

## BAV19W-BAV21W SURFACE MOUNT FAST SWITCHING DIODE



### Features

- High Conductance
- Fast Switching
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Schematic & Pin Configuration



### Mechanical Characteristics

- Case: SOD-123, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.01 grams(approx)

### Maximum Ratings@T<sub>A</sub>=25°C unless otherwise specified

Characteristic	Symbol	BAV19W	BAV20W	BAV21W	Units
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	120	200	250	V
Peak Repetitive Peak Reverse Voltage	V <sub>RPM</sub>	100	150	200	V
Working Peak Reverse Voltage	V <sub>RWM</sub>				
DC Blocking Voltage	V <sub>R</sub>				
RMS Reverse Voltage	V <sub>R(RMS)</sub>	71	106	141	
Average Rectified Output Current	I <sub>O</sub>	200			mA
Forward continuous current	I <sub>FM</sub>	400			mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) @t=1.0ms @ t=1.0s	I <sub>FSM</sub>	2.5 0.5			A
Power Dissipation	P <sub>d</sub>	410			mW
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	500			°C/W
Junction Temperature Range	T <sub>J</sub>	150			°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150			°C

**Electrical Characteristics@ $T_A=25^\circ\text{C}$  unless otherwise specified**

Characteristic	Symbol	Test Condition	Min	Typ	Max	Units
Forward Voltage*	$V_F$	$I_F=100\text{mA}$	-	-	1.0	V
Reverse Leakage Current*	$I_R$	$V_R=100\text{V}$ $V_R=150\text{V}$ $V_R=200\text{V}$	-	-	0.1 0.15 0.2	$\mu\text{A}$
Diode capacitance	$C_T$	$V_R=0\text{V}, f=1.0\text{MHz}$	-	-	5	pF
Reverse recovery time	$t_{rr}$	$I_F=I_R=30\text{mA}, I_{rr}=0.1 \times I_R, R_L=100\ \Omega$	-	-	50	ns

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Ratings and Characteristics Curves**

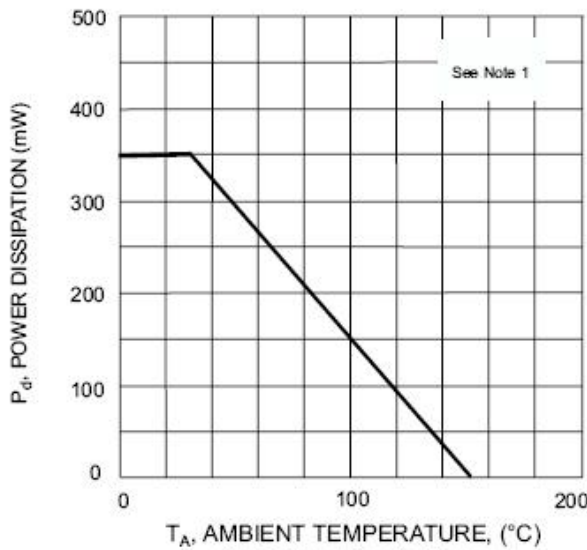


Fig. 1 Power Derating Curve

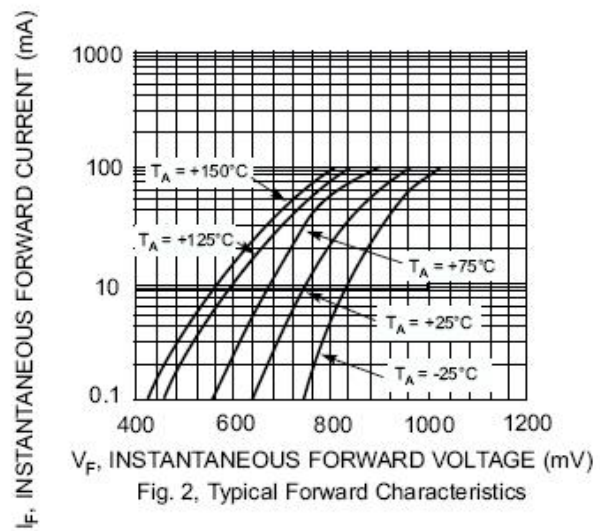


Fig. 2, Typical Forward Characteristics

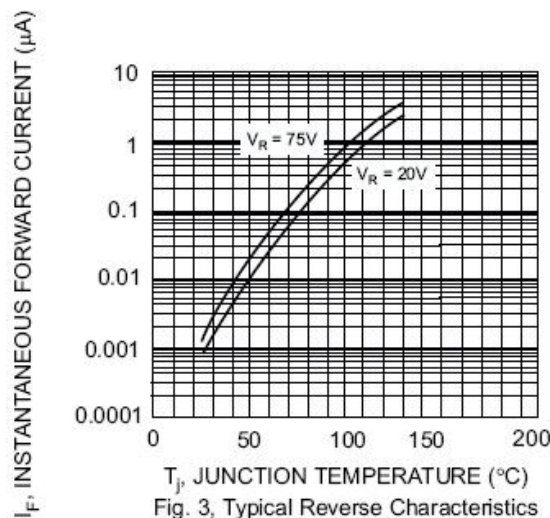


Fig. 3, Typical Reverse Characteristics

**Ordering Information**

Device	Package	Shipping
BAV19W-BAV21W	SOD-123 (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**

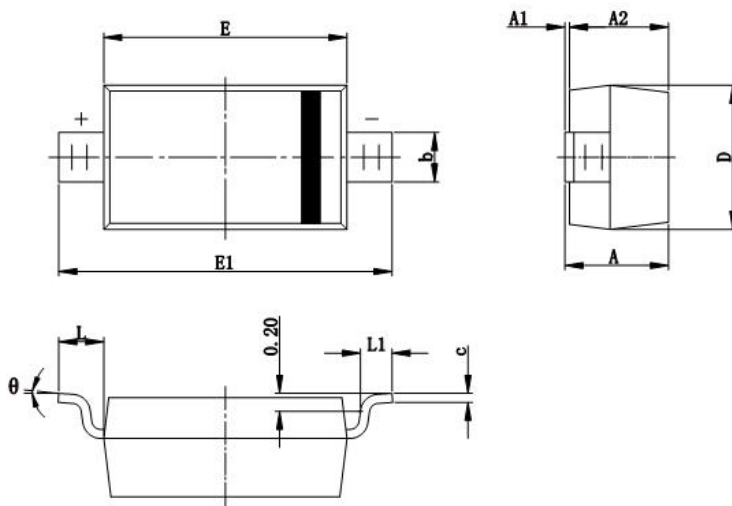
Marking before 16441(Date Code)

Part Number	Device Marking Code
BAV19W	A8
BAV20W	A80
BAV21W	A82

Marking from 16441(Date Code)

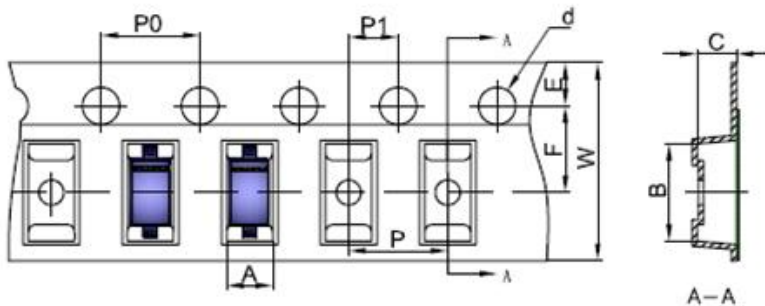
Part Number	Device Marking Code
BAV19W	A8
BAV20W	T2
BAV21W	T3

**Mechanical Dimensions SOD-123**



SYMBOL	Millimeters		Inches	
	MIN.	MAX.	MIN.	MAX.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF.		0.020 REF.	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

**Carrier Tape Specification SOD-123**



SYMBOL	Millimeters	
	Min.	Max.
A	1.80	1.90
B	3.89	3.99
C	1.52	1.62
d	1.45	1.65
E	1.65	1.85
F	3.40	3.60
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
W	7.90	8.30

**DISCLAIMER:**

1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC - Sangdest Microelectronics (Nanjing) Co., Ltd sales department for the latest version of the datasheet(s).

2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

3- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC - Sangdest Microelectronics (Nanjing) Co., Ltd assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.

4- In no event shall SMC - Sangdest Microelectronics (Nanjing) Co., Ltd be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.

5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.

6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC - Sangdest Microelectronics (Nanjing) Co., Ltd.

7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..