Micro Commercial Components
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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

Mechanical Data

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Weight: 0.008 grams (approx.)

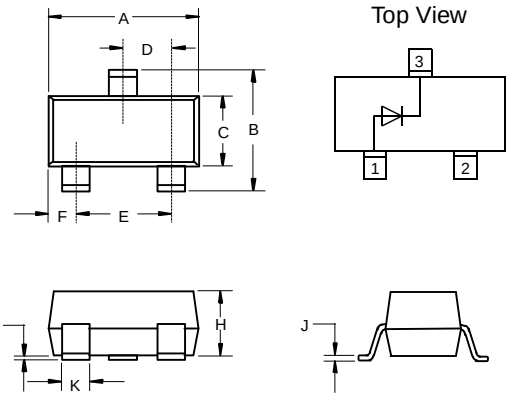
MCC Part Number	Marking	Continuous Reverse Voltage V_R (V)	Repetitive Peak Reverse Voltage V_{RRM} (V)
BAS19	JP	100	120
BAS20	JR	150	200
BAS21	JS	200	250

Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Value	Unit
Non-repetitive Peak @ t=1us Forward Surge Current @ t=1s	I_{FSM}	2.5 0.5	A
Average Rectified Forward Current	$I_{F(AV)}$	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	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	430	°C/W
Operating & Storage Temperature	T_j, T_{STG}	-65~150	°C

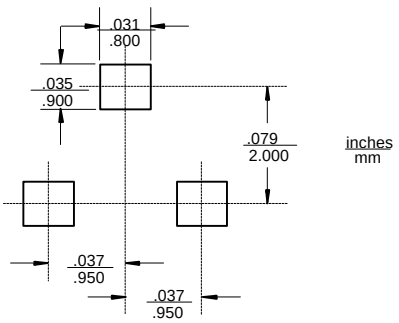
Notes: (1) Measured under pulse conditions;
Pulse time = t_p <= 0.3ms
(2) Device on fiberglass substrate,
See layout on next page

SOT-23



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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



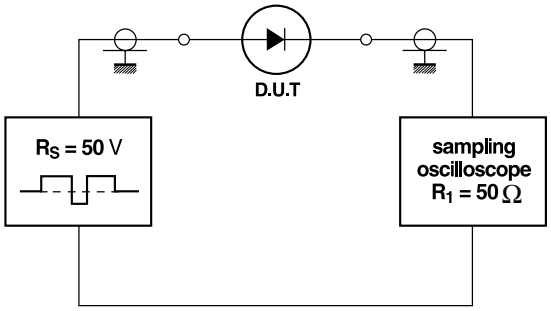
Electrical Characteristics

(T_J = 25°C unless otherwise noted)

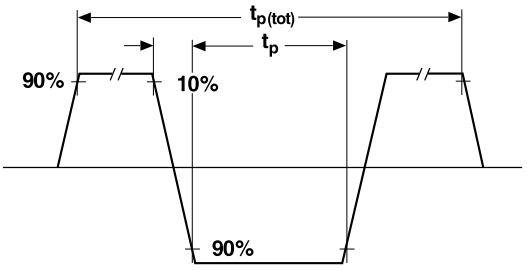
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	I_F = 100mA I_F = 200mA	— —	— —	1.0 1.25	V V
Leakage Current	I_R	$V_R = V_{Rmax}$ $V_R = V_{Rmax}$; T_j = 150°C	— —	— —	100 100	nA µA
Dynamic Forward Resistance	r_f	I_F = 10mA	—	5	—	Ω
Capacitance	C_{tot}	V_R = 0 f = 1MHz	—	—	5	pF
Reverse 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)



Test circuit

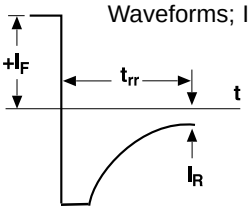


Input signal

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

*C = oscilloscope input capactitance + parasitic capacitance

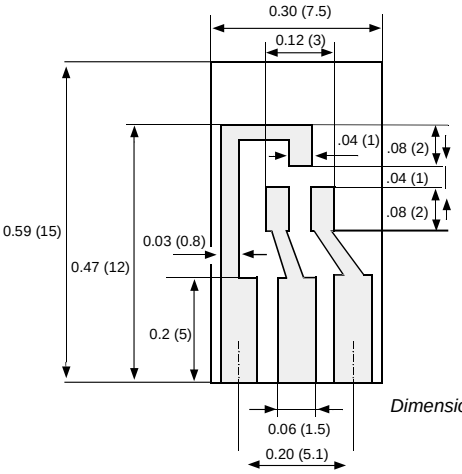
Waveforms; IR = 3 mA



Output signal

Layout for $R_{\Theta JA}$ test

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



Dimensions in inches (millimeters)

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