

**B5817WS-B5819WS**

SCHOTTKY BARRIER RECTIFIERS



<b>VOLTAGE:</b> 20~40 Volts		<b>CURRENT:</b> 1.0 Amperes		<b>SOD-323</b>		<b>Marking and Polarity</b>	
<b>FEATURES</b> <ul style="list-style-type: none"> <li>Low Forward Voltage Drop for high efficiency</li> <li>Low leakage current for high reliability</li> <li>High forward surge capability for high reliability</li> </ul>							
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li><b>Terminals:</b> Plated Leads Solderable per MIL-STD-202, Method 208</li> <li><b>Mounting Position:</b> Any</li> <li><b>Lead Free:</b> Lead Free Finish, RoHS Compliant</li> <li><b>Weight:</b> App. 0.0041 grams (0.0001 ounce)</li> </ul>							
<b>TYPICAL APPLICATIONS</b> <ul style="list-style-type: none"> <li>For use in high frequency inverteS ,AC/DC converteS, DC/DC converteS,LED driver etc. applications</li> </ul>				<b>Remark:</b> <ol style="list-style-type: none"> <li>Sx=Modle,x=J,K,L</li> <li>White band denotes cathode</li> <li>Marking:B5817WS: SJ B5818WS: SK B5819WS: SL</li> </ol>			
<b>Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)</b>							
<b>Parameter</b>	<b>Symbol</b>	<b>B5817WS</b>	<b>B5818WS</b>	<b>B5819WS</b>	<b>Unit</b>		
Maximum repetitive peak reveSe 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)(see fig.5)	$I_{FSM}$	9			A		
Current Squared Time Per Diode(t<8.3ms)	$I^2t$	0.34			A <sup>2</sup> sec		
<b>Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)</b>							
<b>Parameter</b>	<b>Test Conditions</b>		<b>Symbol</b>	<b>B5817WS</b>	<b>B5818WS</b>	<b>B5819WS</b>	<b>Unit</b>
Maximum instantaneous forward voltage (see fig.2) (Note 1)	$T_A=25^{\circ}C$	$I_F= 1.0 A$	$V_F$	0.45	0.55	0.60	V
	$T_A=125^{\circ}C$	$I_F= 1.0 A$		0.41	0.51	0.55	
Maximum instantaneous reveSecurent at rated DC blockingvoltage (see fig.3)(Note 1)	$T_A=25^{\circ}C$	$V_R= V_{RRM}$	$I_R$	1			mA
	$T_A=125^{\circ}C$	$V_R= 80\%*V_{RRM}$		100			
Typical junction capacitance(see fig.4)	4V,1MHz		$C_J$	120			pF
<b>Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )</b>							
<b>Parameter</b>	<b>Symbol</b>	<b>B5817WS</b>	<b>B5818WS</b>	<b>B5819WS</b>	<b>Unit</b>		
Operating junction	$T_J$	-55	to	150	°C		
Storage temperature range	$T_{STG}$	-55	to	150			
<b>Note:</b> 1.Pulse width < 300 uS, Duty cycle < 2% 2.P.C.B. mounted with 0.1"x0.1"(2.54 x2.54 mm) copper pad areas							

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**RATING AND CHARACTERISTIC CURVES**

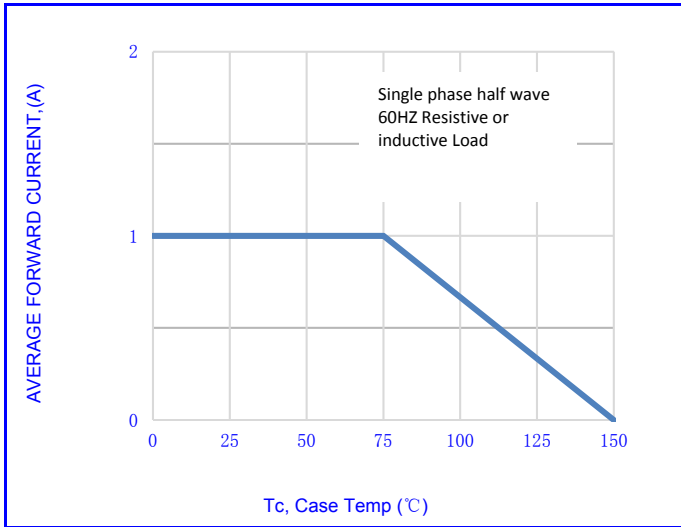


Fig.1- FORWARD CURRENT DERATING CURVE

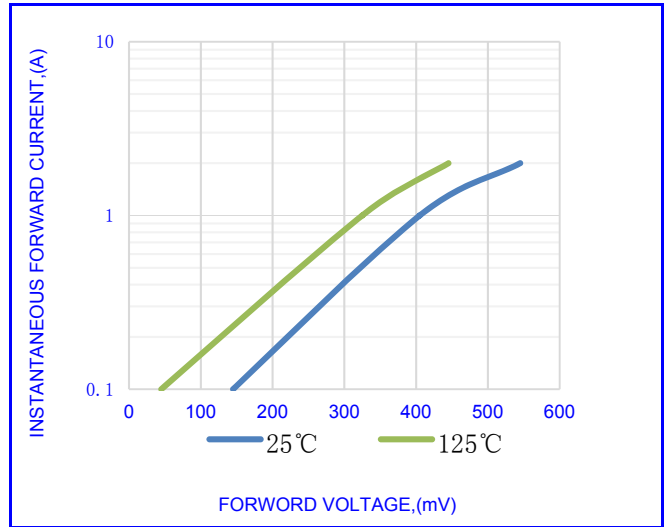


Fig.2-TYPICAL INSTANTANEOUS FORWARD

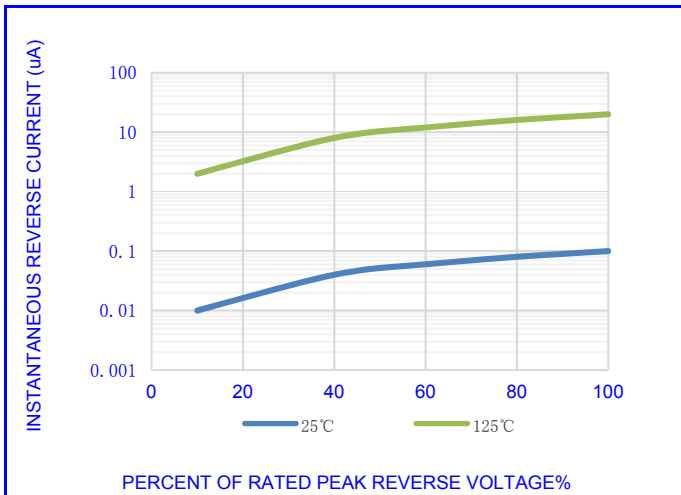


Fig.3-TYPICAL REVERSE CHARACTERISTICS

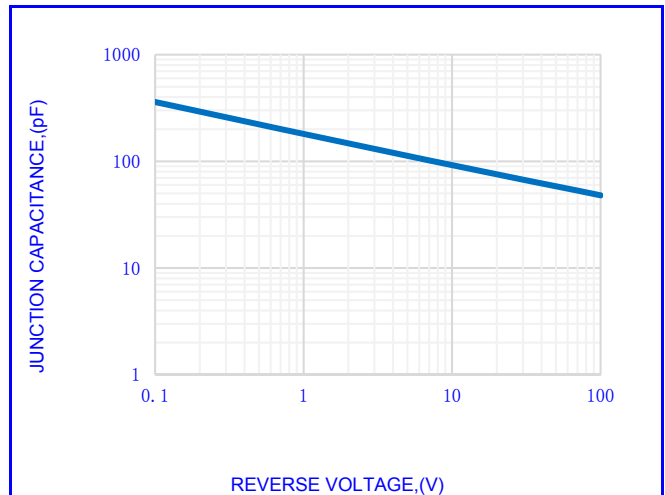


Fig.4- TYPICAL JUNCTION CAPACITANCE

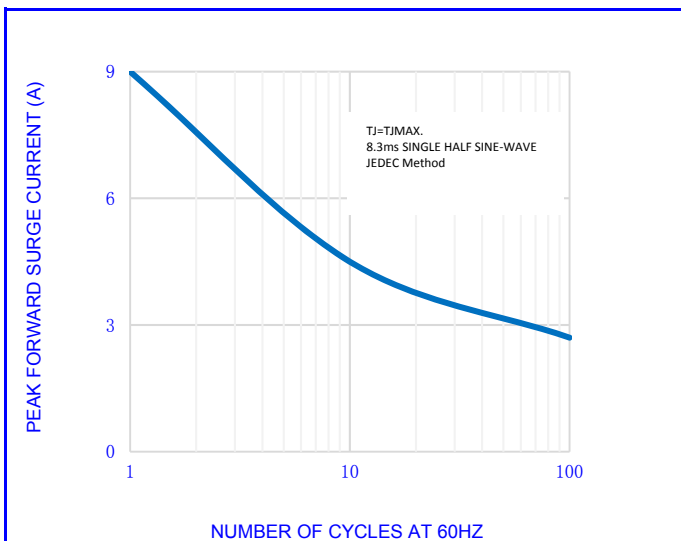


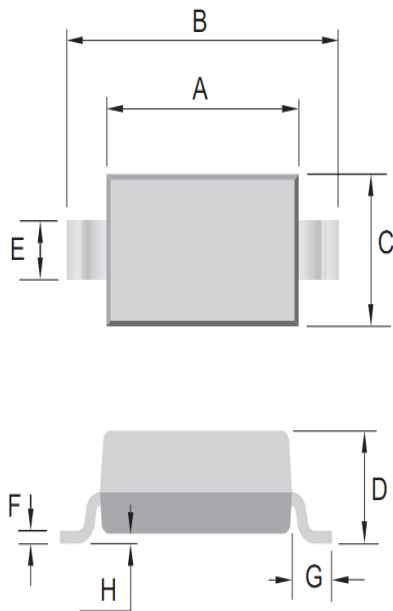
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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**OUTLINE DRAWINGS**

**SOD-323**

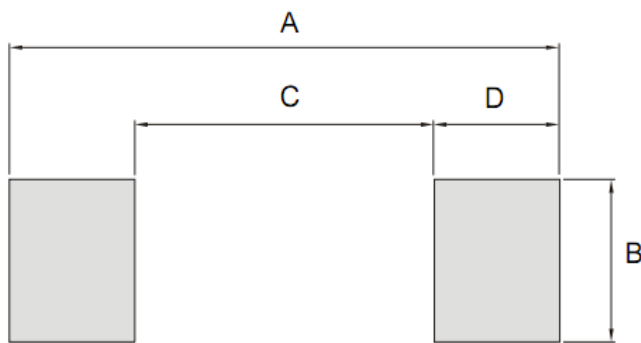


**OUTLINE DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.600	-	1.800	0.063	-	0.071
B	2.400	-	2.700	0.094	-	0.106
C	1.200	-	1.400	0.047	-	0.055
D	-	-	1.000	-	-	0.039
E	0.250	-	0.350	0.010	-	0.014
F	0.080	-	0.150	0.003	-	0.006
G	-	0.475	-	-	0.019	-
H	-	-	0.120	-	-	0.005

**RECOMMENDED LAYOUT DRAWINGS**

**SOD-323**



**RECOMMENDED MOUNTING PAD DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	--	2.900	--	--	0.114	--
B	--	0.500	--	--	0.020	--
C	--	1.440	--	--	0.057	--
D	--	0.730	--	--	0.029	--

**PACKING INFORMATION**

**SOD-323**

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	185×185×90	21000	400×400×300	252000

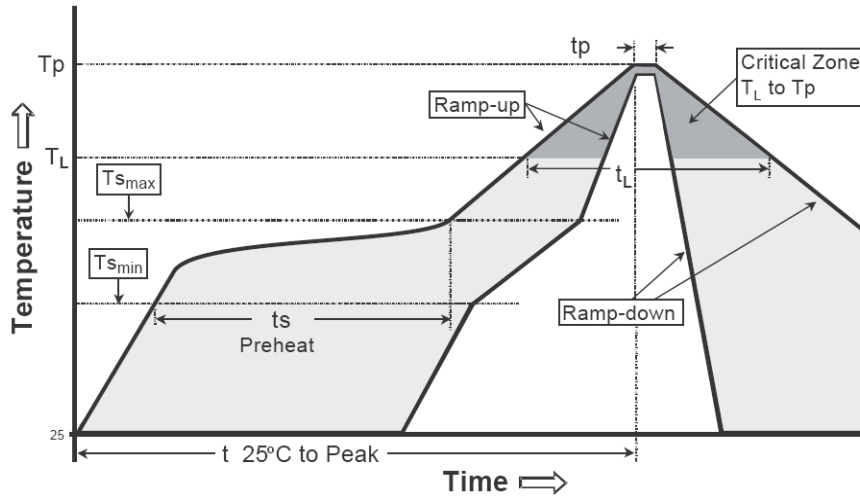
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**Recommended wave soldering condition**

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 <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T <sub>S</sub> min) -Temperature Max(T <sub>S</sub> max) -Time(t <sub>s</sub> min to t <sub>s</sub> max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>P</sub> )	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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