



# THE DATASHEET OF BAS21-7

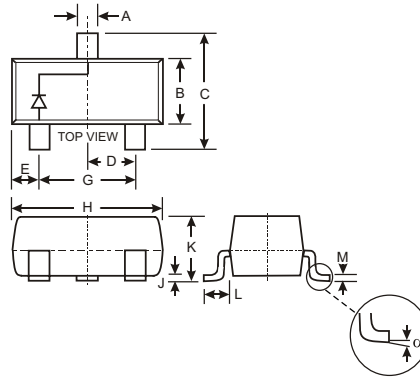


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- Available in Lead Free/RoHS Compliant Version (Note 3)

### Mechanical Data

- Case: SOT-23
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Please See Ordering Information, Note 5, on Page 3
- Polarity: See Diagram
- BAS19 Marking: KA8, KT3, KT2 (See Page 3)
- BAS20 Marking: KT2, KT3 (See Page 3)
- BAS21 Marking: KT3 (See Page 3)
- Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	BAS19	BAS20	BAS21	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	120	200	250	V
Working Peak Reverse Voltage DC Blocking Voltage	$V_{RWM}$ $V_R$	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	71	106	141	V
Forward Continuous Current (Note 1)	$I_{FM}$		400		mA
Average Rectified Output Current (Note 1)	$I_O$		200		mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$ @ $t = 1.0\text{s}$	$I_{FSM}$		2.5 0.5		A
Repetitive Peak Forward Surge Current (Note 1)	$I_{FRM}$		625		mA
Power Dissipation (Note 1)	$P_d$		250		mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$		500		$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$		-65 to +150		$^\circ\text{C}$

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	BAS19 BAS20 BAS21 $V_{(BR)R}$	120 200 250	—	V	$I_R = 100\mu\text{A}$
Forward Voltage (Note 2)	$V_F$	—	1.0 1.25	V	$I_F = 100\text{mA}$ $I_F = 200\text{mA}$
Reverse Current @ Rated DC Blocking Voltage (Note 2)	$I_R$	—	100 15	nA $\mu\text{A}$	$T_j = 25^\circ\text{C}$ $T_j = 100^\circ\text{C}$
Total Capacitance	$C_T$	—	5.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	50	ns	$I_F = I_R = 30\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

- Note:
1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead.

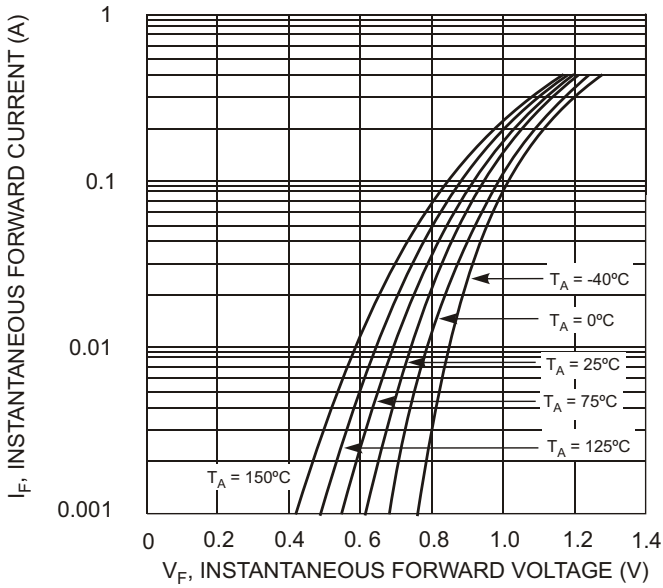


Fig. 1 Typical Forward Characteristics

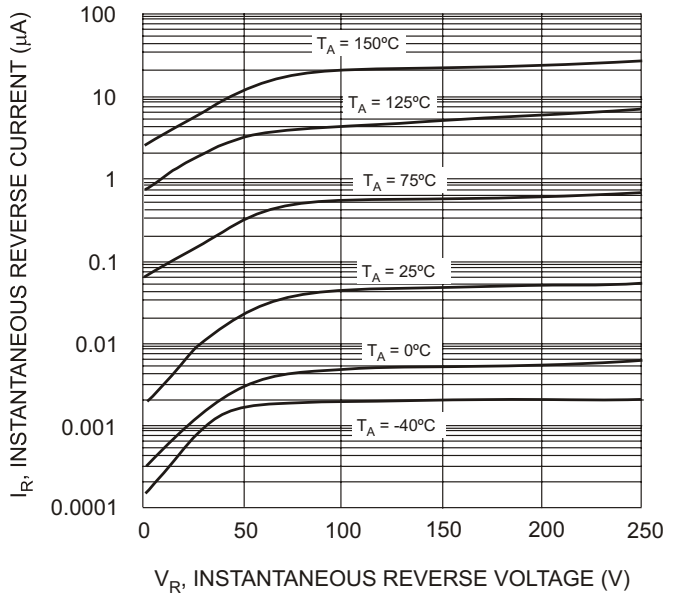


Fig. 2 Typical Reverse Characteristics

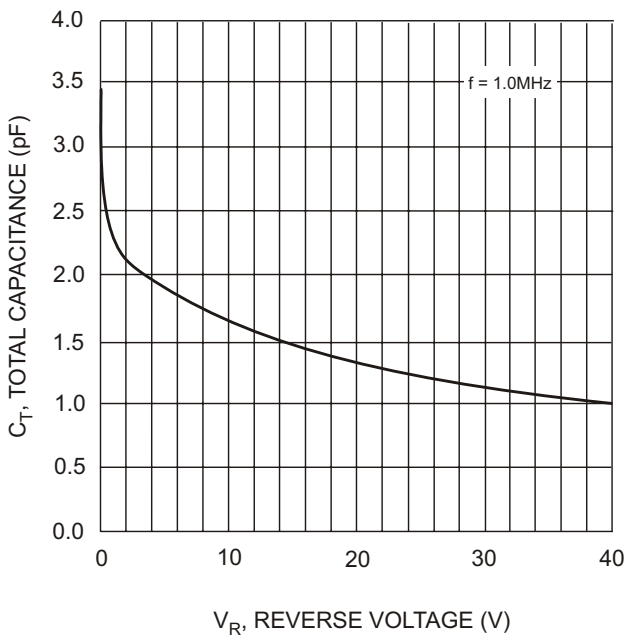


Fig. 3 Typical Capacitance vs. Reverse Voltage

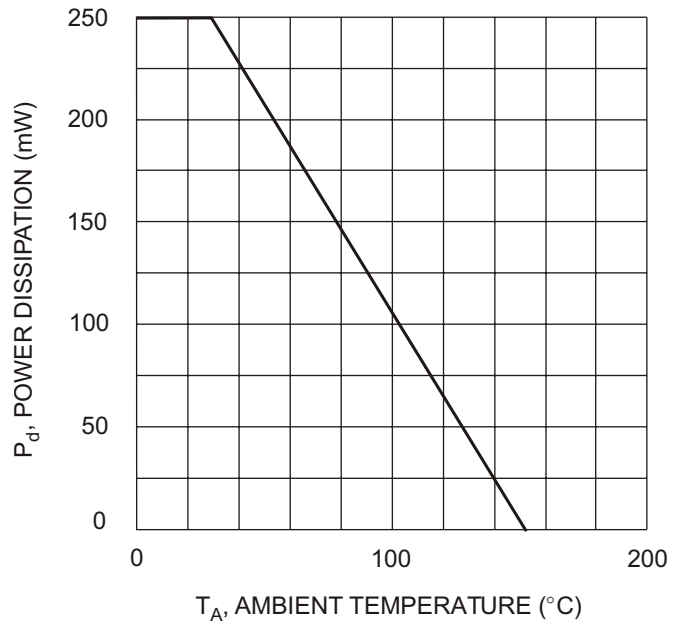


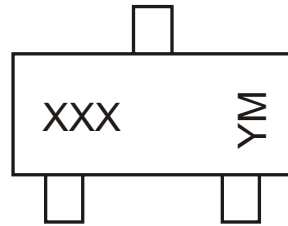
Fig. 4 Power Derating Curve, Total Package

## Ordering Information (Note 4)

Device	Packaging	Shipping
BAS19-7 BAS20-7 BAS21-7	SOT-23	3000/Tape & Reel

- Notes:
- For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  - For Lead Free/RoHS Compliant version part number, please add "-F" suffix to part number above.  
Example: BAS21-7-F.

## Marking Information



XXX = Product Type Marking Code (See Page 1)  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September



### Date Code Key

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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