



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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BAS19 THRU BAS21

Small Signal Diodes 250mW

Features

- Ideally Suited for Automatic Insertion
- 150°C Junction Temperature
- Fast Switching speed
- Epitaxial Planar Die Construction
- Lead Free Finish/Rohs Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"

Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Weight: 0.008 grams (approx.)

MCC Part Number	Marking	Continuous Reverse Voltage V_R (V)	Repetitive Peak Reverse Voltage V_{RRM} (V)
BAS19	JP	100	120
BAS20	JR	150	200
BAS21	JS	200	250

Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Value	Unit
Non-repetitive Peak Forward Surge Current @ $t=1\mu s$	I_{FSM}	2.5	A
Average Rectified Forward Current	$I_{F(AV)}$	200 ⁽¹⁾	mA
Forward DC Current at $T_{amb}=25^\circ C$	I_F	200 ⁽²⁾	mA
Repetitive Peak Forward Current	I_{FRM}	625	mA
Power Dissipation up to $T_{amb}=25^\circ C$	P_{tot}	250	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	430	°C/W
Operating & Storage Temperature	T_j, T_{STG}	-65~150	°C

- Notes:** (1) Measured under pulse conditions;
 Pulse time = $t_p \leq 0.3ms$
 (2) Device on fiberglass substrate,
 See layout on next page

SOT-23

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout

BAS19 thru BAS21

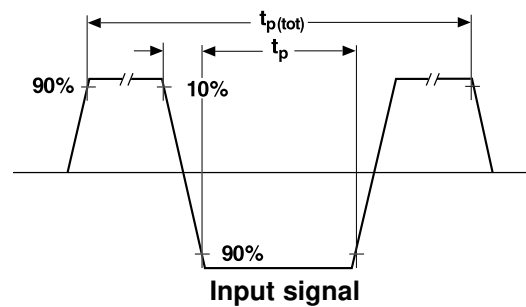
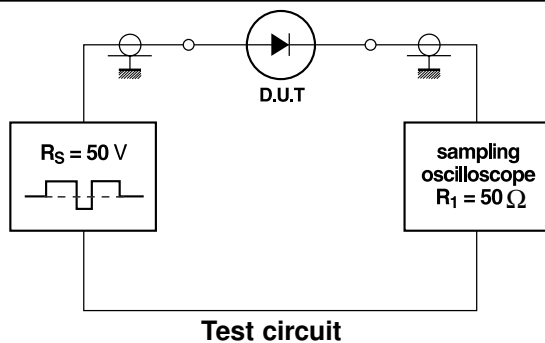
Electrical Characteristics

 (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F = 100mA	—	—	1.0	V
		I _F = 200mA	—	—	1.25	V
Leakage Current	I _R	V _R = V _{Rmax}	—	—	100	nA
		V _R = V _{Rmax} ; T _j = 150°C	—	—	100	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

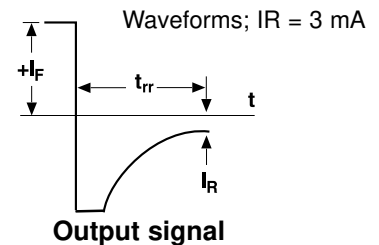
(1) Device on fiberglass substrate, see layout (SOT-23).

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

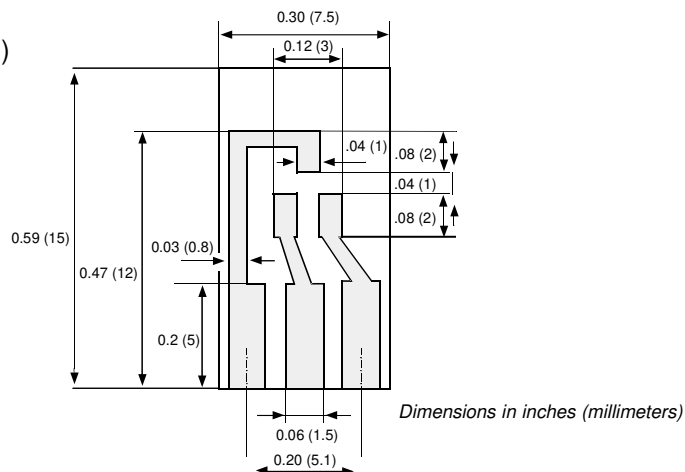
*C = oscilloscope input capacitance + parasitic capacitance



Layout for R_{ΘJA} test

Thickness: Fiberglass 0.059 in. (1.5 mm)

Copper leads 0.012 in. (0.3 mm)





TM

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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