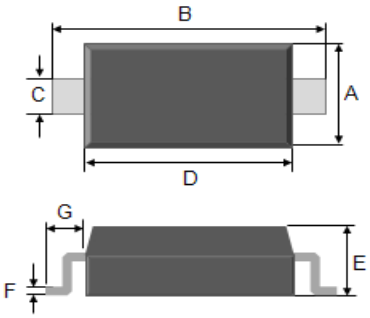
TAIWAN SEMICONDUCTOR

B0520LW,B0530W,B0540W
410mW, Low V_F SMD Schottky Barrier Diode

Small Signal Diode



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	

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

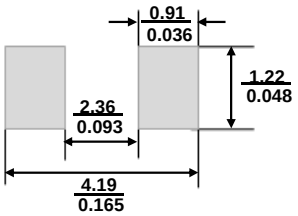
Pin Configuration



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

Suggested PAD Layout



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°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)	RθJA	244			°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to + 125			°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

TAIWAN SEMICONDUCTOR

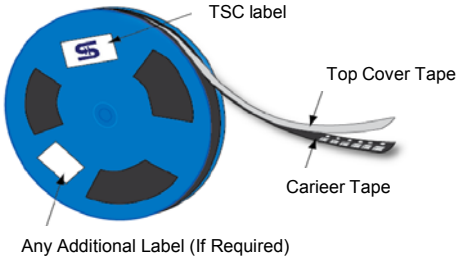
B0520LW,B0530W,B0540W
410mW, Low V_F SMD Schottky Barrier Diode

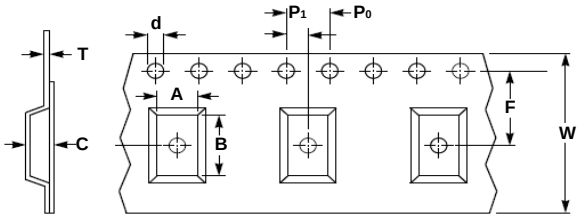
Small Signal Diode

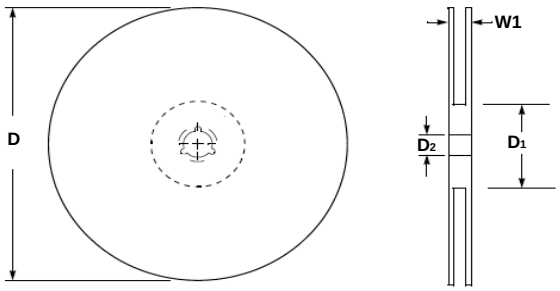
Electrical Characteristics

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

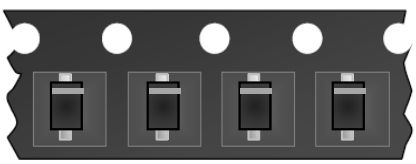
Tape & Reel specification







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
Sprocke hole position	E	1.75 ±0.10
Punch hole position	F	3.50 ±0.05
Sprocke 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

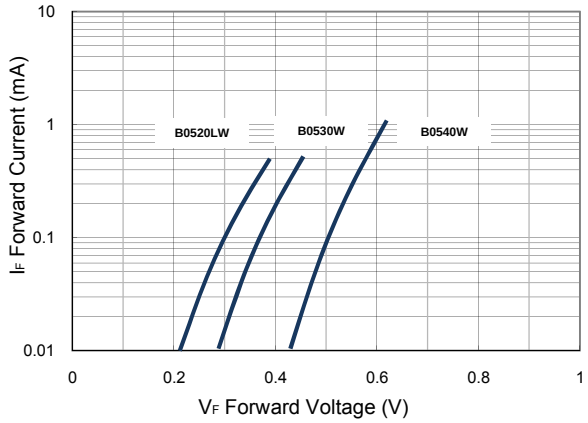


FIG 2 Forward Current Derating Curve

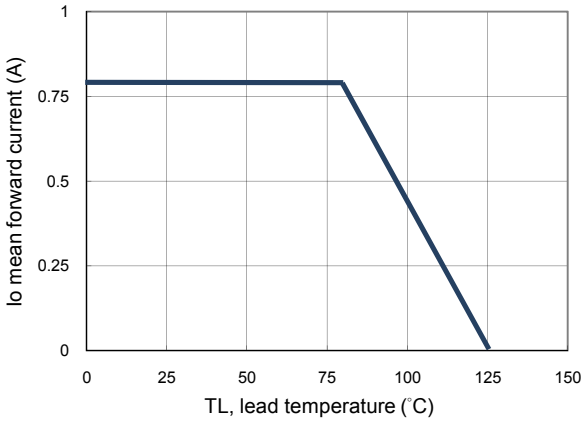


FIG 3 Admissible Power Dissipation Curve

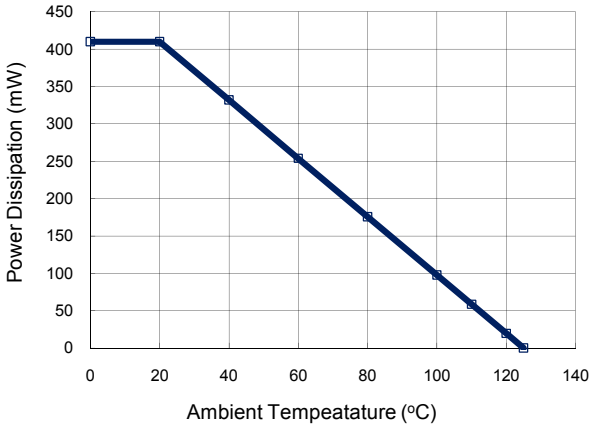


FIG 4 Typical Junction Capacitance

