

Schottky Barrier Diode

Product Summary

Parameter	Rating		
	B5817WS	B5818WS	B5819WS
V _{RRM}	20 V	30 V	40 V
V _F Max @ 1A	450 mV	550 mV	600 mV
I _{F(AV)}	1A	1A	1A
I _R Max	200 μA	40 μA	40 μA



SOD-323

Features

- Guard Ring Protection
- Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters
- High Surge Current Capability

Mechanical Data

- Package: SOD-323
- Moisture Sensitivity: Level 1, per J-STD-020
- Halogen Free. “Green” Device (Note¹)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish & RoHS Compliant
- Weight: 0.004 g (approximate)

Body Marking and Pin Layout

Body Marking	Internal structure
<p>XX: Device Marking Code¹ Bar: Cathode Pin indicator Dot(optional): Manufacturing Site Marking</p> <p>¹ Refer to the ordering information for the specific device code.</p>	

Ordering Information

Ordering Product Name	Device Marking Code	Reel Size	Packing Type	Qty/Reel
B5817WS-TP	SJ	7"	Tape & Reel	3,000
B5817WS-13P	SJ	13"	Tape & Reel	10,000
B5818WS-TP	SK	7"	Tape & Reel	3,000
B5818WS-13P	SK	13"	Tape & Reel	10,000
B5819WS-TP	SL	7"	Tape & Reel	3,000
B5819WS -13P	SL	13"	Tape & Reel	10,000

For packaging details, visit our website at <https://www.mccsemi.com/Package/List>

Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating			Unit
		B5817WS	B5818WS	B5819WS	
Peak Repetitive Reverse Voltage	V_{RRM}	20	30	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	V
Reverse Voltage	V_R	20	30	40	V
Average Forward Current	$I_{F(AV)}$	1	1	1	A
Non-Repetitive Peak Surge Current	I_{FSM}	10	10	10	A
	$t_p=8.3\text{ms Half Sine Wave, } T_J=25^\circ\text{C}$				
Power Dissipation ^(Note 2)	P_D	200	200	200	mW
Operating Junction Temperature Range	T_J	-65 to +125	-65 to +125	-65 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	-65 to +150	-65 to +150	$^\circ\text{C}$

- Notes:
- Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 - Device mounted on an FR4 Printed-Circuit Board (PCB) with the recommended pad layout.

Thermal characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Thermal Resistance from Junction to Ambient ^(Note 2)	$R_{\theta JA}$	500	$^\circ\text{C/W}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Product name	Test Conditions	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage	B5817WS	$I_R=1\text{ mA (pulse test)}$	V_{BR}	20			V
	B5818WS			30			V
	B5819WS			40			V
Forward Voltage	B5817WS	$I_F=1\text{ A}$	V_F			0.45	V
		$I_F=3\text{ A}$				0.75	
	B5818WS	$I_F=1\text{ A}$	V_F			0.55	V
		$I_F=3\text{ A}$				0.875	
	B5819WS	$I_F=1\text{ A}$	V_F			0.60	V
		$I_F=3\text{ A}$				0.90	
Reverse Current	B5817WS	$V_R=20\text{ V}$	I_R		30	200	μA
	B5818WS	$V_R=30\text{ V}$			4	40	
	B5819WS	$V_R=40\text{ V}$			7	40	
Junction Capacitance	B5817WS	$V_R=4\text{ V, } f=1.0\text{MHz}$	C_J		80		pF
		$V_R=10\text{ V, } f=1.0\text{MHz}$			50		
	B5818WS	$V_R=4\text{ V, } f=1.0\text{MHz}$	C_J		48		pF
		$V_R=10\text{ V, } f=1.0\text{MHz}$			32		
	B5819WS	$V_R=4\text{ V, } f=1.0\text{MHz}$	C_J		48		pF
		$V_R=10\text{ V, } f=1.0\text{MHz}$			32		
Reverse Recovery Time		$I_F=10\text{mA, } I_R=10\text{mA, } I_{rr}=0.1 \times I_R, R_L=100\Omega$	t_{rr}			50	ns

B5817WS Curve Characteristics

Fig.1 - Typical Instantaneous Forward Characteristics (per diode)

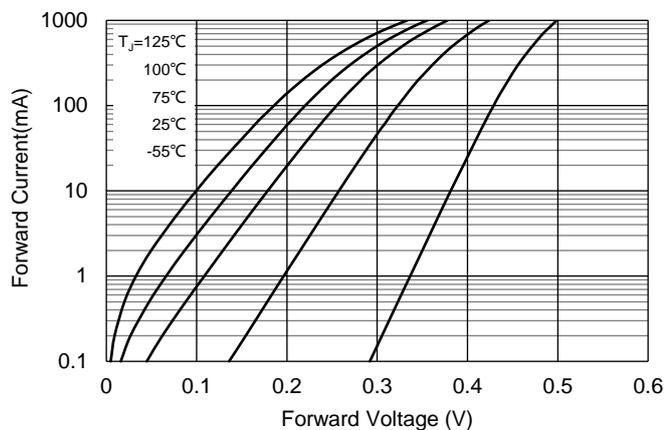


Fig.2 - Typical Reverse Leakage Characteristics (per diode)

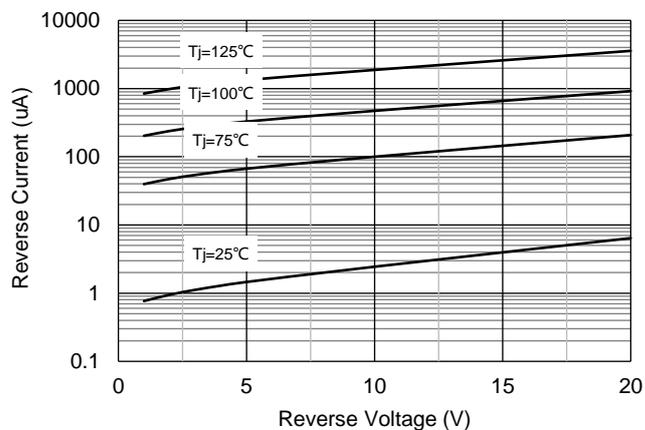


Fig.3 - Typical Capacitance Characteristics (per diode)

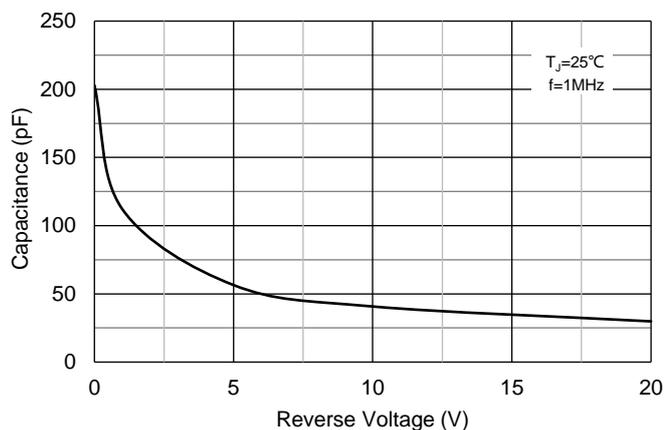
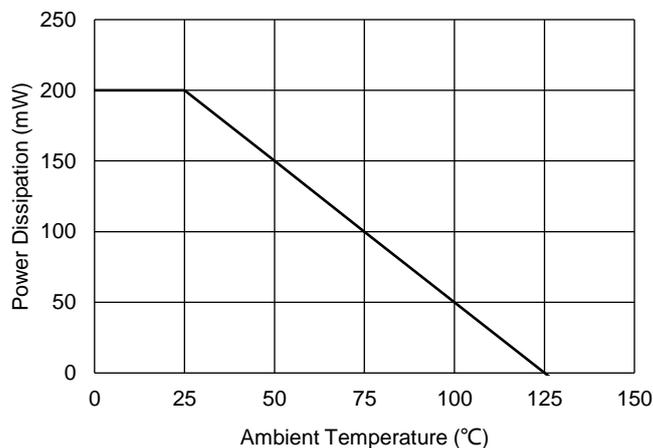


Fig.4 - Power Derating Curve



B5818WS&B5819WS Curve Characteristics

Fig.1 - Typical Instantaneous Forward Characteristics (per diode)

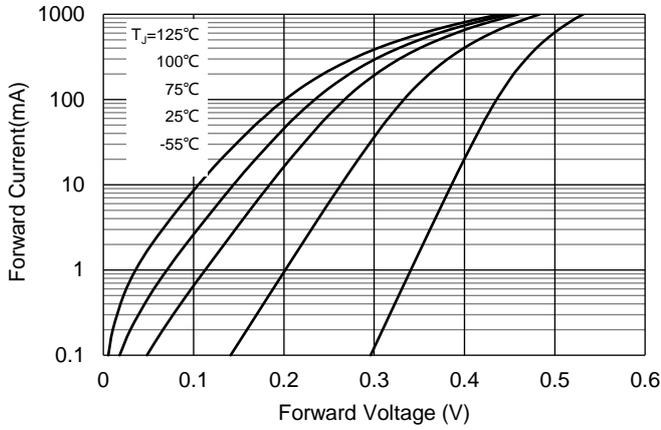


Fig.2 - Typical Reverse Leakage Characteristics (per diode)

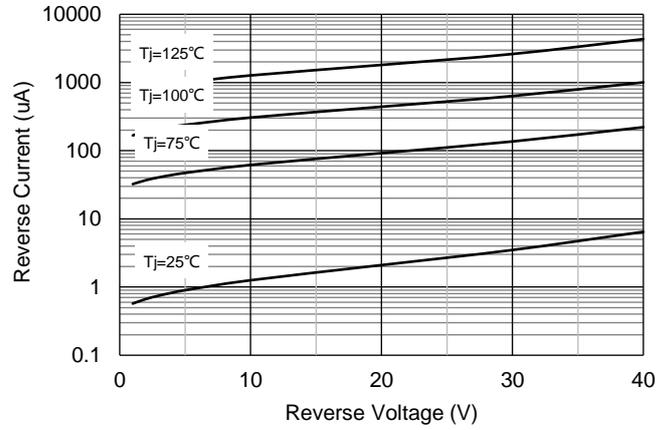


Fig.3 - Typical Capacitance Characteristics (per diode)

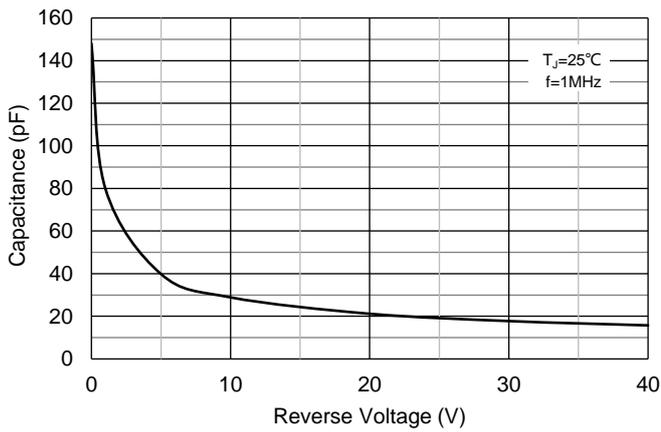
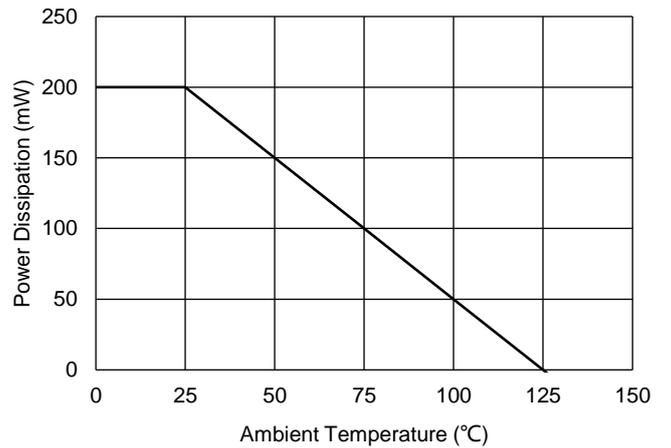
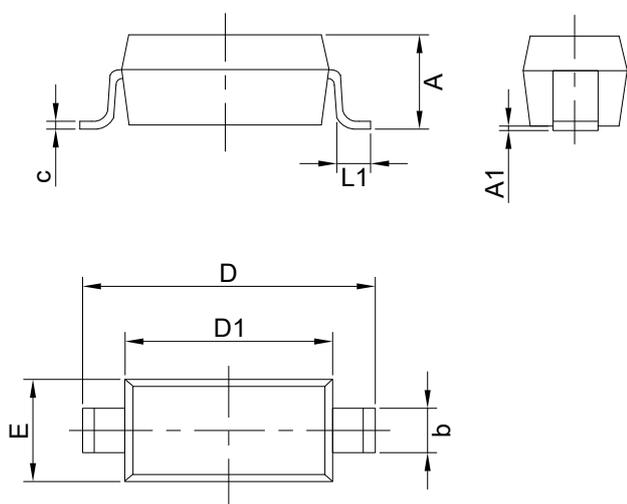


Fig.4 - Power Derating Curve



Package Outline

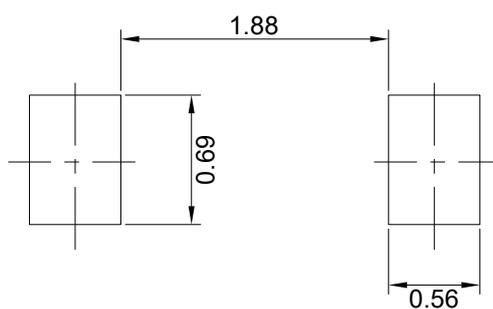


DIM	INCH		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.045	0.80	1.15*	Note 1
A1	0.000	0.006	0.00	0.15	
b	0.010	0.016	0.25	0.40	
c	0.003	0.010	0.08	0.25	
D	0.090	0.107	2.30	2.70	
D1	0.063	0.071	1.60	1.80	
E	0.045	0.055	1.15	1.40	
L1	0.004	0.018	0.10	0.45	

Notes:

1. Dimension A for products from manufacturing site VN is controlled at max 1.10 mm.

Suggested Pad Layout (Unit:mm)



Notes:

1. The suggested land pattern dimensions have been provided for reference only.
2. For further information, please refer to document IPC-7351A.

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