

## FEATURES

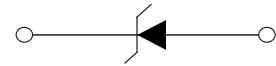
- | High Current Capability
- | Low Forward Voltage Drop



SOD-123

## MECHANICAL DATA

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



Schematic Symbol

## APPROVALS

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

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

Parameter	Symbol	B5817W	B5818W	B5819W	Unit
Marking		SJ	SK	SL	
Peak Repetitive Reverse Voltage	$V_{RRM}$	20	30	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	V
Maximum DC Blocking Voltage	$V_{DC}$	20	30	40	V
Maximum Average Forward Rectified Current	$I_{FM}$	1.0			A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave	$I_{FSM}$	25			A
Power Dissipation	$P_D$	500			mW
Typical Thermal Resistance	$R_{\theta JA}$	250			$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	$T_J$	125			$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-50-+150			$^{\circ}\text{C}$

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

Parameter		Symbol	Test Conditions	B5817W	B5818W	B5819W	Unit
Maximum Forward Voltage		$V_F$	$I_F=1.0\text{A}$	0.450	0.550	0.600	V
			$I_F=3.0\text{A}$	0.750	0.875	0.900	V
Reverse Breakdown Voltage		$V_R$	$I_R=1\text{mA}$	20	30	40	V
Reverse Leakage Current	B5817W	$I_R$	$V_R=20\text{V}$	1.0			mA
	B5818W		$V_R=30\text{V}$	1.0			mA
	B5819W		$V_R=40\text{V}$	1.0			mA
Type Junction Capacitance		$C_j$	$V_R=4.0\text{V}, f=1\text{MHz}$	120			pF

## CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

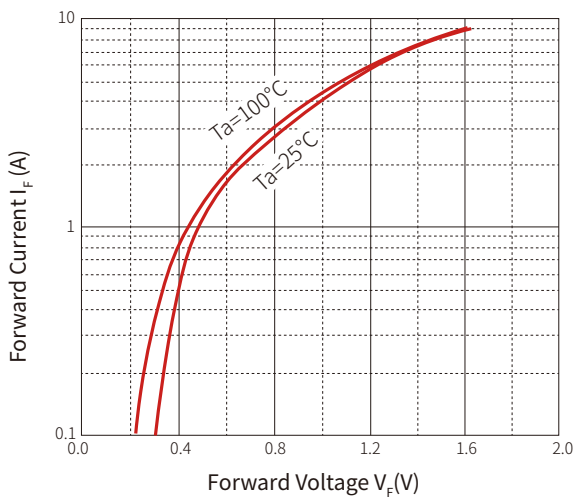
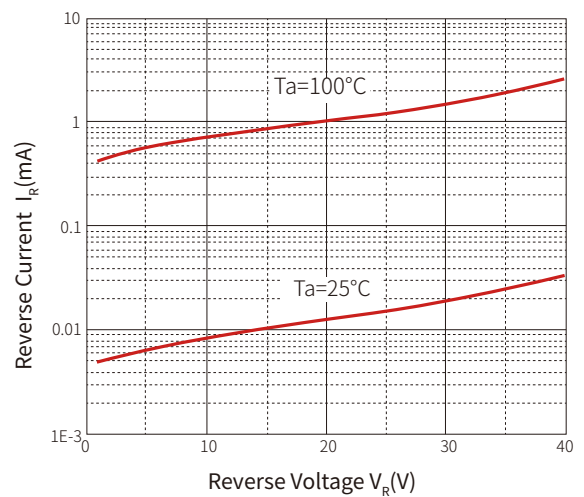
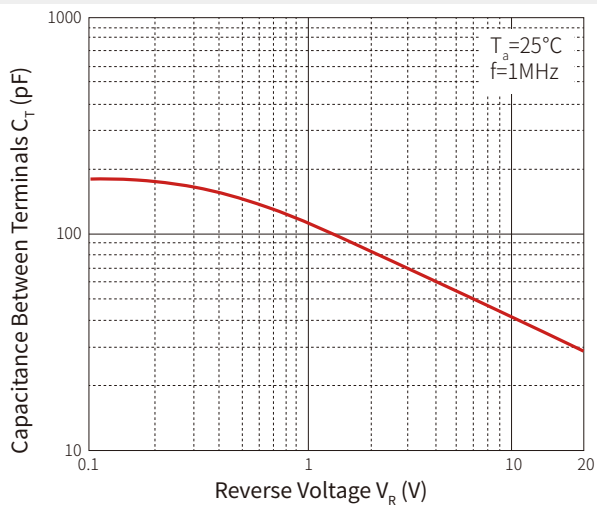
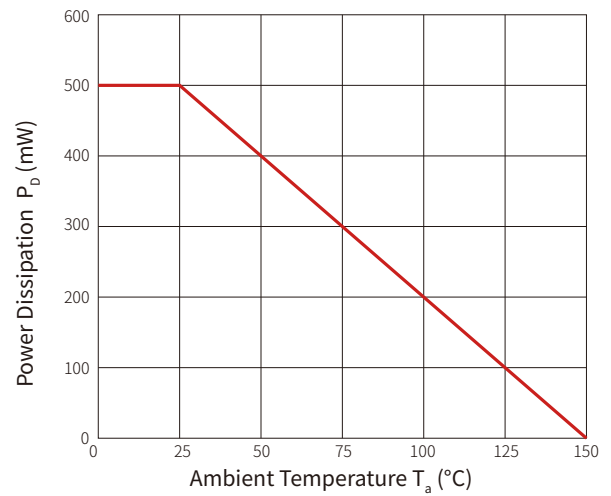


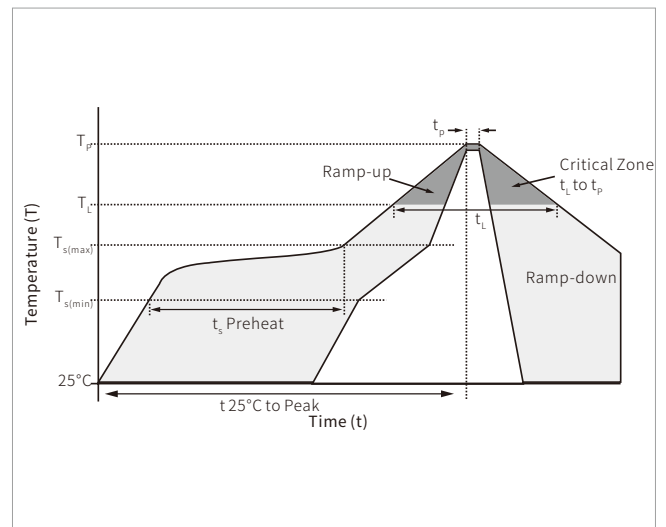
Fig.2 Reverse Characteristics



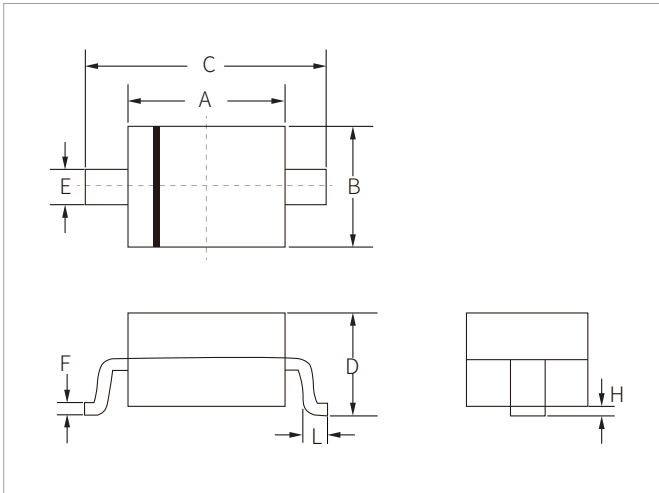
**Fig.3 Capacitance Characteristics**

**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

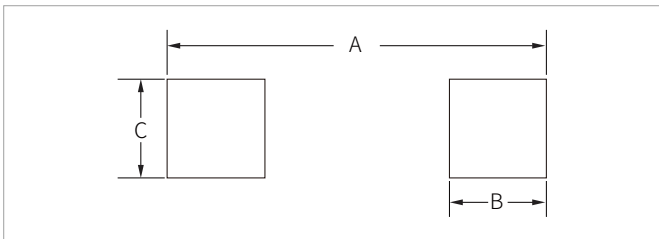


## SOD-123 PACKAGE INFORMATION



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	1.05	1.25	0.041	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	4.00	4.30	0.157	0.169
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
B5817W-B5819W	SOD-123	3000PCS	7"

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