



BAS19 / BAS20 / BAS21

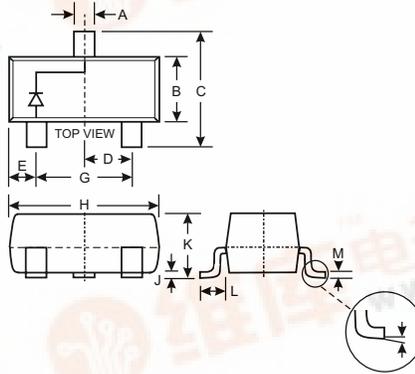
SURFACE MOUNT FAST SWITCHING DIODE

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 @ $T_A = 25^\circ\text{C}$ 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	I_{FM}	400			mA
Average Rectified Output Current	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	I_{FRM}	625			mA
Power Dissipation (Note 1)	P_d	250			mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	500			$^\circ\text{C/W}$
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_{FM}	—	1.0 1.25	V	$I_F = 100\text{mA}$ $I_F = 200\text{mA}$
Reverse Current @ Rated DC Blocking Voltage (Note 2)	I_{RM}	—	100 15	nA μA	$T_j = 25^\circ\text{C}$ $T_j = 100^\circ\text{C}$
Total Capacitance	C_T	—	5.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	50	ns	$I_F = I_R = 30\text{mA}$, $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

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.



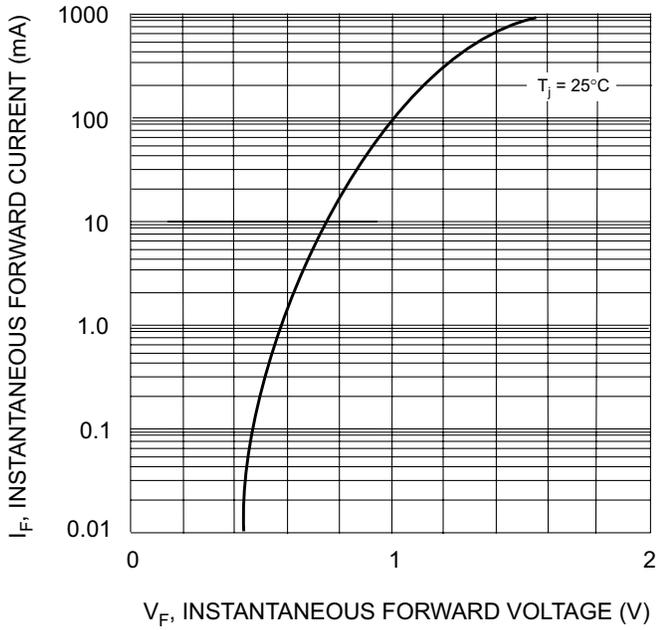


Fig. 1 Forward Characteristics

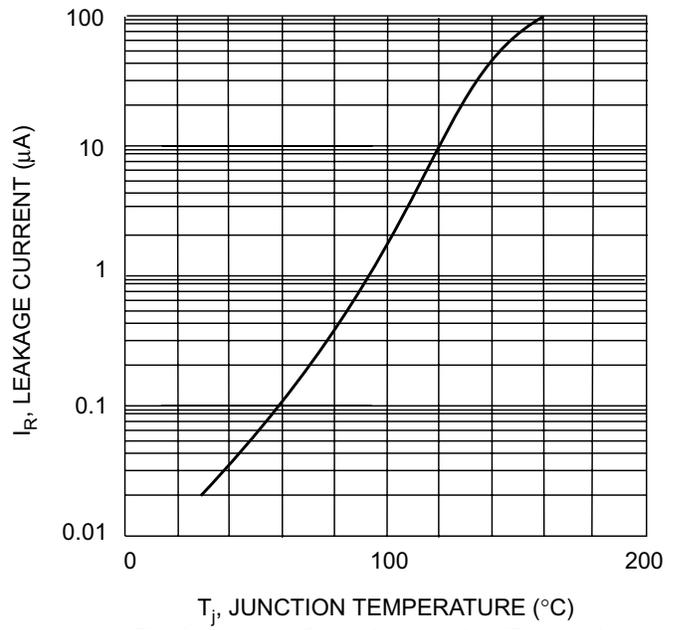


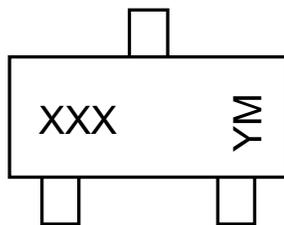
Fig. 2 Leakage Current vs Junction Temperature

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