

# SOT23 SILICON HIGH SPEED SWITCHING DIODE

ISSUE 2 – JANUARY 1995

**BAS19  
BAS20  
BAS21**

## PIN CONFIGURATION

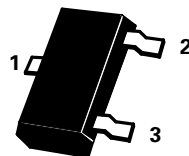


## PARTMARKING DETAILS

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 $T_{amb}=25^\circ\text{C}$	$P_{tot}$	330			mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150			$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Reverse Breakdown Voltage	$V_{(BR)}$					
		BAS19	120		V	$I_R=100\mu\text{A}$ (1)
		BAS20	200		V	$I_R=100\mu\text{A}$ (1)
	BAS21	250		V	$I_R=100\mu\text{A}$ (2)	
Reverse Current	$I_R$			100 100	nA $\mu\text{A}$	$V_R=V_{Rmax}$ $V_R=V_{Rmax}$ , $T_J=150^\circ\text{C}$
Static Forward Voltage	$V_F$			1.00 1.25		$I_F=100\text{mA}$ $I_F=200\text{mA}$
Differential Resistance	$r_{diff}$		5		$\Omega$	$I_F=10\text{mA}$
Diode Capacitance	$C_d$			5	pF	$f=1\text{MHz}$
Reverse Recovery Time	$t_{rr}$			50	ns	$I_F=30\text{mA}$ to $I_R=30\text{mA}$ $R_L=10\Omega$ measured at $I_R=3\text{mA}$

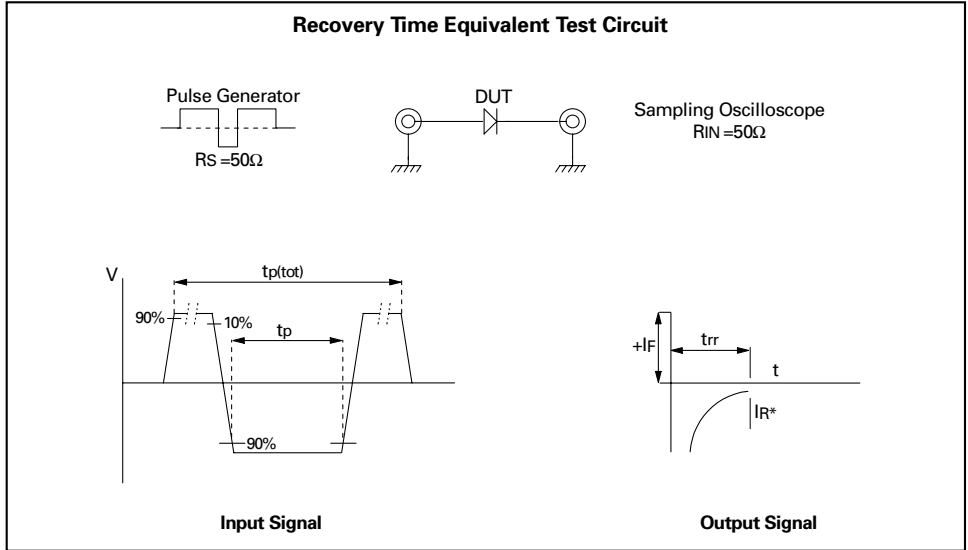
(1) Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq$  2%

(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**



**Input Signal**

Total Pulse Duration	$t_{p(tot)}$	2 $\mu$ s
Duty Factor	$\delta$	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