Forward Resistance	r _f	I _F = 10mA	—	5	—	Ω
Capacitance	C _{tot}	V _R = 0 f = 1MHz	—	—	5	pF
Reverse Recovery Time (see figures)	t _{rr}	I _F = 30mA, I _R = 30mA I _{rr} = 3mA, R _L = 100Ω	—	—	50	ns

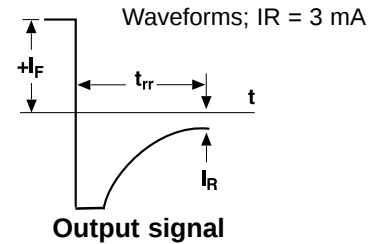
(1) Device on fiberglass substrate, see layout (SOT-23).

Test Circuit and Waveforms (BAS19, BAS20, BAS21)



Input Signal	- total pulse duration - duty factor - rise time of reverse pulse - reverse pulse duration	tp(tot) = 2μs δ = 0.0025 tr = 0.6ns tp = 100ns
Oscilloscope	- rise time - circuit capacitance*	tr = 0.35ns C < 1pF

*C = oscilloscope input capacitance + parasitic capacitance



Layout for R_{ΘJA} test

Thickness: Fiberglass 0.059 in. (1.5 mm)
Copper leads 0.012 in. (0.3 mm)

