

60V, 1A Schottky Barrier Diode

Product Summary

Parameter	Rating
V_{RRM}	60 V
$V_F \text{ Max @ } 1A$	750 mV
$I_{F(AV)}$	1 A
$I_R \text{ Max @ } V_R = 60 \text{ V}$	500 μA



Features

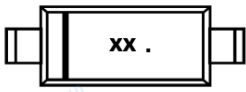
- Extremely Low Thermal Resistance
- For Surface Mount Application and High Current Capability

SOD-323

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
 XX: Device Marking Code¹ Bar: Cathode Pin indicator Dot(optional): Manufacturing Site Marking ¹ Refer to the ordering information for the specific device code.	

Ordering Information

Ordering Product Name	Device Marking Code	Reel Size	Packing Type	Qty/Reel
MBR160S-TP	X7	7"	Tape & Reel	3,000
MBR160S -13P	X7	13"	Tape & Reel	10,000

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

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

Parameter		Symbol	Rating	Unit
Peak Repetitive Reverse Voltage		V_{RRM}	60	V
RMS Reverse Voltage		$V_{R(RMS)}$	42	V
Reverse Voltage		V_R	60	V
Average Forward Current		$I_{F(AV)}$	1	A
Non-Repetitive Peak Surge Current	$t_p = 8.3\text{ms}$ Sine Wave, $T_J = 25^\circ\text{C}$	I_{FSM}	20	A
Power Dissipation ^(Note 2)		P_D	300	mW
Operating Junction Temperature Range		T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-55 to +150	$^\circ\text{C}$

Notes:
 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 2. 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)	$R_{\theta JA}$	333	$^\circ\text{C/W}$

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

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$I_R = 100\ \mu\text{A}$ (pulse test)	V_{BR}	60			V
Forward Voltage	$I_F = 0.1\ \text{A}$	V_F			0.55	V
	$I_F = 1\ \text{A}$				0.75	
	$I_F = 3\ \text{A}$				1.00	
Reverse Current	$V_R = 60\ \text{V}$	I_R			500	μA
Junction Capacitance	$V_R = 4\ \text{V}$, $f = 1.0\text{MHz}$	C_J			50	pF
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}			30	ns

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Curve Characteristics

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

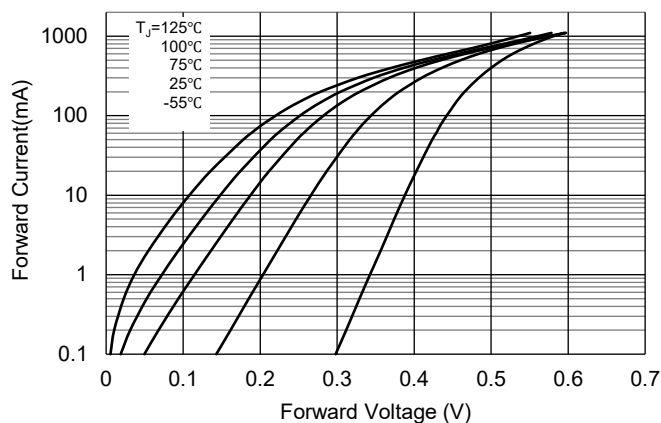


Fig.2 - Typical Reverse Leakage Characteristics (per diode)

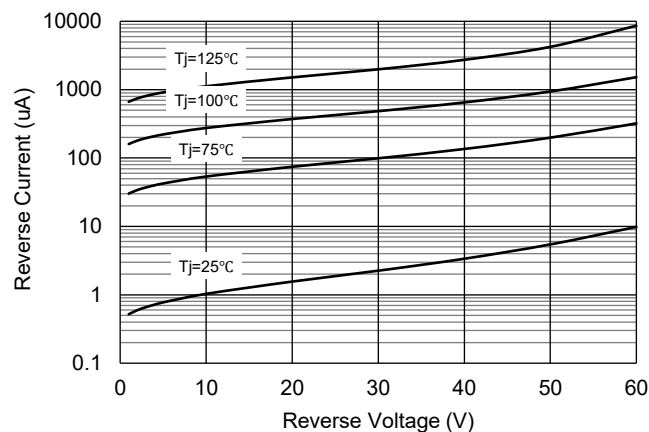


Fig.3 - Typical Capacitance Characteristics (per diode)

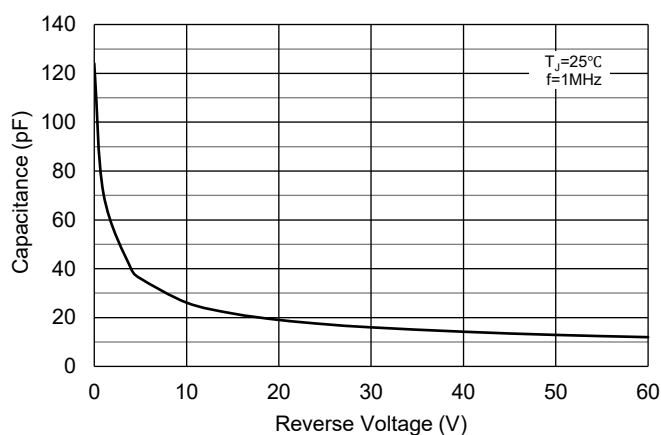
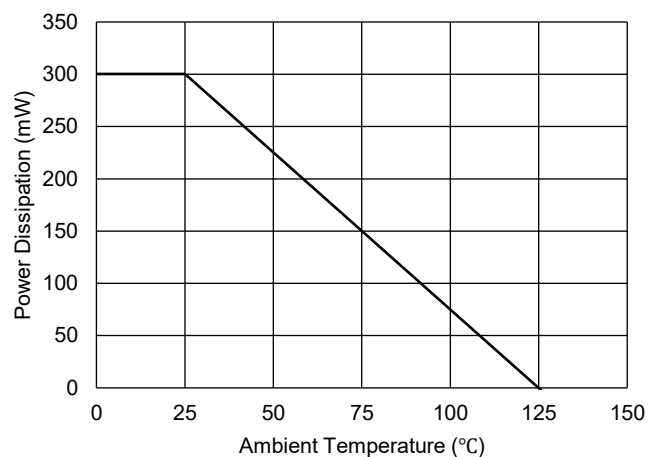
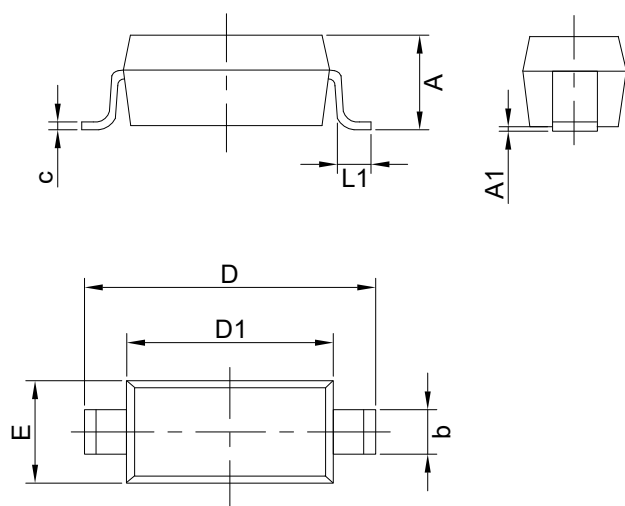


Fig.4 - Power Derating Curve



Package Outline

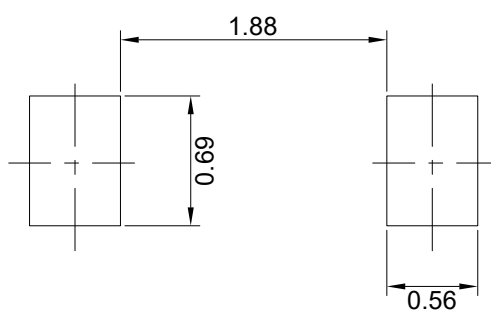


DIM	INCH		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.045	0.80	1.15*	Note 1
A1	0.000	0.006	0.00	0.15	
b	0.010	0.016	0.25	0.40	
c	0.003	0.010	0.08	0.25	
D	0.090	0.107	2.30	2.70	
D1	0.063	0.071	1.60	1.80	
E	0.045	0.055	1.15	1.40	
L1	0.004	0.018	0.10	0.45	

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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