



#### SURFACE MOUNT SWITCHING DIODE

### **Features**

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- High Conductance
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)
- 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-020
- Terminals: Solderable per MIL-STD-202, Method 208 Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking Information: See Page 2
- Type Code: BAV19W: A8 or T2 or T3 BAV20W: T2 or T3
  - BAV21W: T3
- Ordering Information: See Page 2
- Weight: 0.01 grams (approximate)

SOD-123



# **Maximum Ratings** $@T_A = 25^{\circ}C$ unless otherwise specified

Characteristic		Symbol	BAV19W	BAV20W	BAV21W	Unit
Non-Repetitive Peak Reverse Voltage		V <sub>RM</sub>	120	200	250	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> 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>			mA		
Average Rectified Output Current	lo	200				
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	2.5 0.5			А	
Repetitive Peak Forward Surge Current	I <sub>FRM</sub>	625			mA	

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	PD	250	mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{ heta JA}$	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 1)	BAV19W BAV20W BAV21W	V <sub>(BR)R</sub>	120 200 250	—	V	I <sub>R</sub> = 100μΑ	
Forward Voltage		V <sub>FM</sub>	_	1.0 1.25	V	I <sub>F</sub> = 100mA I <sub>F</sub> = 200mA	
Peak Reverse Current @ Rated DC Blocking Voltage (Note 1)		I <sub>RM</sub>	_	100 15	nA μA	$T_J = 25^{\circ}C$ $T_J = 100^{\circ}C$	
Total Capacitance		CT		5.0	pF	V <sub>R</sub> = 0, f = 1.0MHz	
Reverse Recovery Time		t <sub>rr</sub>	_	50	ns	$I_F = I_R = 30 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_R, R_L = 100 \text{W}$	

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

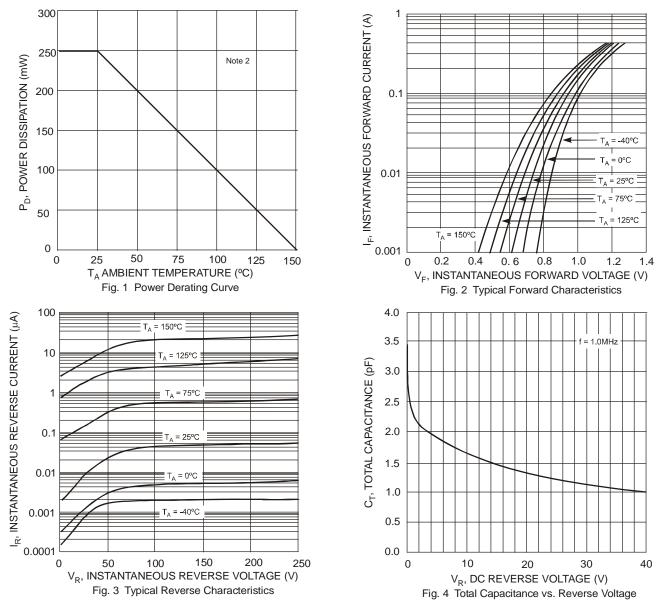
http://www.diodes.com/datasheets/ap02001.pdf.

3. No purposefully added lead. Halogen and Antimony Free.

4. Product manufactured with Data Čode V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.

# BAV19W - BAV21W





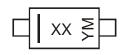
## Ordering Information (Note 5)

Part Number	Case	Packaging
BAV19W-7-F	SOD-123	3000/Tape and Reel
BAV20W-7-F	SOD-123	3000/Tape and Reel
BAV21W-7-F	SOD-123	3000/Tape and Reel

Notes:

5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



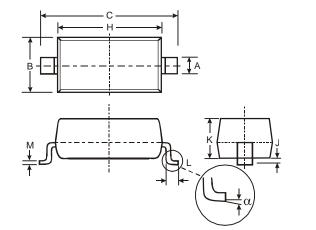
XX = Product Type Marking Code (See Page 1) YM = Date Code Marking Y = Year (ex: N = 2002)

M = Month (ex: 9 = September)

Date Code K	ey														
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Code	J	K	L	Μ	Ν	Р	R	S	Т	U	V	W	Х	Y	Z
Month	Jan	Fe	h	Mar	Apr	May	Ju	n	Jul	Aug	Sep	Oc	t	Nov	Dec
Code	1	2	-	3	4	5	6		7	8	9	0	-	N	D

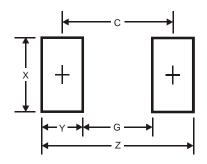


# **Package Outline Dimensions**



SOD-123						
Dim	Min Max					
Α	0.55 Typ					
В	1.40	1.70				
C	3.55 3.85					
Н	2.55 2.85					
J	0.00 0.10					
κ	1.00 1.35					
L	0.25 0.40					
М	0.10 0.15					
α	0 8°					
All Dimensions in mm						

# Suggested Pad Layout



Dimensions	Value (in mm)
Z	4.9
G	2.5
Х	0.7
Y	1.2
С	3.7



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