BAV19W - BAV21W

SURFACE MOUNT SWITCHING DIODE

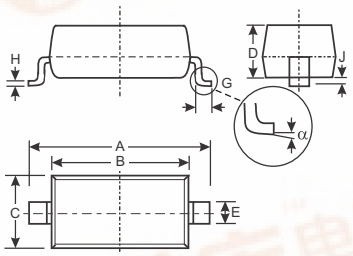
Lead-free

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: SOD-123
- 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: Cathode Band
- Marking: Date Code and Type Code, See Page 2
- Type Code: BAV19W: A8 or T2 or T3
  BAV20W: T2 or T3
  BAV21W: T3
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	**Min**	**Max**
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
α	0°	8°
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	BAV19W	BAV20W	BAV21W	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	120	200	250	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} 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 = 1.0ms @ t = 1.0s	I_{FSM}	2.5 0.5			A
Repetitive Peak Forward Surge Current	I_{FRM}	625			mA
Power Dissipation (Note 2)	P_d	250			mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	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 1) BAV19W BAV20W BAV21W	$V_{(BR)R}$	120 200 250	—	V	I_R = 100mA
Forward Voltage	V_{FM}	—	1.0 1.25	V	I_F = 100mA I_F = 200mA
Peak Reverse Current @ Rated DC Blocking Voltage (Note 1)	I_{RM}	—	100 15	nA mA	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 = 100W

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

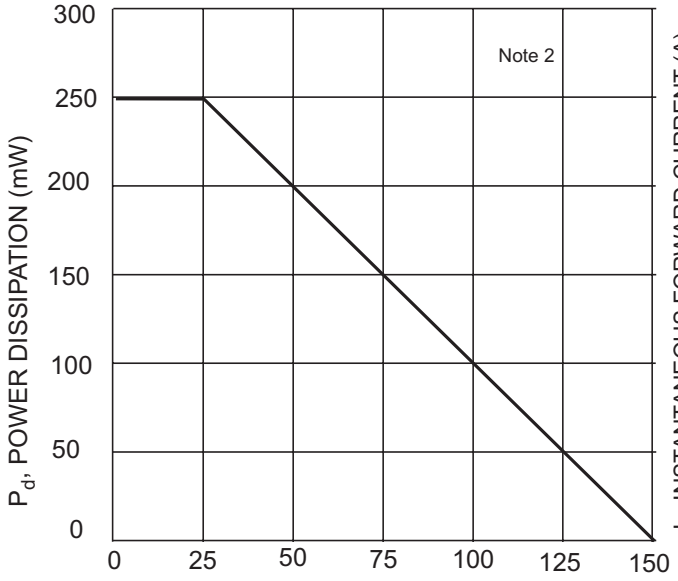


Fig. 1 Power Derating Curve

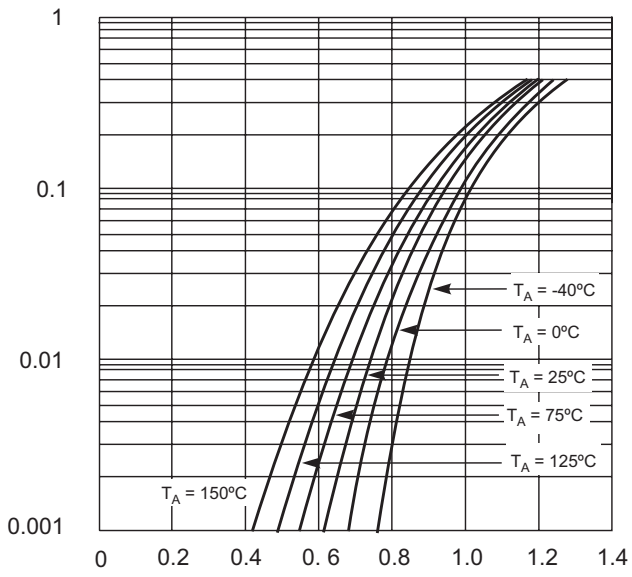


Fig. 2 Typical Forward Characteristics

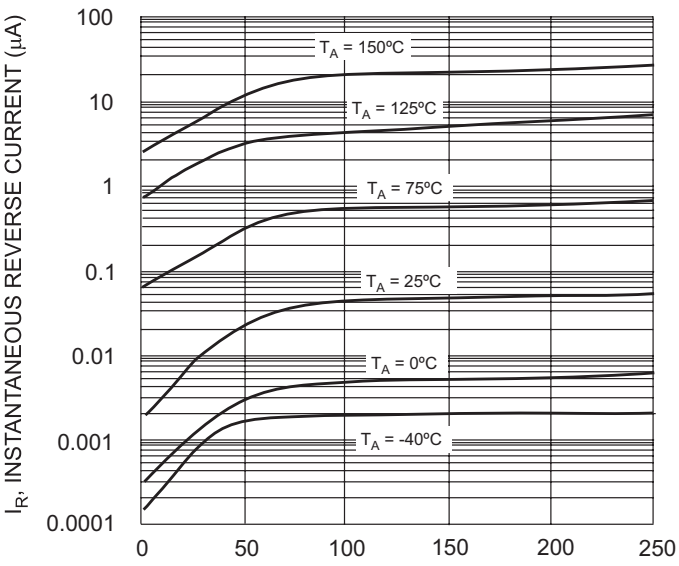


Fig. 3 Typical Reverse Characteristics

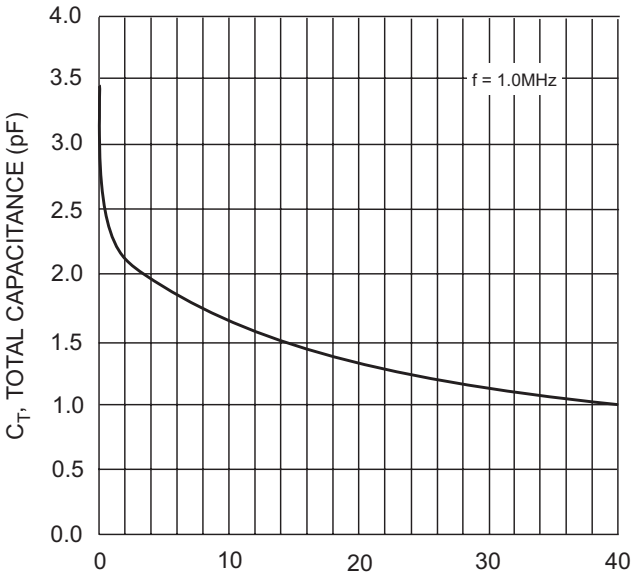


Fig. 4 Typical Capacitance vs. Reverse Voltage

Ordering Information (Note 4)

Device	Packaging	Shipping
BAV19W-7-F	SOD-123	3000/Tape & Reel
BAV20W-7-F	SOD-123	3000/Tape & Reel
BAV21W-7-F	SOD-123	3000/Tape & Reel

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

Marking Information

XX = 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	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

Year	2010	2011	2012
Code	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