BAS19 / BAS20 / BAS21

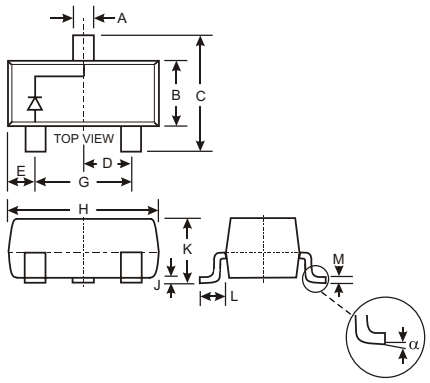
SURFACE MOUNT FAST SWITCHING DIODE

Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance
- **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
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°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 = 1.0μs @ t = 1.0s	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			°C/W
Operating and Storage Temperature Range	T_j , T_{STG}	-65 to +150			°C

Electrical Characteristics @ T_A = 25°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 = 100μA
Forward Voltage (Note 2)		V_F	—	1.0 1.25	V	I_F = 100mA I_F = 200mA
Reverse Current @ Rated DC Blocking Voltage (Note 2)		I_R	—	100 15	nA μA	T_j = 25°C T_j = 100°C
Total Capacitance		C_T	—	5.0	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time		t_{rr}	—	50	ns	$I_F = I_R$ = 30mA, I_{rr} = 0.1 x I_R, R_L = 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.
3. No purposefully added lead.

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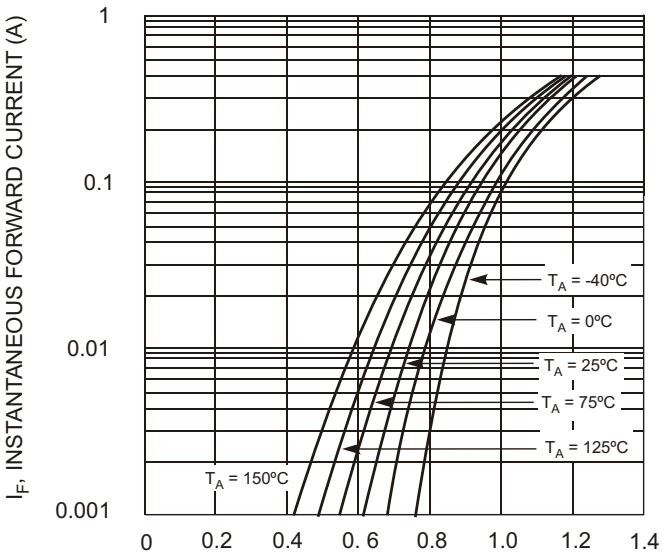


Fig. 1 Typical Forward Characteristics

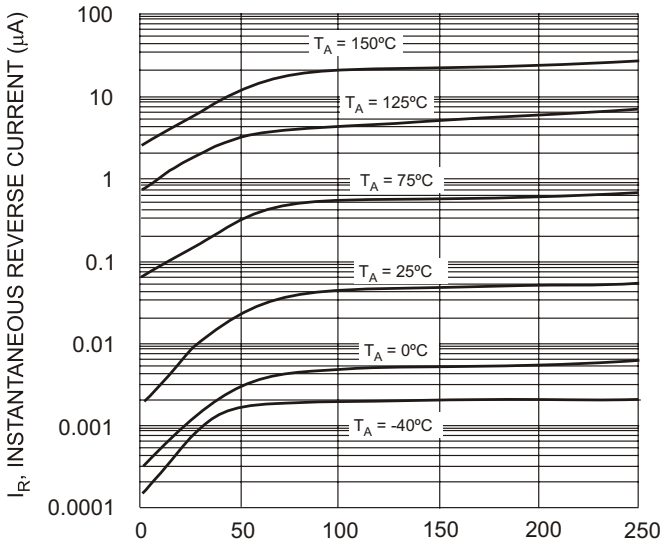


Fig. 2 Typical Reverse Characteristics

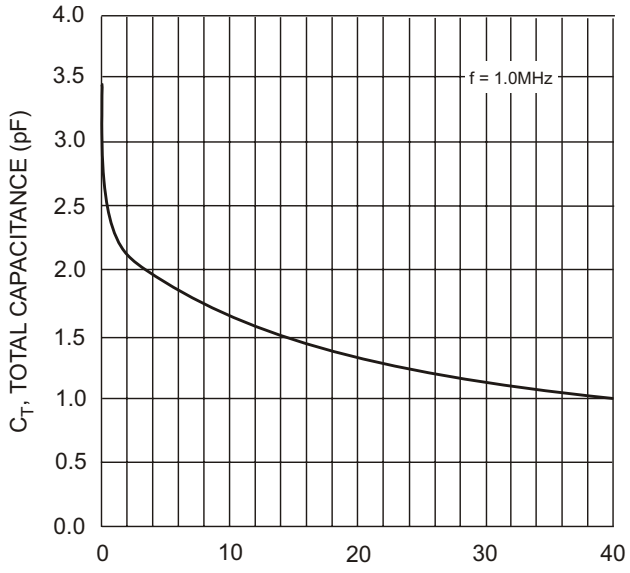


Fig. 3 Typical Capacitance vs. Reverse Voltage

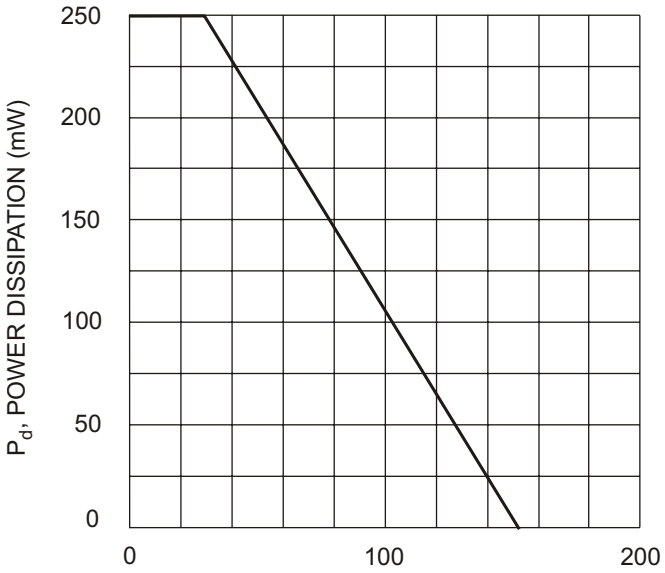


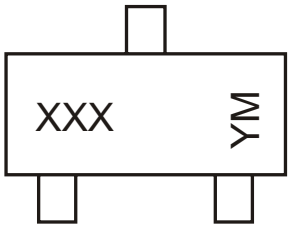
Fig. 4 Power Derating Curve, Total Package

Ordering Information (Note 4)

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

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
5. 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