BAV19W THRU BAV21W

HIGH SPEED SWITCHING RECTIFIERS

VOLTAGE: 120~250 Volts **POWER:** 500 mW **SOD-123** Marking and Polarity

FEATURES

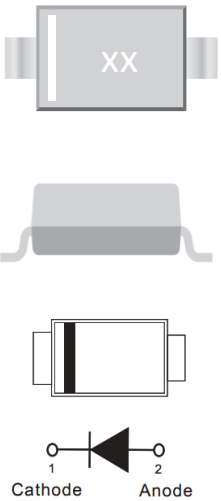
- Fast Switching Device (TRR <50 nS)
- High Stability and High Reliability
- Low reverse leakage

MECHANICAL DATA

- **Package:** SOD-123
- **Epoxy UL:** 94V-0
- **Mounting position:** Any
- **Weight:** App. 0.01 grams（0.0004 ounce)

DEVICE MARKING

Device	Marking
BAV19W	A8
BAV20W	T2
BAV21W	T3



Remark:

①. xx=Modle code,xx=A8,T2,T3

②. White band denotes cathode

Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	500	mW
Average Rectified Output Current	I_{AV}	200	mA
Non-repettive Peak Forward Current	I_{FM}	400	mA
Non-Repetitive Peak Forward Surge Current (@t=1.0us)	I_{FSM}	2.5	A
Operating Temperature Range	T_J	150	℃
Storage temperature range	T_{STG}	-55~+150	℃

Notes: 1.P. C. B mounted with 0.1"*0.1"(2.54 x 2.54 mm) copper Pad Areas

Electrical Characteritic (Rating at 25℃ ambient temperature unle otherwie pecified).

Parameter	Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage	IR=100μA	BAV19W	V_{BR}	120	-	-	V
		BAV20W		200	-	-	
		BAV21W		250	-	-	
Forward Voltage	I_F = 100mA		V_F	-	-	1	V
	I_F = 200mA			-	-	1.25	
Reverse current	V_R= 120V	BAV19W	I_R	-	-	100	nA
	V_R = 200V	BAV20W		-	-	100	nA
	V_R= 250V	BAV21W		-	-	100	nA
Capacitance	V_R = 0V, f = 1MHz		C_T	-	-	5	pF
Reverse Recovery Time	IF=IR=30mA RL=100Ω IRR=3mA		t_{rr}	-	-	50	ns

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RATING AND CHARACTERISTIC CURVES

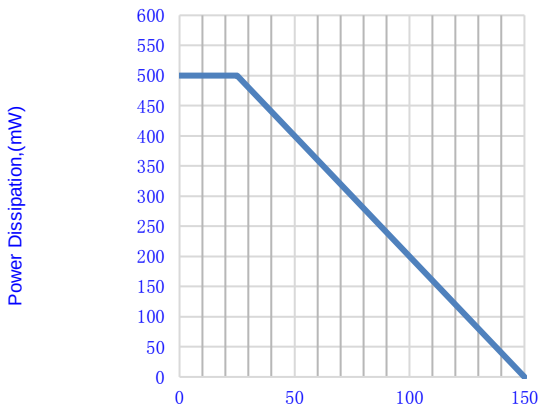

Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

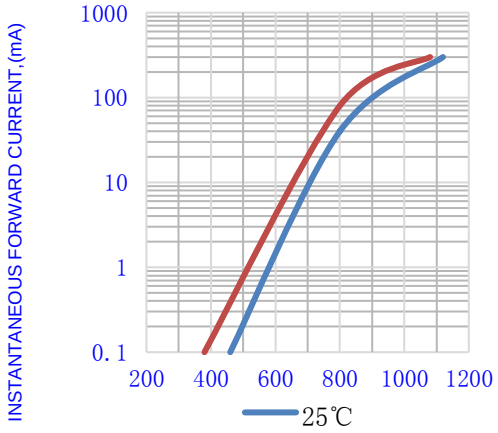

Fig.2- Forward characteristics

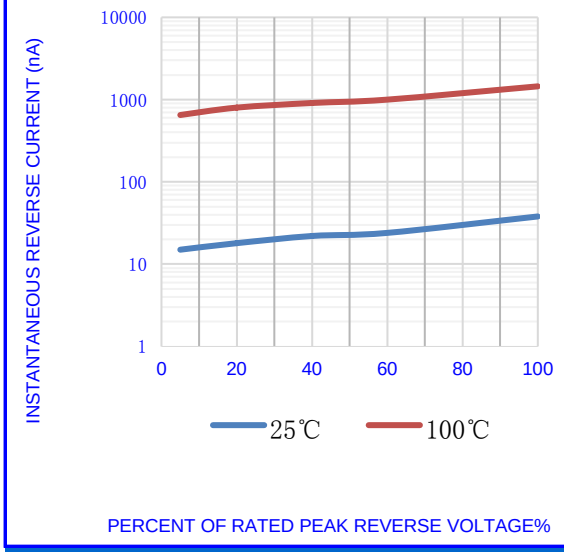

Fig.3- TYPICAL REVERSE CHARACTERISTICS

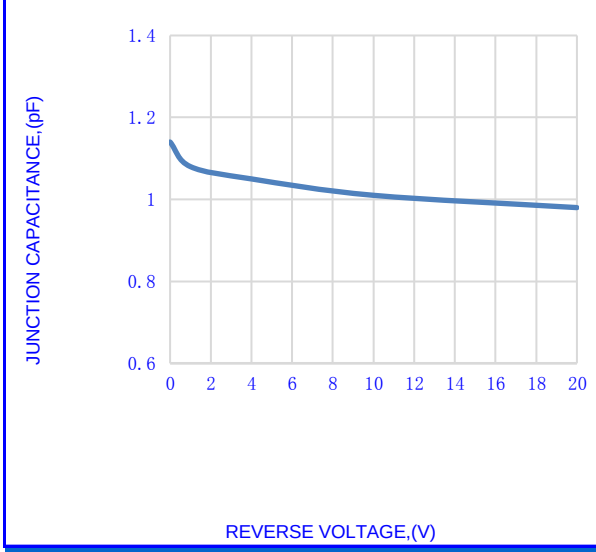

Fig.4- TYPICAL JUNCTION CAPACITANCE

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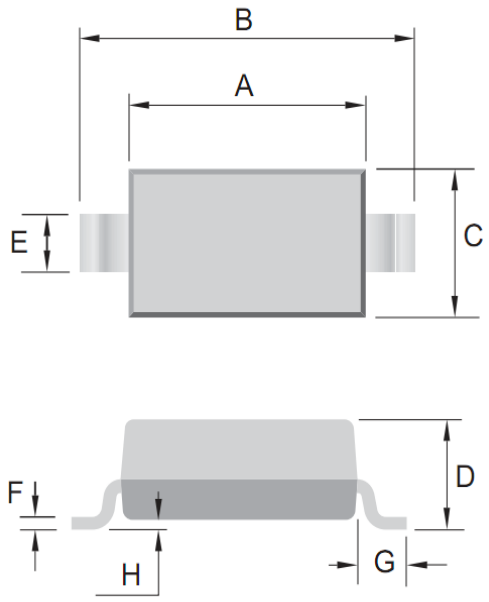
OUTLINE DRAWINGS

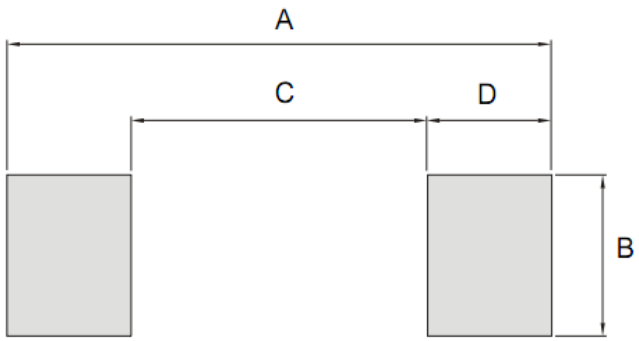
SOD-123



OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.500	-	2.800	0.098	_	0.110
B	3.600	-	3.900	0.142	_	0.154
C	1.400	-	1.800	0.055	_	0.071
D	0.950	-	1.350	0.037	_	0.053
E	0.500	-	0.700	0.020	_	0.028
F	-	-	0.200	_	_	0.008
G	0.400	-	-	0.016	_	-
H	-	-	0.120	_	_	0.005

RECOMMEDNED LAYOUT DRAWINGS

SOD-123



RECOMMEDNED MOUNTING PAD DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	--	4.250	--	--	0.167	--
B	--	1.220	--	--	0.048	--
C	--	2.700	--	--	0.106	--
D	--	0.780	--	--	0.031	--

PACKING INFORMATION

SOD-123

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Carton Size L×W×H(mm)	Quantity (pcs/carton)
Tape Reel	Φ180	3000	210×210×203	45000	455×455×240	180000

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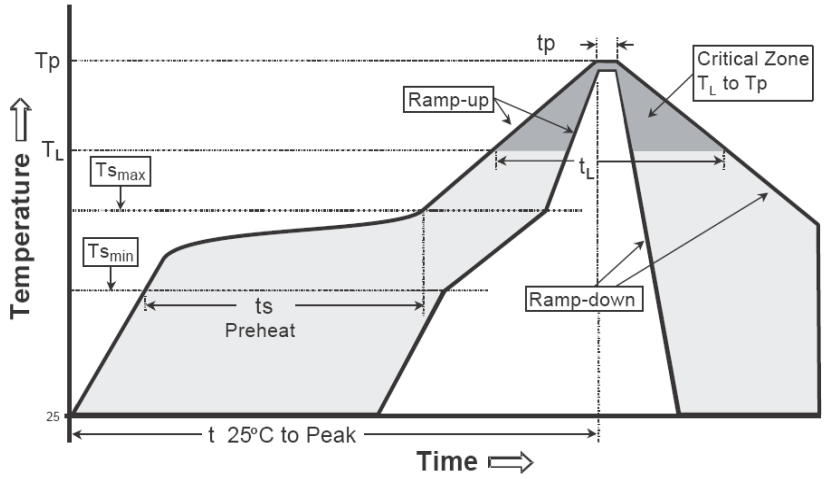
Recommended wave soldering condition

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 (Tsmax to Tp)	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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