

Small Signal Product

## Low VF SMD Schottky Barrier Diode

### FEATURES

- Low power loss, high current capability, low VF
- Surface mount device type
- Moisture sensitivity level 1
- Matte Tin (Sn) lead finish with Nickel (Ni) under plate
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21


**SOD-123**

### MECHANICAL DATA

- Case: Bend lead SOD-123 small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed : 260°C/10s
- Polarity: Indicated by cathode band
- Weight: 0.01 g (approximately)



<b>MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	B0520LW	B0530W	B0540W	UNIT
Power Dissipation	$P_D$	410			mW
Repetitive Peak Reverse Voltage	$V_{RRM}$	20	30	40	V
Reverse Voltage	$V_R$	14	21	28	V
Mean Forward Current @ $T_L=100^\circ\text{C}$ (Lead Temperature)	$I_O$	500			mA
Non-Repetitive Peak Forward Surge Current (Note 1)	$I_{FSM}$	5.5			A
Thermal Resistance (Junction to Ambient) (Note 2)	$R_{\theta JA}$	244			$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +125			$^\circ\text{C}$

Notes: 1. Test Condition: 8.3ms single half sine-wave superimposed on rated load

Notes: 2. Valid provided that electrodes are kept at ambient temperature

PARAMETER	SYMBOL	B0520LW	B0530W	B0540W	UNIT	
Reverse Breakdown Voltage (Minimum Value)	$V_{(BR)}$	$I_R=250\mu\text{A}$	20	-	-	V
		$I_R=130\mu\text{A}$	-	30	-	
		$I_R=20\mu\text{A}$	-	-	40	
Forward Voltage (Maximum Value)	$V_F$	$I_F=100\text{mA}$	0.300	0.375	-	V
		$I_F=500\text{mA}$	0.385	0.430	0.510	
		$I_F=1000\text{mA}$	-	-	0.620	
Reverse Leakage Current (Maximum Value)	$I_R$	$V_R = 10\text{V}$	75	-	-	$\mu\text{A}$
		$V_R = 15\text{V}$	-	20	-	
		$V_R = 20\text{V}$	250	-	10	
		$V_R = 30\text{V}$	-	130	-	
		$V_R = 40\text{V}$	-	-	20	
Junction Capacitance	$C_J$	$V_R = 0\text{V}$	170		pF	

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**RATINGS AND CHARACTERISTICS CURVES**

( $T_A=25^\circ\text{C}$  unless otherwise noted)

Fig.1 Typical Forward Characteristics

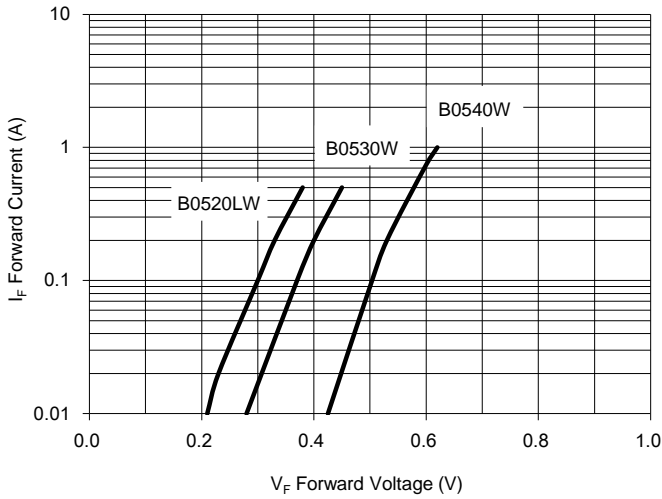


Fig. 2 Forward Current Derating Curve

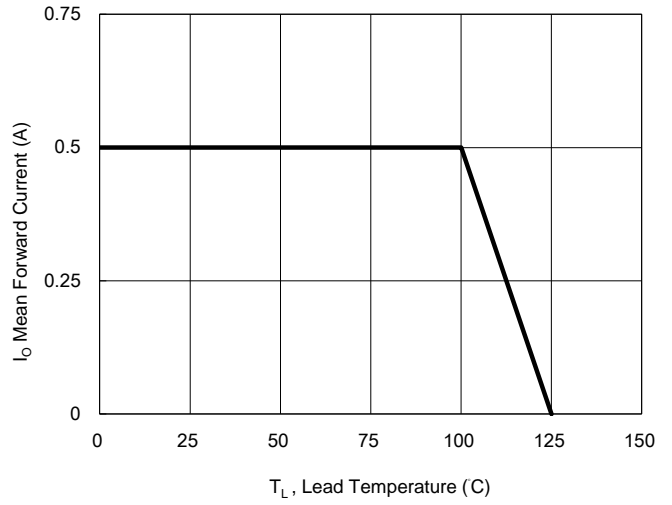


Fig. 3 Admissible Power Dissipation Curve

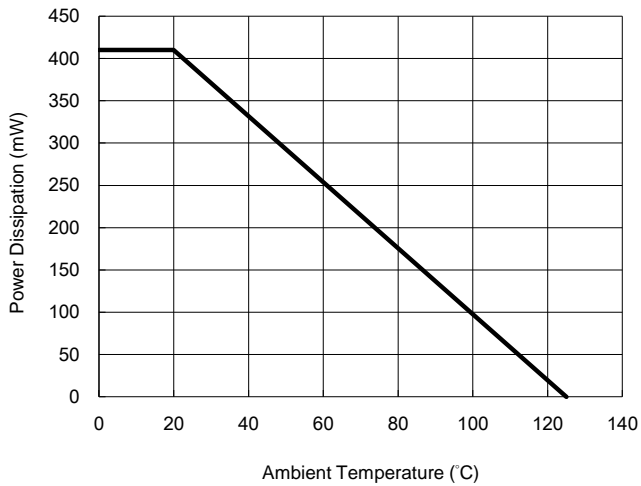
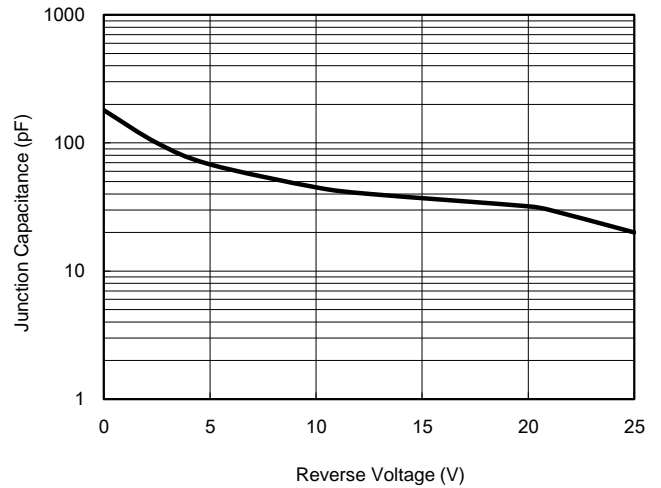


Fig. 4 Typical Junction Capacitance



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<b>ORDERING INFORMATION</b>				
<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
B05xxx (Note 1, 2)	RH	G	SOD-123	3K / 7" Reel

Note 1: "xxx" defines voltage from 20V (B0520LW) to 40V (B0540W)

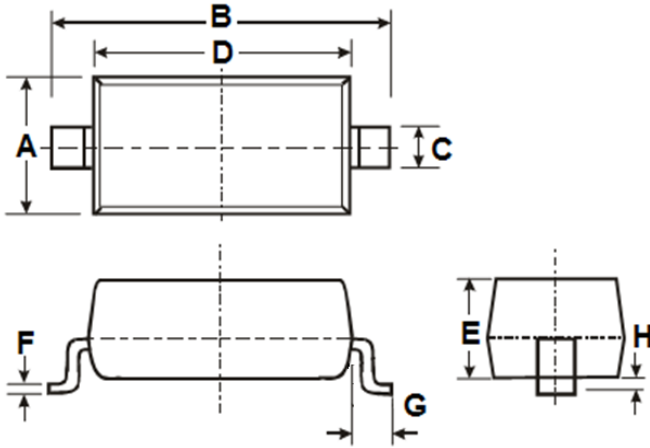
Note 2: Whole series with green compound

<b>EXAMPLE</b>				
<b>EXAMPLE PART NO.</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
B0540W RH	B0540W	RH	G	Green compound

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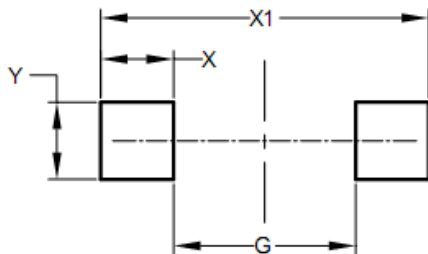
**PACKAGE OUTLINE DIMENSIONS**

SOD-123



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.40	1.80	0.055	0.071
B	3.55	3.85	0.140	0.152
C	0.45	0.70	0.018	0.028
D	2.55	2.85	0.100	0.112
E	0.95	1.35	0.037	0.053
F	0.05	0.15	0.002	0.006
G	0.50 REF		0.02 REF	
H	-	0.10	-	0.004

**SUGGEST PAD LAYOUT**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
G	2.25	2.25	0.089	0.089
X	0.90	0.90	0.035	0.035
X1	4.05	4.05	0.159	0.159
Y	0.95	0.95	0.037	0.037

**MARKING**

Part No.	Marking
B0520LW	SD
B0530W	SE
B0540W	SF

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