

FEATURES

- Low Reverse Current
- Surface Mount Package Ideally Suited for Automatic Insertion
- Fast Switching Speed
- For General Purpose Switching Applications
- Meet AEC-Q101 Requirements



SOD-123



Schematic Symbol

MECHANICAL DATA

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	BAV19WQ	BAV20WQ	BAV21WQ	Unit
Marking		A8	T2	T3	
Non-Repetitive Peak Reverse Voltage	V_{RM}	120	200	250	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	150	200	V
Working Peak Reverse Voltage	V_{RWM}	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	71	106	141	V
Power Dissipation	P_D	250			mW
Average Rectified Output Current	I_O	200			mA
Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	I_{FSM}	2.0			A
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	500			$^{\circ}\text{C/W}$
Junction Temperature	T_J	150			$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150			$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$)

Parameter		Test Condition	Symbol	Min.	Max.	Unit
Reverse current	BAV19WQ	$V_R = 100V$	I_R		0.1	μA
	BAV20WQ	$V_R = 150V$			0.1	μA
	BAV21WQ	$V_R = 200V$			0.1	μA
Forward voltage		$I_F = 100mA$	V_F		1	V
		$I_F = 200mA$			1.25	V
Total capacitance		$V_R = 0V, f=1MHz$	C_{tot}		5	pF
Reverse recovery time		$I_F = I_R = 30mA, I_{rr} = 0.1I_R, R_L = 100\Omega$	t_{rr}		50	ns

CHARACTERISTIC CURVES

Fig 1. Forward Characteristics

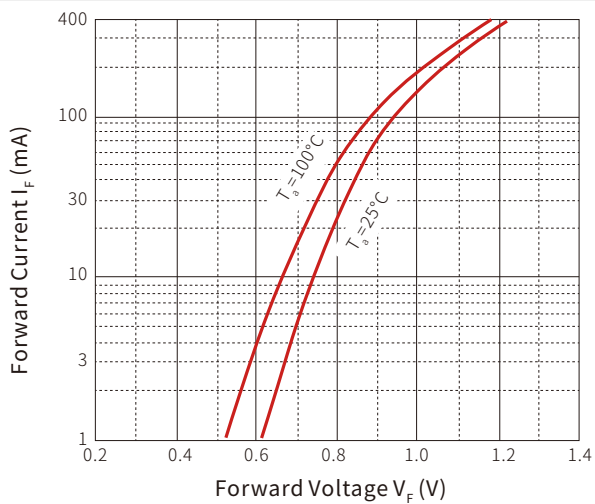


Fig 2. Reverse Characteristics

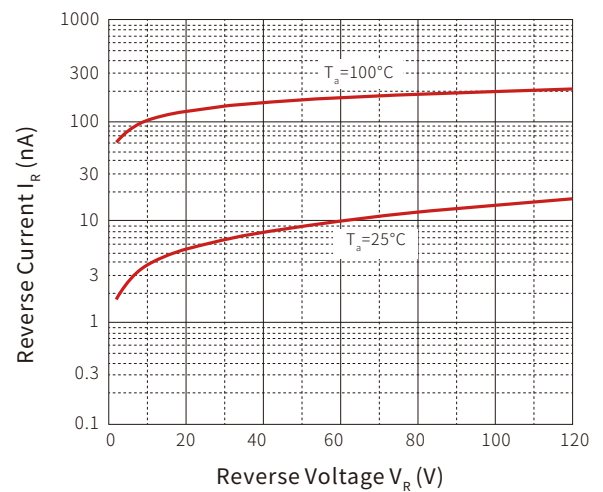




Fig 3. Capacitance Characteristics

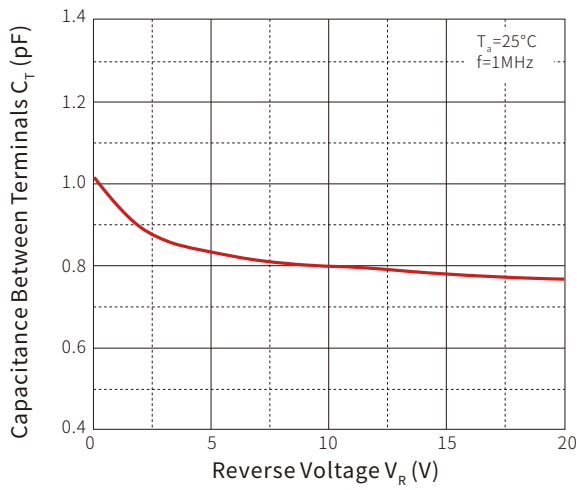
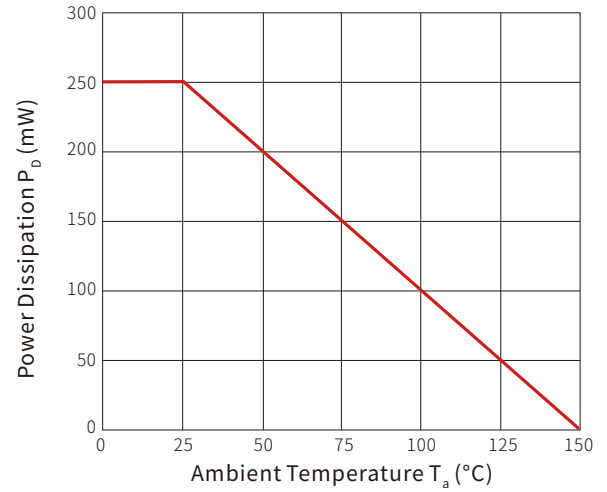
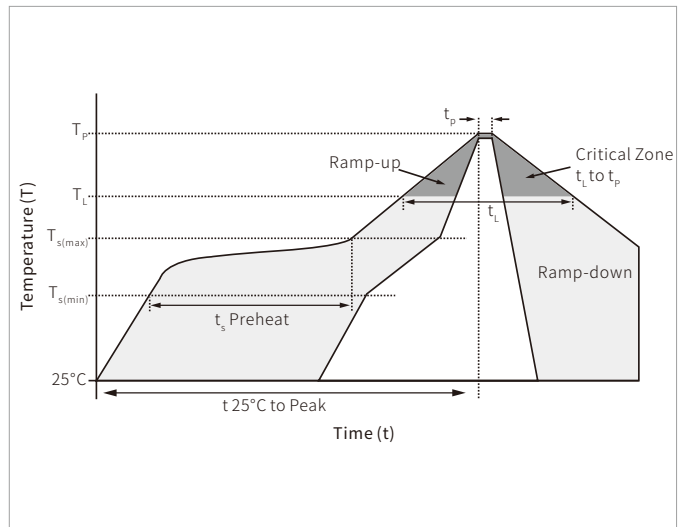


Fig 4. Power Derating Curve

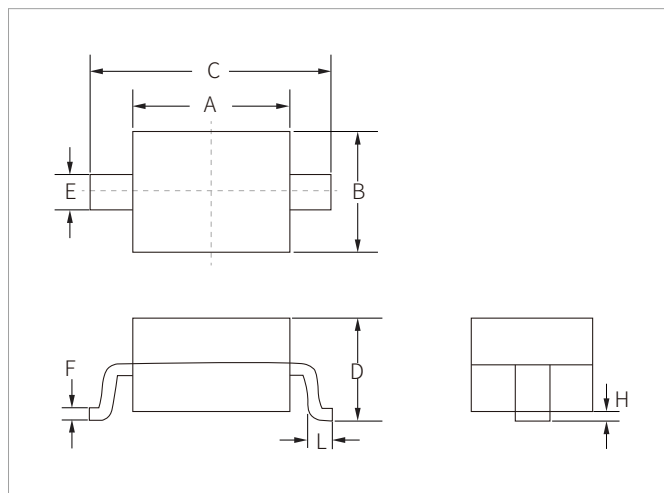


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\min)}$)	150°C
	Temperature Max ($T_{s(\max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(\max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

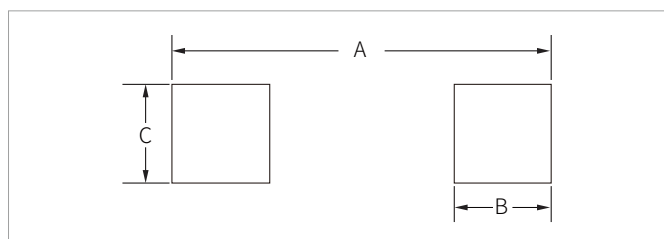


SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	0.95	1.25	0.037	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAV19WQ-BAV21WQ	SOD-123	3000PCS	7"

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