

### Small Signal Diode



#### Features

- ✧ Low power loss, high current capability, low  $V_F$
- ✧ Surface device type mounting
- ✧ Moisture sensitivity level 1
- ✧ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧ Pb free version and RoHS compliant
- ✧ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

#### Mechanical Data

- ✧ Case : 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 gram (approximately)
- ✧ Marking Code : SD, SE, SF

#### Applications

- ✧ 0.5A surface mount schottky barrier rectifier

#### Ordering Information

Package	Part No.	Packing	Marking
SOD123	B0520LW RH	3K / 7" Reel	SD
SOD123	B0530W RH	3K / 7" Reel	SE
SOD123	B0540W RH	3K / 7" Reel	SF
SOD123	B0520LW RHG	3K / 7" Reel	SD
SOD123	B0530W RHG	3K / 7" Reel	SE
SOD123	B0540W RHG	3K / 7" Reel	SF

#### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

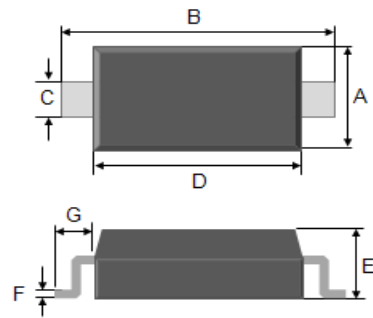
##### Maximum Ratings

Type Number	Symbol	B0520LW	B0530W	B0540W	Units
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			$^\circ\text{C/W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 125			$^\circ\text{C}$

Notes:1. Test Condition : 8.3ms Single half Sine-Wave Superimposed on Rated Load (JEDEC Method)

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

SOD-123

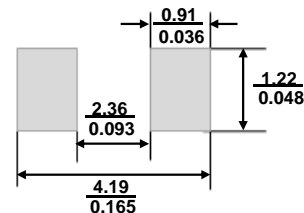


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.50	1.70	0.059	0.067
B	3.55	3.85	0.140	0.152
C	0.45	0.65	0.018	0.026
D	2.60	2.80	0.102	0.11
E	1.05	1.25	0.041	0.049
F	0.08	0.15	0.003	0.006
G	0.02 REF		0.50 REF	

#### Pin Configuration



#### Suggested PAD Layout

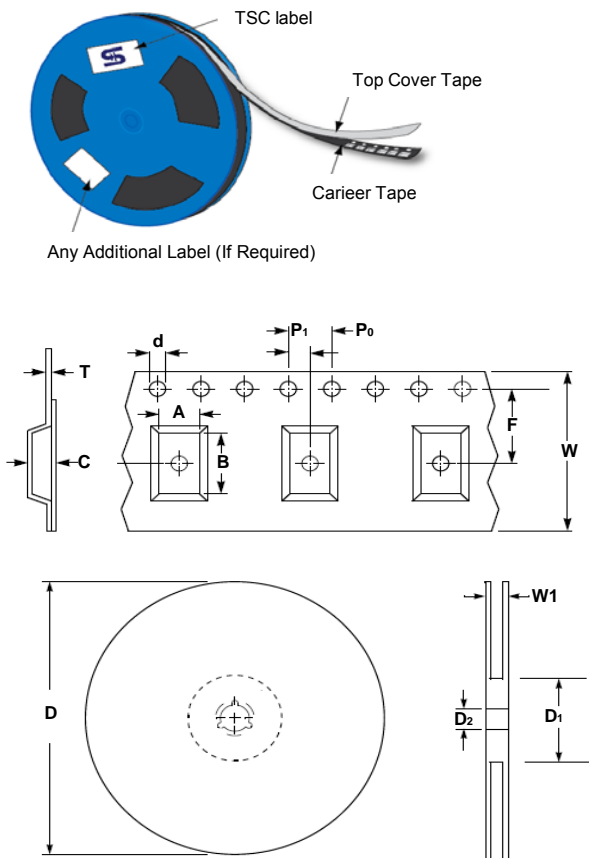


**Small Signal Diode**

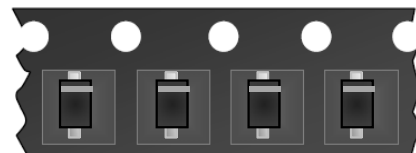
**Electrical Characteristics**

Type Number	Symbol	B0520LW	B0530W	B0540W	Units
Reverse Breakdown Voltage (Minimum value)	$I_R = 250\mu A$	20	-	-	V
	$I_R = 130\mu A$	-	30	-	
	$I_R = 20\mu A$	-	-	40	
Forward Voltage (Maximum value)	$I_F = 100mA$ $T_j = 25^\circ C$	0.300	0.375	-	V
	$I_F = 500mA$ $T_j = 25^\circ C$	0.385	0.430	0.510	
	$I_F = 1000mA$ $T_j = 25^\circ C$	-	-	0.620	
	$I_F = 100mA$ $T_j = 100^\circ C$	0.220	-	-	
	$I_F = 500mA$ $T_j = 100^\circ C$	0.330	-	0.460	
	$I_F = 1000mA$ $T_j = 100^\circ C$	-	-	0.610	
Reverse Leakage Current (Maximum value)	$V_R = 10V$ $T_j = 25^\circ C$	75	-	-	$\mu A$
	$V_R = 15V$ $T_j = 25^\circ C$	-	20	-	
	$V_R = 20V$ $T_j = 25^\circ C$	250	-	10	
	$V_R = 30V$ $T_j = 25^\circ C$	-	130	-	
	$V_R = 40V$ $T_j = 25^\circ C$	-	-	20	
	$V_R = 10V$ $T_j = 100^\circ C$	5	-	-	
	$V_R = 20V$ $T_j = 100^\circ C$	8	-	5	
	$V_R = 40V$ $T_j = 100^\circ C$	-	-	13	
Junction Capacitance	$V_R = 0V, f = 1.0MHz$	170			pF

**Tape & Reel specification**



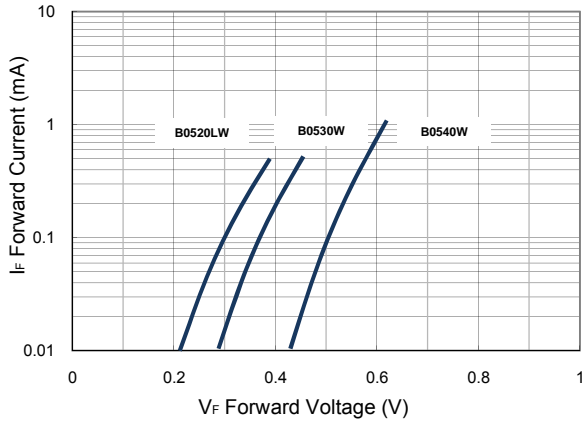
Item	Symbol	Dimension
Carrier width	A	1.85 ± 0.10
Carrier length	B	3.94 ± 0.10
Carrier depth	C	1.50 ± 0.10
Sprocket hole	d	1.5 ± 0.1
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	55 Min
Feed hole width	D2	13.0 ± 0.20
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.05
Sprocket hole pitch	P0	4.00 ± 0.10
Embossment center	P1	2.00 ± 0.05
Overall tape thickness	T	0.23 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W1	14.4 Max



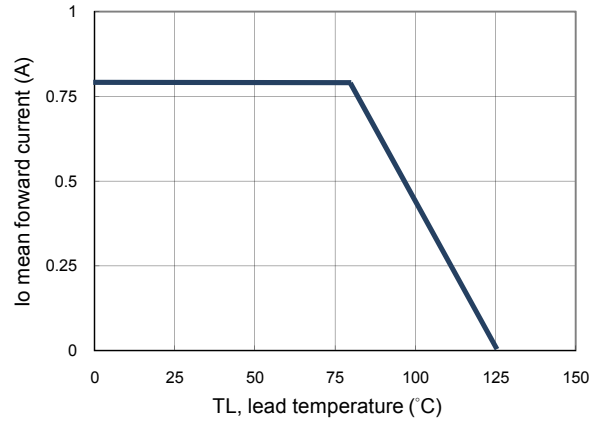
**Small Signal Diode**

**Rating and Sharacteristic Curves**

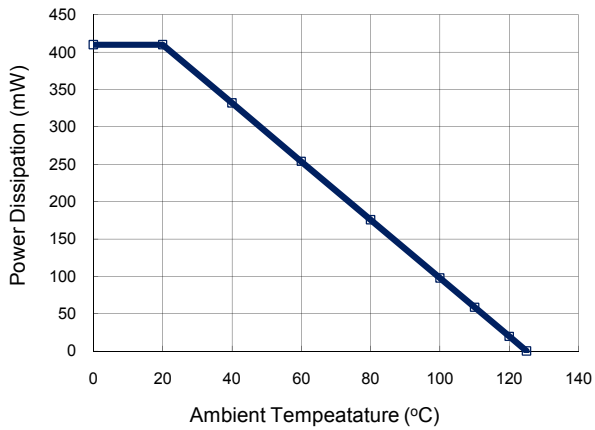
**FIG 1 Typical Forward Characteristics**



**FIG 2 Forward Current Derating Curve**



**FIG 3 Admissible Power Dissipation Curve**



**FIG 4 Typical Junction Capacitance**

