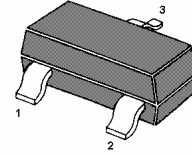
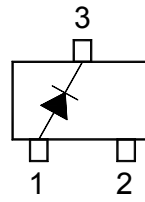


# BAS19, BAS20, BAS21

## HIGH VOLTAGE SWITCHING DIODES

BAS19 Marking Code: **HA**  
 BAS20 Marking Code: **HB**  
 BAS21 Marking Code: **HC**



1. ANODE 3. CATHODE  
 SOT-23 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

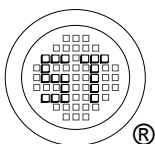
Parameter	Symbol	Value	Unit
Continuous Reverse Voltage	BAS19	120	V
	BAS20	200	
	BAS21	250	
Continuous Forward Current	$I_F$	200	mA
Peak Forward Surge Current	$I_{FM(surge)}$	625	mA
Total Device Dissipation FR-5 Board <sup>1)</sup> $T_A=25\text{ }^\circ\text{C}$ Derate above $25\text{ }^\circ\text{C}$	$P_D$	225	mW
		1.8	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate <sup>2)</sup> $T_A=25\text{ }^\circ\text{C}$ Derate above $25\text{ }^\circ\text{C}$	$P_D$	300	mW
		2.4	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature Range	$T_J, T_S$	-55 to +150	°C

### Characteristics at $T_J = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
Forward Voltage at $I_F = 100\text{ mA}$ at $I_F = 200\text{ mA}$	$V_F$	-	1	V
	$V_F$	-	1.25	V
Reverse Breakdown Voltage at $I_{BR} = 100\text{ }\mu\text{A}$ at $I_{BR} = 100\text{ }\mu\text{A}$ at $I_{BR} = 100\text{ }\mu\text{A}$	BAS19 $V_{(BR)}$	120	-	V
	BAS20 $V_{(BR)}$	200	-	V
	BAS21 $V_{(BR)}$	250	-	V
Reverse Voltage Leakage Current at $V_R = 100\text{ V}$ at $V_R = 150\text{ V}$ at $V_R = 200\text{ V}$ at $V_R = 100\text{ V}, T_J = 150\text{ }^\circ\text{C}$ at $V_R = 150\text{ V}, T_J = 150\text{ }^\circ\text{C}$ at $V_R = 200\text{ V}, T_J = 150\text{ }^\circ\text{C}$	BAS19 $I_R$	-	0.1	$\mu\text{A}$
	BAS20 $I_R$	-	0.1	$\mu\text{A}$
	BAS21 $I_R$	-	0.1	$\mu\text{A}$
	BAS19 $I_R$	-	100	$\mu\text{A}$
	BAS20 $I_R$	-	100	$\mu\text{A}$
	BAS21 $I_R$	-	100	$\mu\text{A}$
Diode Capacitance at $f = 1\text{ MHz}$	$C_d$	-	5	pF
Reverse Recovery Time at $I_F = I_R = 30\text{ mA}, I_{R(REC)} = 3\text{ mA}, R_L = 100\text{ }\Omega$	$t_{rr}$	-	50	ns

<sup>1)</sup> FR-5=1 x 0.75 x 0.062 in.

<sup>2)</sup> Alumina=0.4 x 0.3 x 0.024in.99.5% alumina.



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949:2002  
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Dated : 19/12/2005