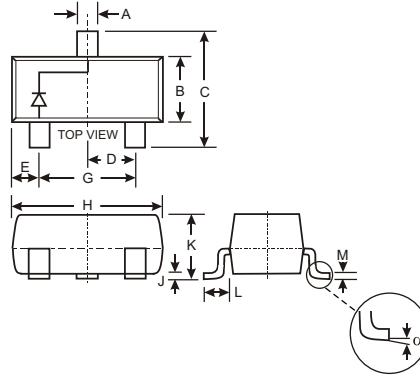


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- Lead Free/RoHS Compliant (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOT-23
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- 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 (approximate)



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
	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 (Note 1)	I <sub>FM</sub>		400		mA
Average Rectified Output Current (Note 1)	I <sub>O</sub>		200		mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0 s @ t = 1.0s	I <sub>FSM</sub>		2.5 0.5		A
Repetitive Peak Forward Surge Current (Note 1)	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>JA</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> = 100 A
Forward Voltage	V <sub>F</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>R</sub>		100 15	nA A	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> = 100

- Note:
- 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>.
  - Short duration pulse test used to minimize self-heating effect.
  - No purposefully added lead.

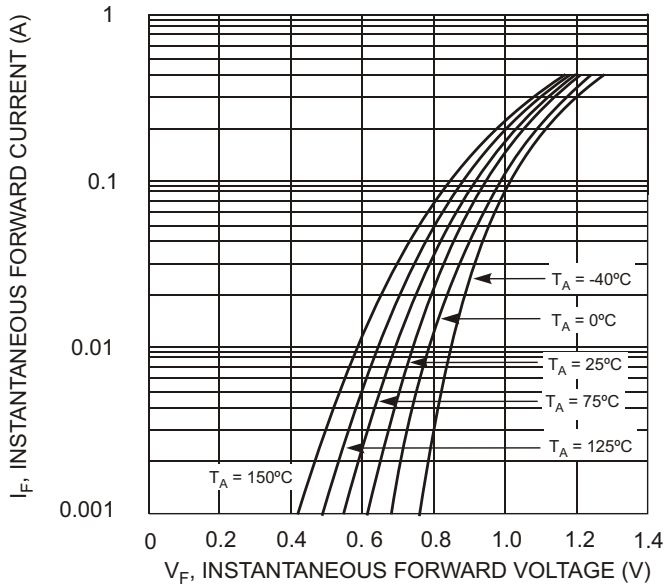


Fig. 1 Typical Forward Characteristics

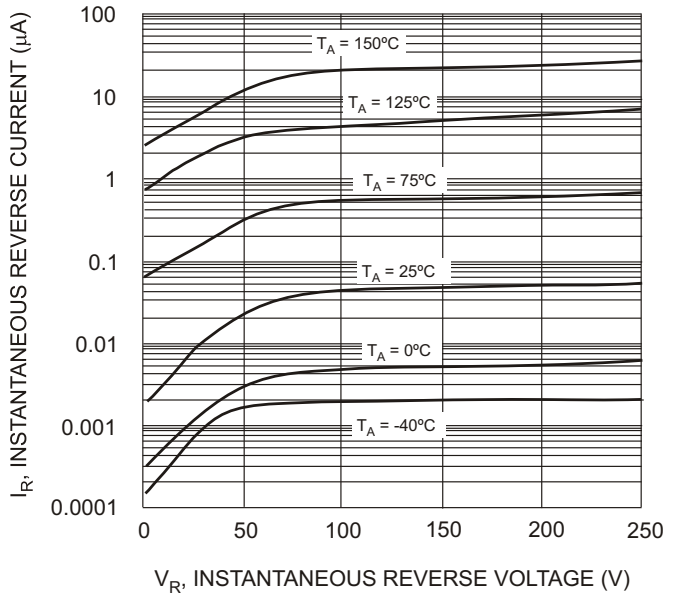


Fig. 2 Typical Reverse Characteristics

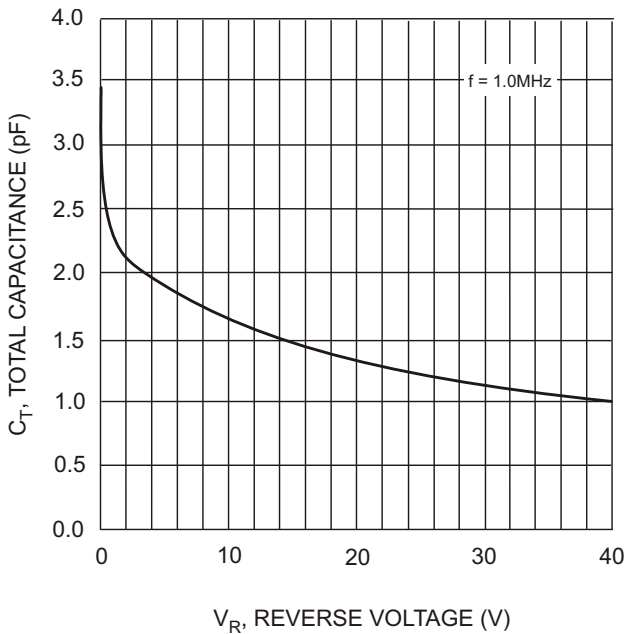


Fig. 3 Typical Capacitance vs. Reverse Voltage

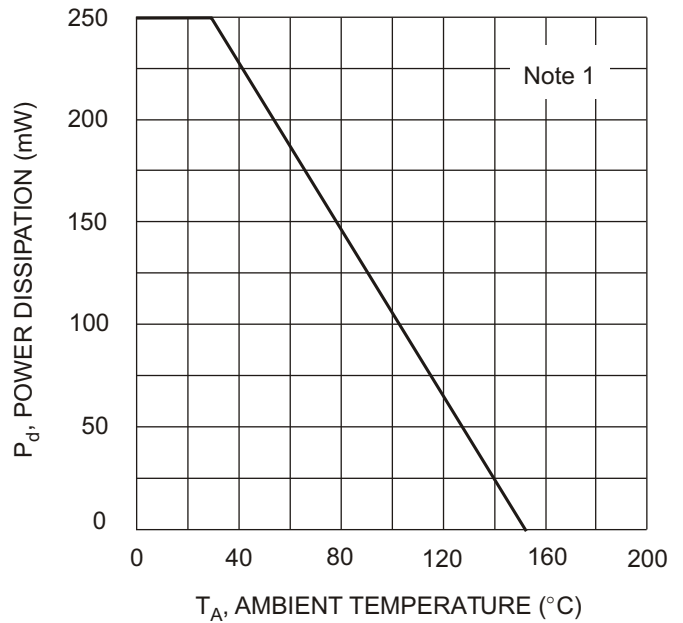


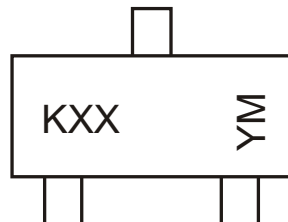
Fig. 4 Power Derating Curve, Total Package

## Ordering Information (Note 4)

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

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



KXX = 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	2010	2011	2012
Code	L	M	N	P	R	S	T	U	V	W	X	Y	Z

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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