

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	

Small Signal Product

**RATINGS AND CHARACTERISTICS CURVES**

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

Fig.1 Typical Forward Characteristics

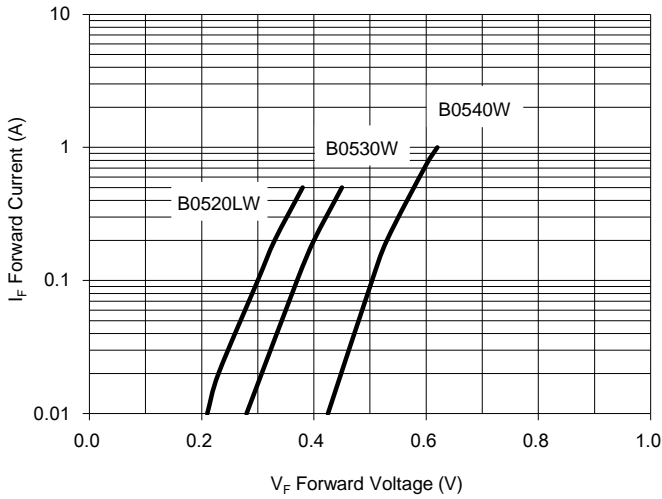


Fig. 2 Forward Current Derating Curve

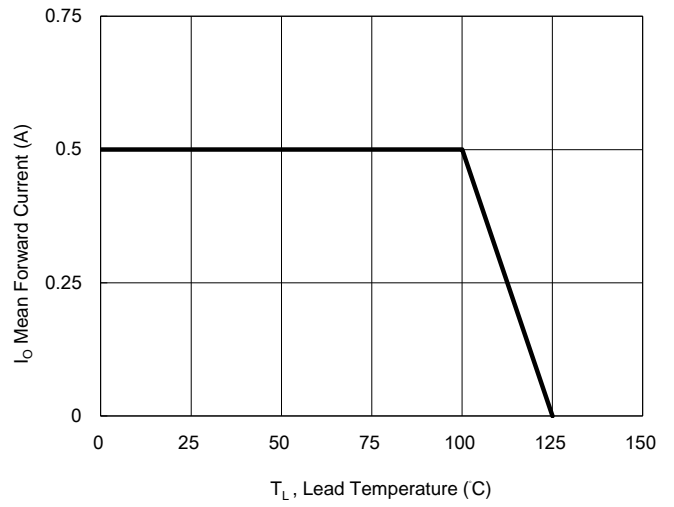


Fig. 3 Admissible Power Dissipation Curve

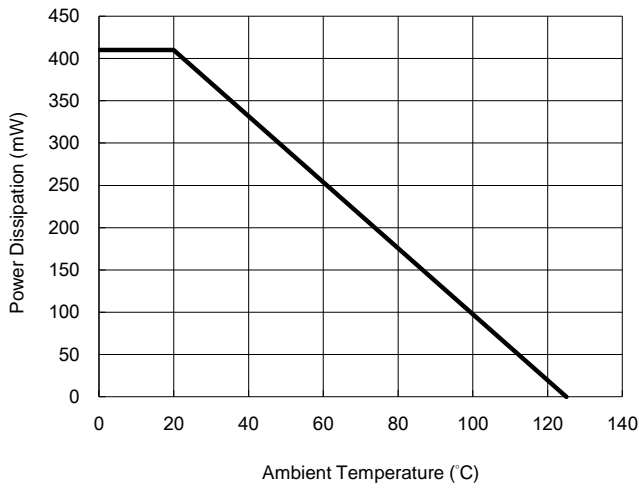
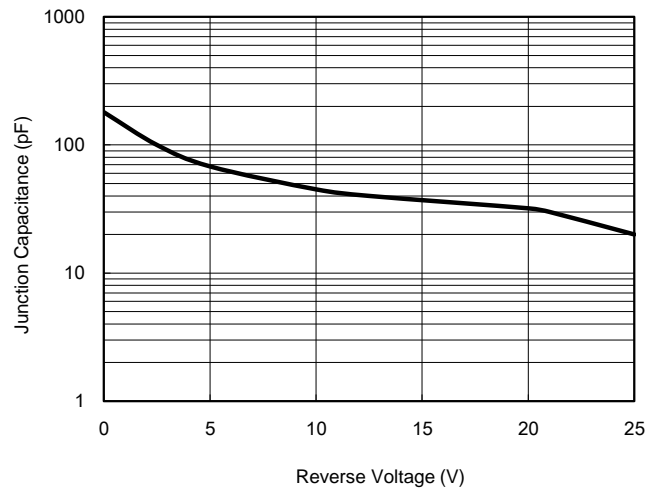


Fig. 4 Typical Junction Capacitance



Small Signal Product

<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)

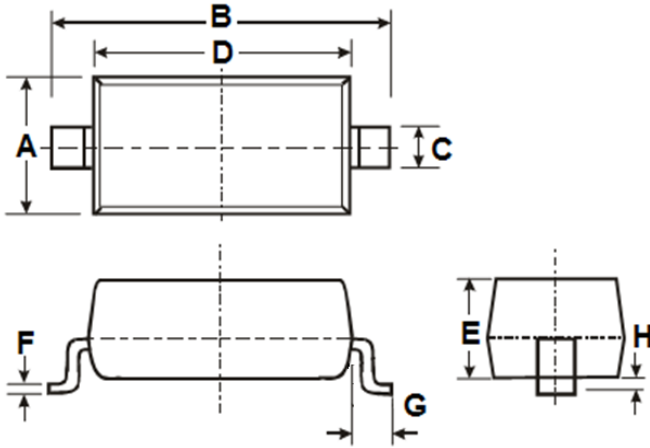
Note 2: Whole series with green compound

<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

Small Signal Product

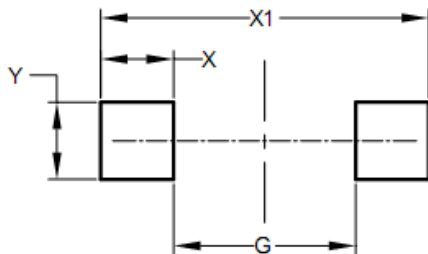
**PACKAGE OUTLINE DIMENSIONS**

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	Min	Min	Min
G	2.25		0.089	
X	0.90		0.035	
X1	4.05		0.159	
Y	0.95		0.037	

**MARKING**

Part No.	Marking
B0520LW	SD
B0530W	SE
B0540W	SF

### **Notice**

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.