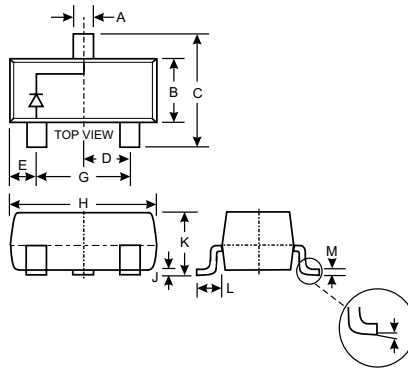


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

### Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Polarity: See Diagram
- BAS19 Marking: KA8, KT3, KT2
- BAS20 Marking: KT2, KT3
- BAS21 Marking: KT3
- 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	0.85	0.80
α	0°	8°
All Dimensions in mm		

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	BAS19	BAS20	BAS21	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	120	200	250	V
Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RWM</sub> V <sub>R</sub>	100	150	200	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	71	106	141	V
Forward Continuous Current	I <sub>FM</sub>		400		mA
Average Rectified Output Current	I <sub>O</sub>		200		mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs @ t = 1.0s	I <sub>FSM</sub>		2.5 0.5		A
Repetitive Peak Forward Surge Current	I <sub>FRM</sub>		625		mA
Power Dissipation (Note 1)	P <sub>d</sub>		250		mW
Thermal Resistance Junction to Ambient Air (Note 1)	R <sub>θJA</sub>		500		°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>		-65 to +150		°C

### Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	BAS19 BAS20 BAS21 V <sub>(BR)R</sub>	—	120 200 250	V	I <sub>R</sub> = 100μA
Forward Voltage (Note 2)	V <sub>FM</sub>	—	1.0 1.25	V	I <sub>F</sub> = 100mA I <sub>F</sub> = 200mA
Reverse Current @ Rated DC Blocking Voltage (Note 2)	I <sub>RM</sub>	—	100 15	nA μA	T <sub>J</sub> = 25°C T <sub>J</sub> = 100°C
Total Capacitance	C <sub>T</sub>	—	5.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	50	ns	I <sub>F</sub> = I <sub>R</sub> = 30mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

- 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.

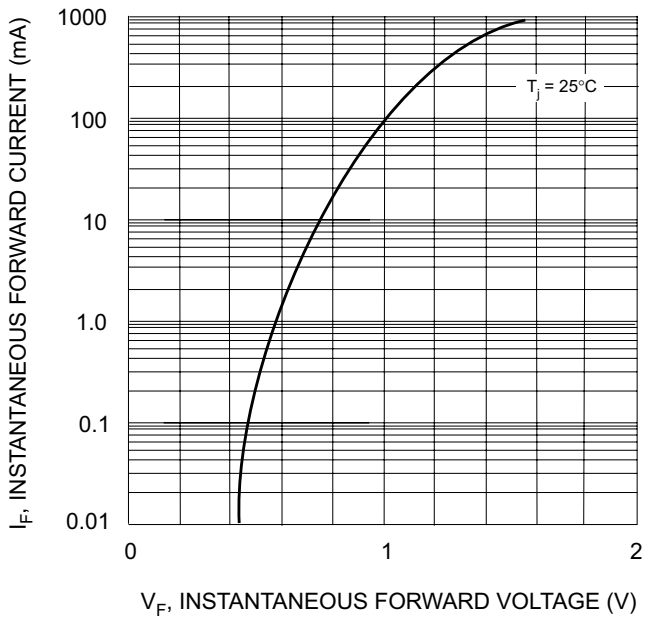


Fig. 1 Forward Characteristics

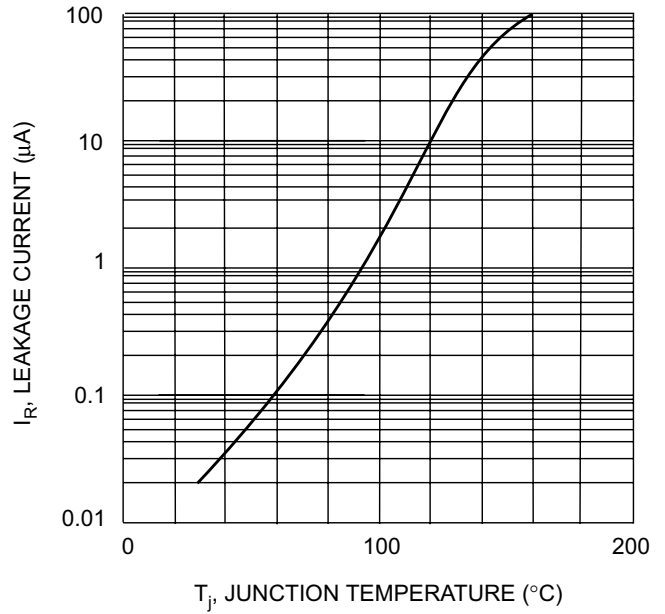


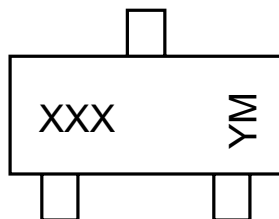
Fig. 2 Leakage Current vs Junction Temperature

## Ordering Information (Note 3)

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

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## 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	1998	1999	2000	2001	2002	2003	2004
Code	J	K	L	M	N	P	R

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