

SOT23 SILICON HIGH SPEED SWITCHING DIODE

ISSUE 2 – JANUARY 1995

**BAS19
BAS20
BAS21**

PIN CONFIGURATION

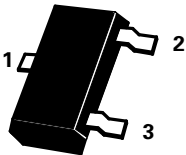


PARTMARKING DETAILS

BAS19 – A8

BAS20 – A81

BAS21 – A82



SOT23

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BAS19	BAS20	BAS21	UNIT
Continuous Reverse Voltage	V_R	100	150	200	V
Repetative Peak Reverse Voltage	V_{RRM}	120	200	250	V
Average Forward Rectified Current	$I_{F(AV)}$	200			mA
Forward Current	I_F	200			mA
Repetative Peak Forward Current	I_{FRM}	625			mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	330			mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150			$^{\circ}C$

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

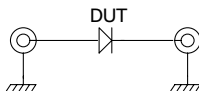
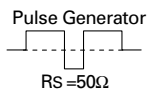
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Reverse Breakdown Voltage	$V_{(BR)}$					
					V	$I_R=100\mu A$ (1)
					V	$I_R=100\mu A$ (1)
					V	$I_R=100\mu A$ (2)
Reverse Current	I_R			100 100	nA μA	$V_R=V_{Rmax}$ $V_R=V_{Rmax}$, $T_J=150^{\circ}C$
Static Forward Voltage	V_F			1.00 1.25		$I_F=100mA$ $I_F=200mA$
Differential Resistance	r_{diff}		5		Ω	$I_F=10mA$
Diode Capacitance	C_d			5	pF	$f=1MHz$
Reverse Recovery Time	t_{rr}			50	ns	$I_F=30mA$ to $I_R=30mA$ $R_L=10\Omega$ measured at $I_R=3mA$

- (1) Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
(2) At zero life time, measured under pulse conditions to avoid excessive dissipation and voltage limited to 275V
Spice parameter data is available upon request for this device

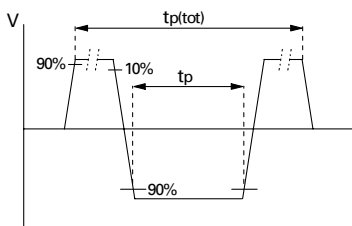
BAS19
BAS20
BAS21

SWITCHING TIME TEST DATA

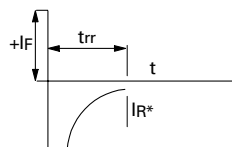
Recovery Time Equivalent Test Circuit



Sampling Oscilloscope
 $R_{IN} = 50\Omega$



Input Signal



Output Signal

Input Signal

Total Pulse Duration	$t_{p(tot)}$	$2\mu s$
Duty Factor	δ	0.0025
Rise Time of Reverse Pulse	t_r	0.6ns

Reverse Pulse Duration t_p 100ns

Oscilloscope

Rise Time	t_r	0.35ns
Circuit Capacitance*	C	<1pF

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