

BAV19W THRU BAV21W
HIGH SPEED SWITCHING RECTIFIERS



Voltage: 120~250 Volts

Power: 500 mW

Package: SOD-123

Features

- NH'S High Speed Switching Rectifier Chip Technology
- Fast Switching For High Efficiency
- Small Package
- Low Cost

Mechanical Data

- **Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

Typical Applications

- Small Signal Control Circuit
- Auxiliary Control Circuit
- Switch Mode Power Supplies (SMPS)
- Battery Management System(BMS)

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	BAV 19W	BAV 20W	BAV 21W	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	100	150	200	V
Maximum RMS Voltag		V_{RMS}	70	105	140	V
Maximum Non-Repetitive Peak Reverse Voltage		V_{NRM}	120	200	250	V
Maximum Average Forward Rectified		$I_{F(AV)}$	200			mA
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	4			A
Power Dissipation		P_D	500			mW

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	BAV 19W	BAV 20W	BAV 21W	Unit
Maximum Instaneous Forward Voltage	I _F = 100.0 mA	V _F	1.00			V
	I _F = 200.0 mA		1.25			
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25℃ ,V _R =VRRM	I _{RRM}	0.1			uA
	Ta=100℃ ,V _R =VRRM*80%		100			uA
Typical Junction Capacitance	4 V,1MHz	C _J	5			pF
Maximum Reverse Recovery Time	IF=0.5A, IR=1.0A, IRR=0.25A	Trr	50			nS

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	BAV 19W	BAV 20W	BAV 21W	Unit
Operating Junction Temperature Range		T_J	-55	to	150	°C
Storage Temperature Range		T_{STD}	-55	to	150	
Thermal Resistance Junction-Case With Steady-State	Device Mounted On 1 in2 FR-4 Board With 2oz. Copper	$R_{\theta JA}$	250			°C/W

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Typical Characteristics Curves

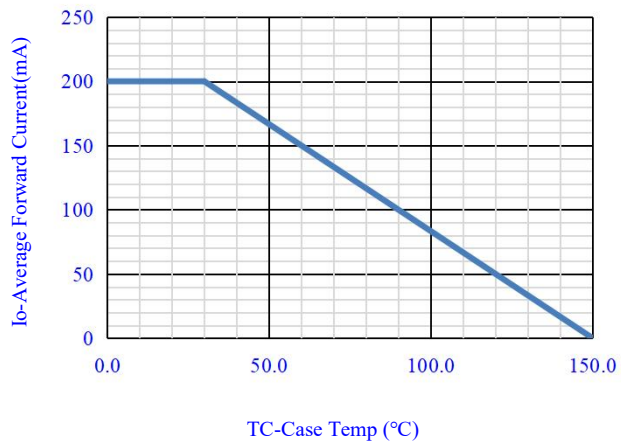


Fig.1-Forward Current Derating Curve

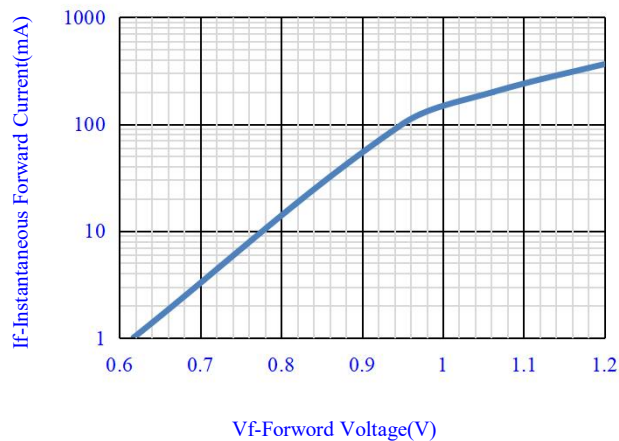


Fig.2-Typical Instantaneous Forward

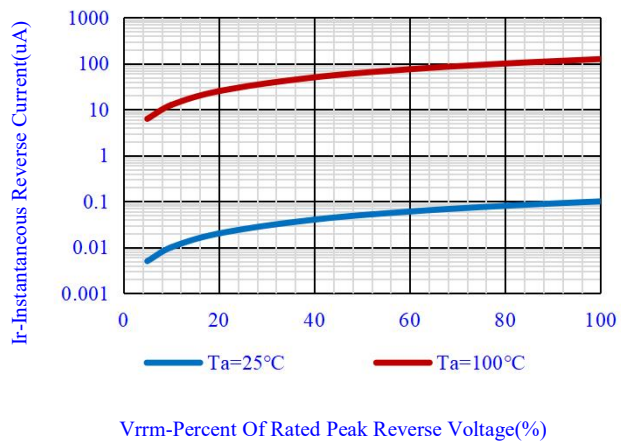


Fig.3-Typical Reverse Characteristics

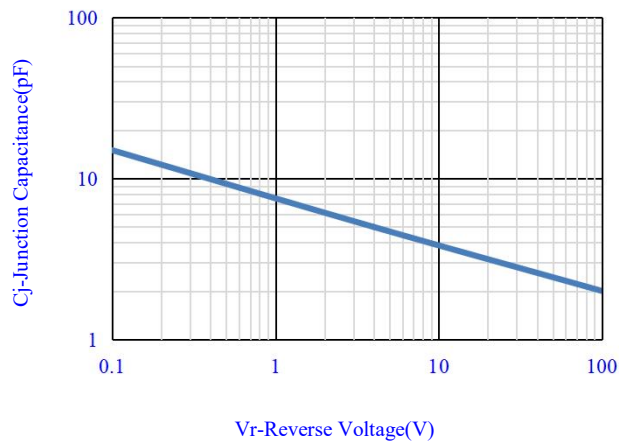


Fig.4- Typical Junction Capacitance



Fig.5-Max. Non-Repetitive Surge Current

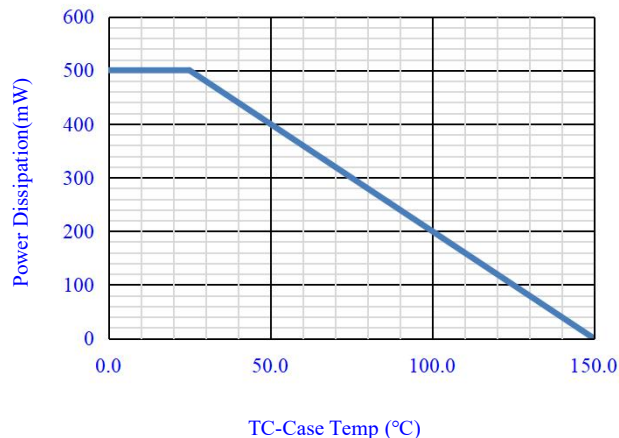
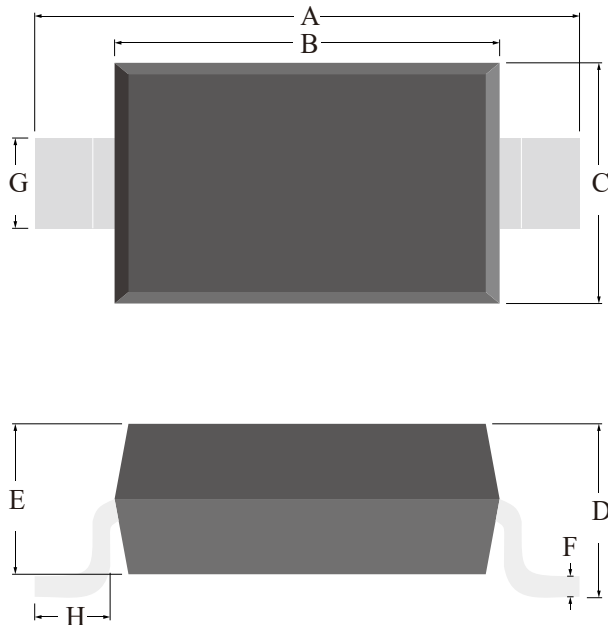


Fig.6-Power Dissipation Vs. Ambient Temp.

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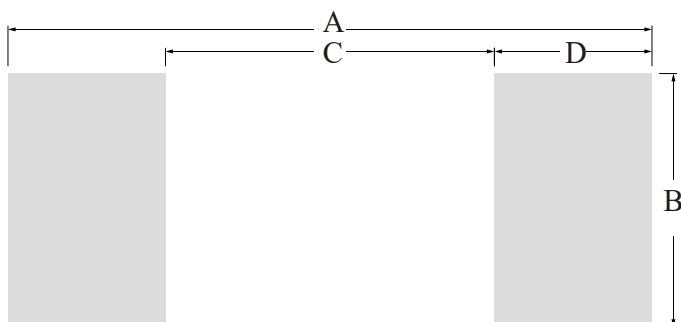
OUTLINE DRAWINGS



SOD-123

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	3.60	-	3.90	0.1417	-	0.1535
B	2.50	-	2.80	0.0984	-	0.1102
C	1.40	-	1.80	0.0551	-	0.0709
D	0.95	-	1.35	0.0374	-	0.0531
E	0.85	-	1.25	0.0335	-	0.0492
F	-	-	0.20	-	-	0.0079
G	0.50	-	0.70	0.0197	-	0.0276
H	0.40	-	-	0.0157	-	-

RECOMMENDED LAYOUT DRAWINGS



SOD-123

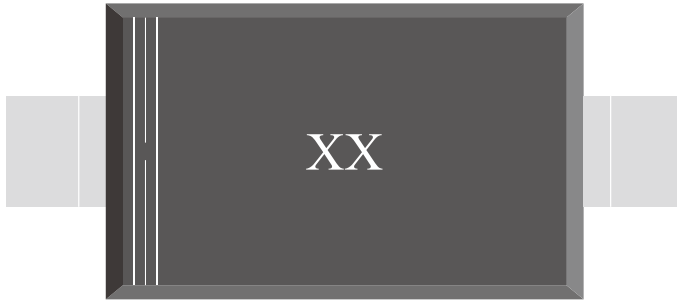
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	0.00	-	-	0.0000	-
B	-	1.22	-	-	0.0480	-
C	-	2.70	-	-	0.1063	-
D	-	0.78	-	-	0.0307	-

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MARKING

MARKING INSTRUCTION



XX=Make,BAV19W=A8,BAV20W=T2,BAV21W=T3
White band denotes cathode

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-123	P1	0.01	Tube	50	1000	5000

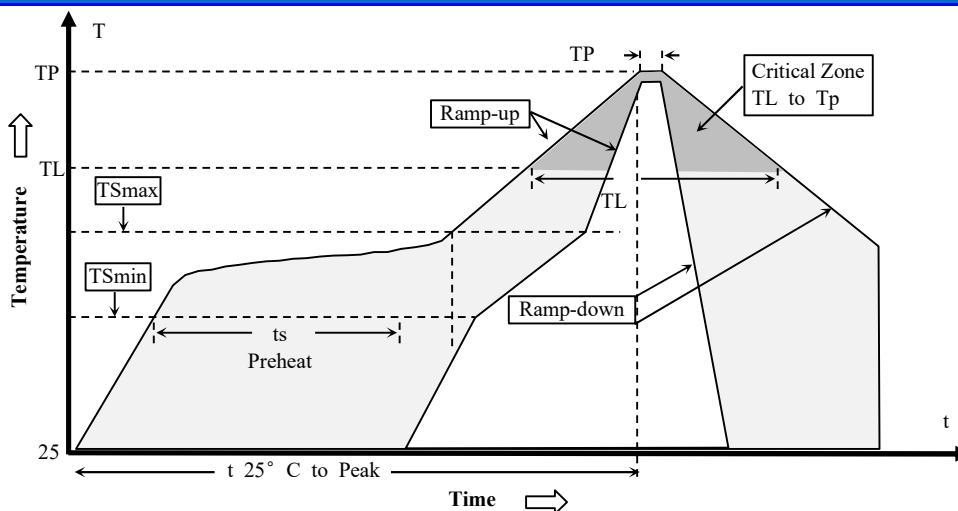
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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