

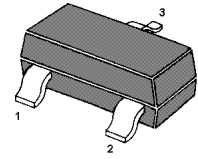
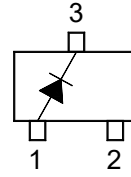
# BAS19, BAS20, BAS21-CH

## Silicon Epitaxial Planar Diodes

High Voltage Switching Diodes

### Features

- AEC-Q101 Qualified
- Halogen and Antimony Free(HAF), RoHS compliant



1. Anode 2. NC. 3. Cathode  
SOT-23 Plastic Package

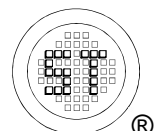
### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Reverse Voltage	BAS19 BAS20 BAS21 $V_R$	120 200 250	V
Continuous Forward Current	$I_{F(AV)}$	200	mA
Repetitive Peak Forward Current	$I_{FRM}$	625	mA
Non-repetitive Peak Forward Surge Current	at $t = 1\text{ s}$ at $t = 1\text{ }\mu\text{s}$ $I_{FSM}$	0.5 2.5	A
Total Device Dissipation <sup>1)</sup>	$P_D$	350	mW
Operating Junction and Storage Temperature Range	$T_j, T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient <sup>1)</sup>	$R_{\theta JA}$	357	$^\circ\text{C/W}$

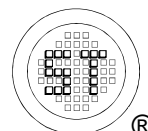
<sup>1)</sup> Device mounted on FR-4 PCB with minimum recommended pad layout.



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

Parameter	Symbol	Min.	Max.	Unit
Forward Voltage at $I_F = 100\text{ mA}$ at $I_F = 200\text{ mA}$	$V_F$	- -	1 1.25	V V
Reverse Breakdown Voltage at $I_R = 100\text{ }\mu\text{A}$ at $I_R = 100\text{ }\mu\text{A}$ at $I_R = 100\text{ }\mu\text{A}$	$V_{(BR)}$	120 200 250	- - -	V V V
Reverse 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 $V_R = 200\text{ V}$ , $T_j = 150\text{ }^\circ\text{C}$	$I_R$	- - - - - -	0.1 0.1 0.1 100 100 100	$\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$ $\mu\text{A}$
Total Capacitance at $V_R = 0$ , $f = 1\text{ MHz}$	$C_{tot}$	-	5	pF
Reverse Recovery Time at $I_F = I_R = 30\text{ mA}$ , $I_{rr} = 0.1 \times I_R$ , $R_L = 100\text{ }\Omega$	$t_{rr}$	-	50	ns



## Electrical Characteristic Curve

Fig 1. Power Derating Curve

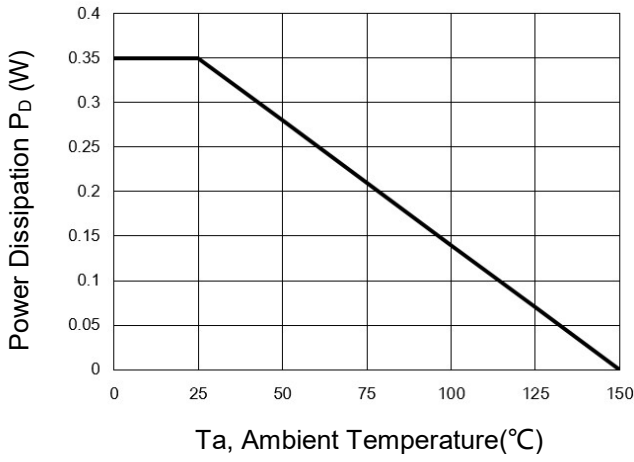


Fig 2. Forward Characteristic Curve

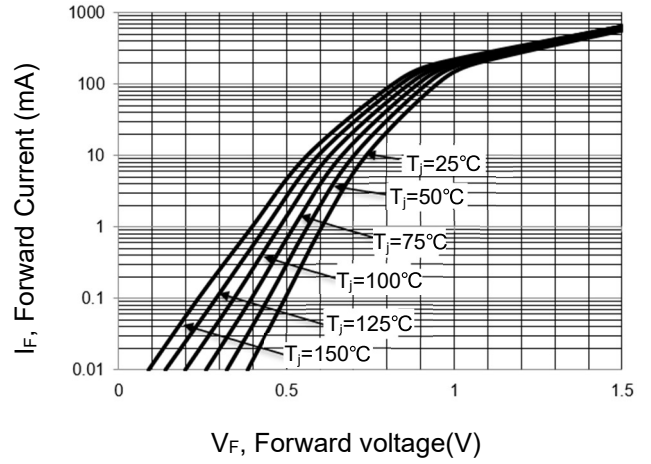


Fig 3. Reverse Characteristic Curve

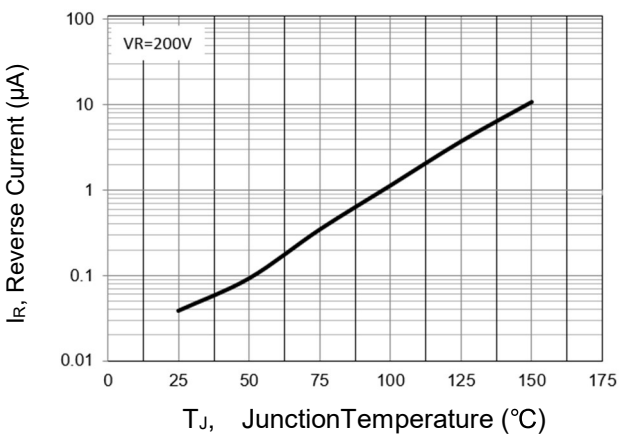
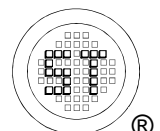
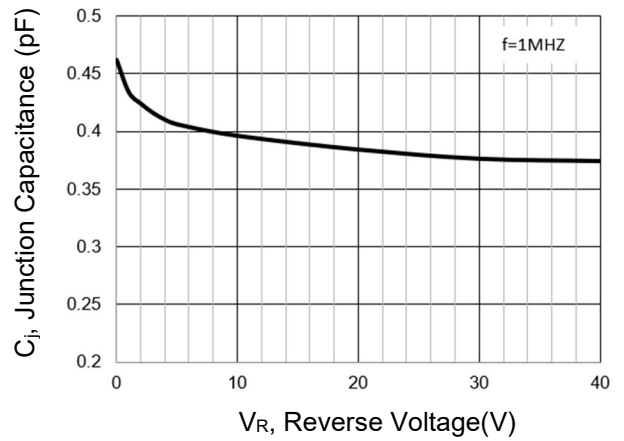


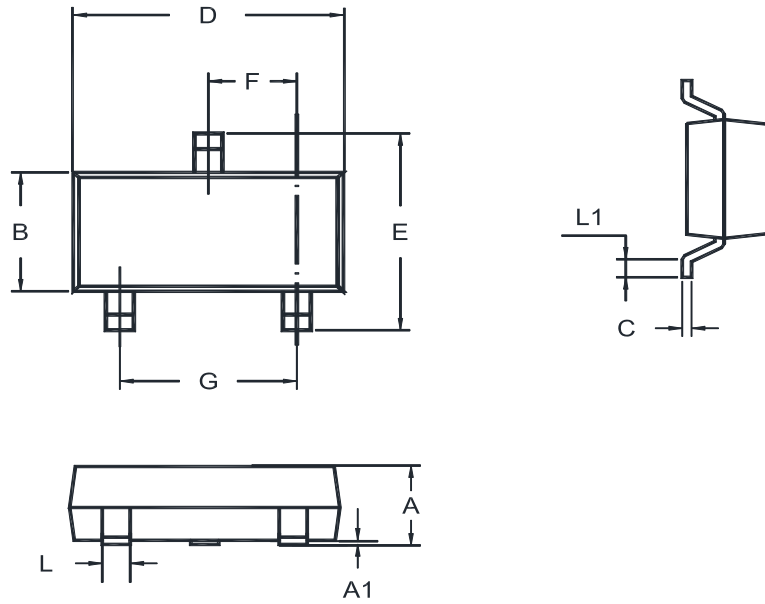
Fig 4. Junction Capacitance



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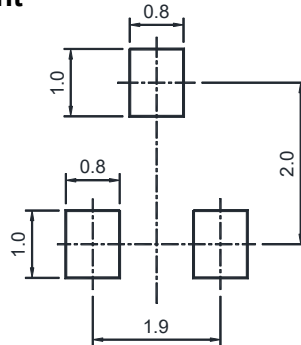
## Package Outline (Dimensions in mm)

SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20	0.100	1.40	0.19	3.04	2.6	1.02	2.04	0.51	0.2
	0.89	0.013	1.20	0.08	2.80	2.2	0.89	1.78	0.37	MIN

## Recommended Soldering Footprint

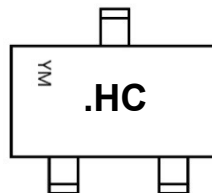


## Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

## Marking information

- " HC " = Part No.
- " • " = HAF (Halogen and Antimony Free)
- " YM " = Date Code Marking
- " Y " = Year
- " M " = Month



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