

B5817W THRU B5819W

SCHOTTKY RECTIFIERS



VOLTAGE: 20-40 Volts

CURRENT: 1.0 Amperes

SOD-123

Marking and Polarity

FEATURES

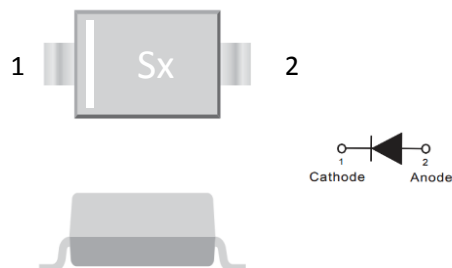
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

MECHANICAL DATA

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant

TYPICAL APPLICATIONS

- For use in high frequency inverters ,
DC/DC converters,LED driver etc. applications



Remark:

①. Sx=Module code,Sx=J,K,L

SJ=B5817W,SK=B5818W,SL=B5819W

②. White band denotes cathode

Maximum Ratings(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	B5817W	B5818W	B5819W	A
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum RMS voltage	V_{RMS}	14	21	28	V
Maximum DC blocking voltage	V_{DC}	20	30	40	V
Maximum average forward rectified current(see fig.1)	$I_F (AV)$	1.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	9			A
Current Squared Time Per Diode($t < 8.3ms$)	I^2t	0.34			A ² sec

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Test Conditions		Symbol	B5817W	B5818W	B5819W	Unit
Maximum Forward Voltage(Note 1)	Ta=25°C	IF= 1.0 A	V_F	0.45	0.55	0.6	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25°C	VR= V_{RRM}	I_{RRM}	1			mA
Typical junction capacitance	4V,1MHz		C_J	120			pF

Thermal Characteristcs (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	B5817W	B5818W	B5819W	Unit
Operating junction and Storage temperature range	T_J	-65 to 150			℃
Storage temperature range	T_{STG}	-65 to 150			
Typical thermal resistance (Note 2)	$R_{\theta JA}$	35			℃/W
	$R_{\theta JC}$	8			

Note: 1.Pulse width < 300 uS, Duty cycle < 2%

2.Mounted on P.C.B. with 0.2" x 0.2" (5.08 mm x 5.08 mm) copper pad areas

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RATING AND CHARACTERISTIC CURVES

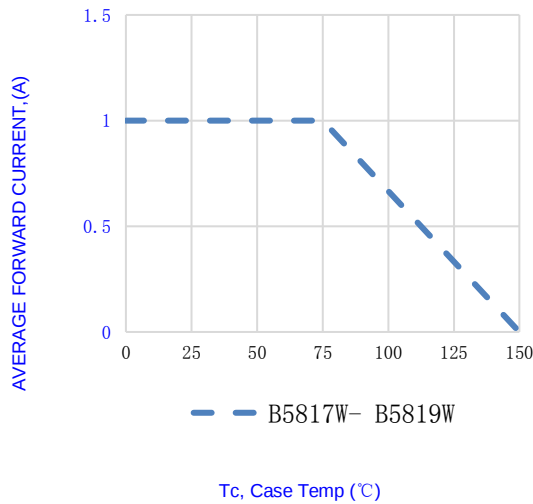


Fig.1-FORWARD CURRENT DERATING CURVE

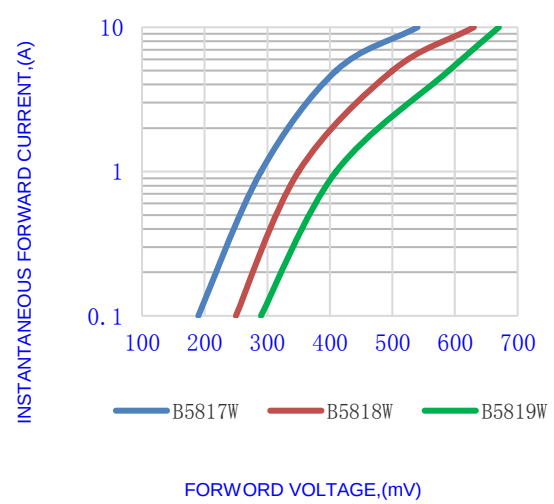


Fig.2- TYPICAL INSTANTANEOUS FORWARD

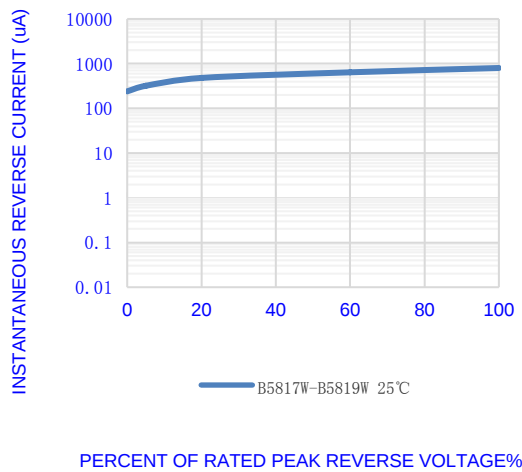


Fig.3- TYPICAL REVERSE CHARACTERISTICS

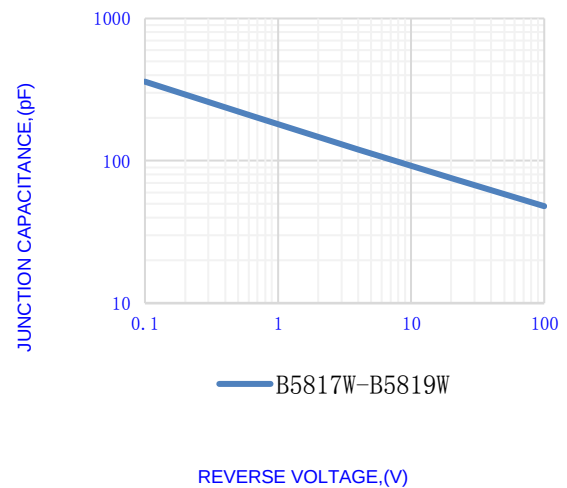


Fig.4-TYPICAL JUNCTION CAPACITANCE

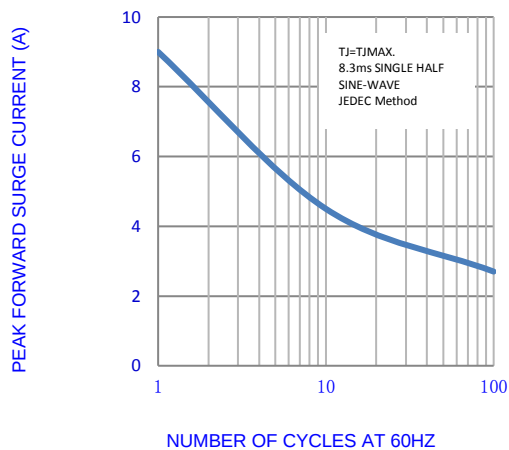


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

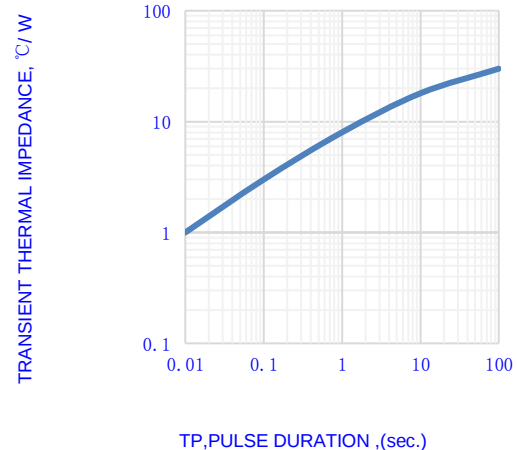


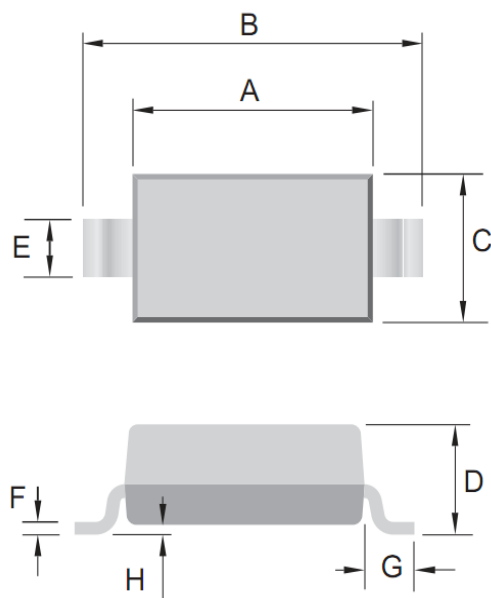
FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

B5817W THRU B5819W

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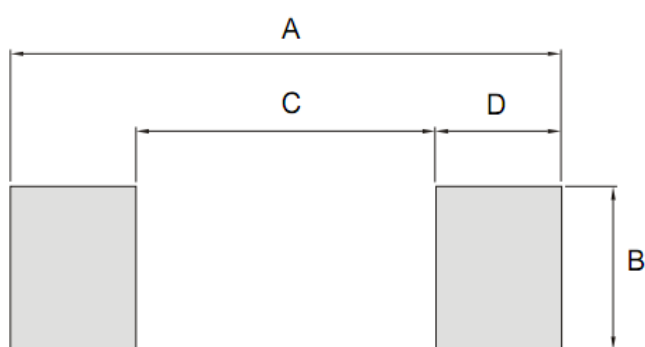
OUTLINE DRAWINGS



SOD-123

OUTLINE DIMENSIONS						
Dim.	Millimeters			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

RECOMMENDED LAYOUT DRAWINGS



SOD-123

RECOMMENDED MOUNTING PAD DIMENSIONS						
Dim.	Millimeters			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

B5817W THRU B5819W

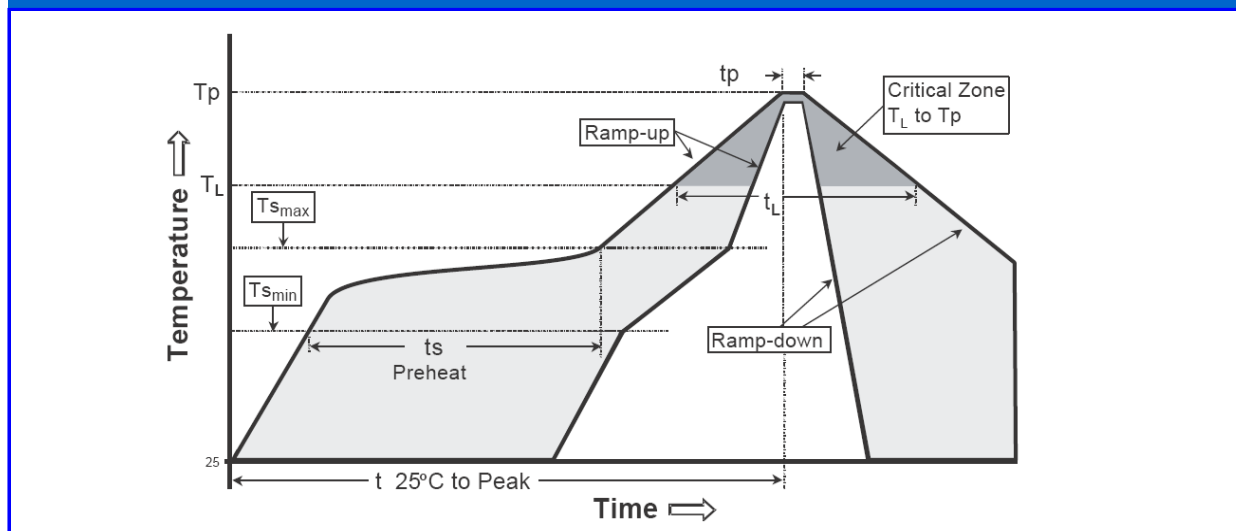
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Recommended wave soldering condition

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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