

Small Signal Product

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

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Parameter	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}	-55 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



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Electrical Characteristics

Parameter		Symbol	B0520LWF	B0530WF	B0540WF	Units
Reverse Breakdown Voltage (Minimum Value)	$I_R=250\mu A$	$V_{(BR)}$	20	-	-	V
	$I_R=130\mu A$		-	30	-	
	$I_R=20\mu A$		-	-	40	
Forward Voltage (Maximum Value)	$I_F=100mA$ $T_j = 25^\circ C$	V_F	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	
Reverse Leakage Current (Maximum Value)	$V_R = 10V$ $T_j = 25^\circ C$	I_R	75	-	-	μA
	$V_R = 15V$ $T_j = 25^\circ C$		-	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	
Junction Capacitance	$V_R = 0 V$ $f=1.0MHz$	C_J	170			pF

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RATINGS AND CHARACTERISTIC CURVES

Fig.1 Typical Forward Characteristics

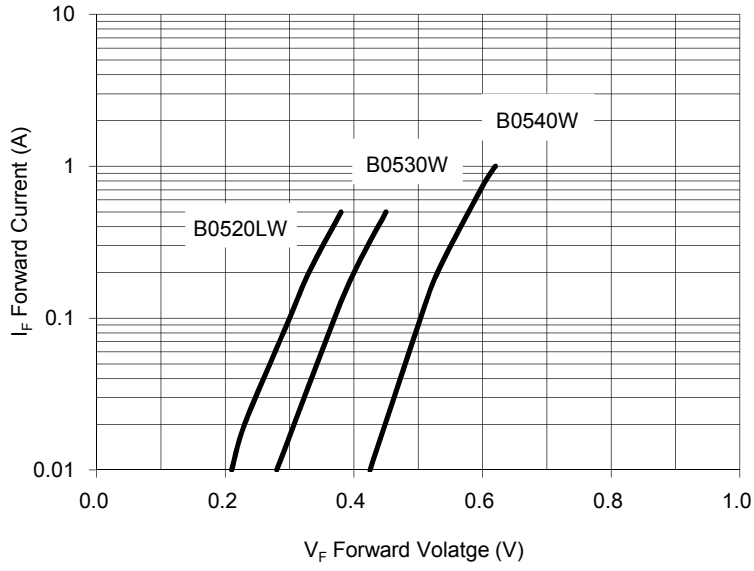


Fig. 2 Forward Current Derating Curve

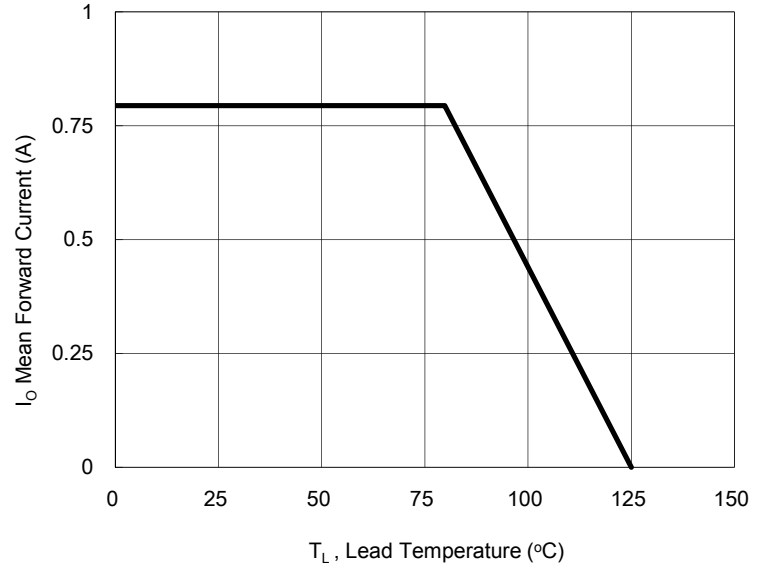


Fig. 3 Admissible Power Dissipation Curve

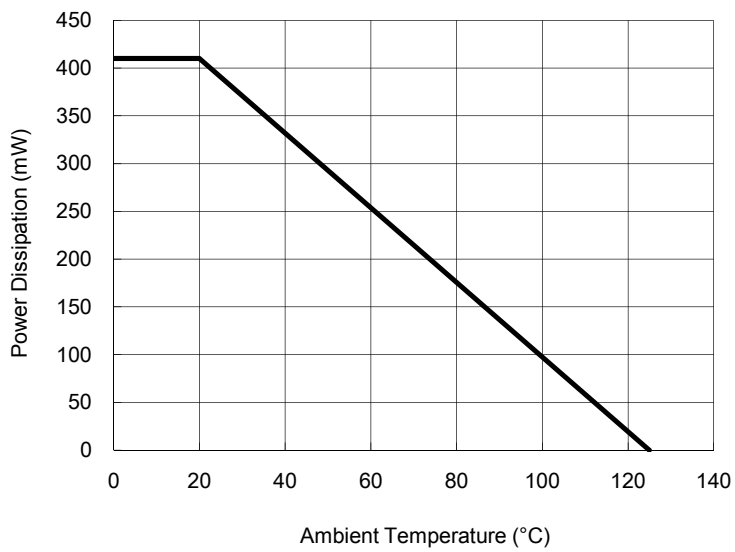
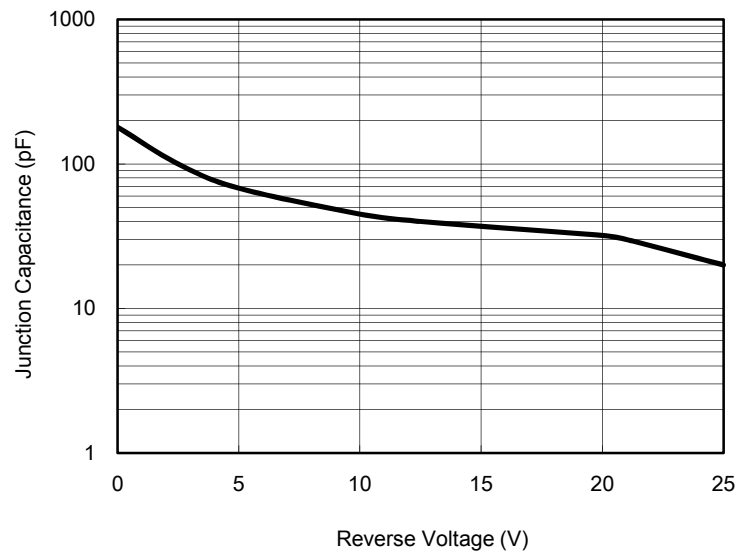


Fig. 4 Typical Junction Capacitance



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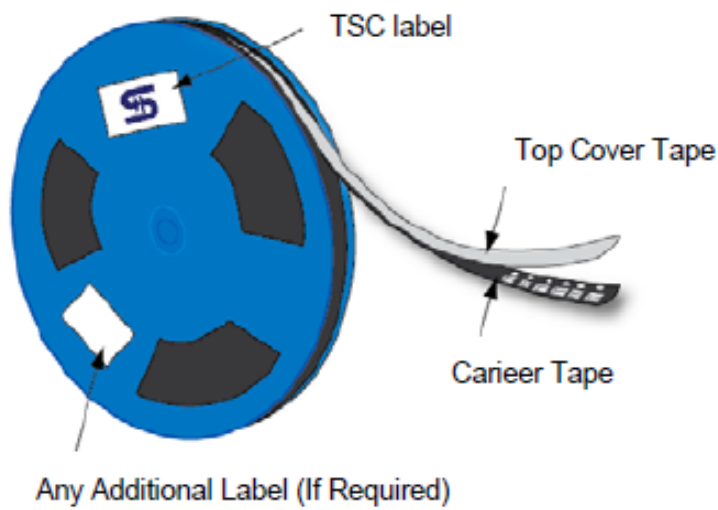
Ordering information (Detail, example)

Part No.	Package	Packing	Packing code	Packing code (Green)	Manufacture code
B05xxx (Note 1)	SOD-123	3K / 7" Reel	RH	RHG	(Note 2)
B0520LW	SOD-123	3K / 7" Reel	RH	RHG	
B0520LW	SOD-123	3K / 7" Reel	RH	RHG	D0

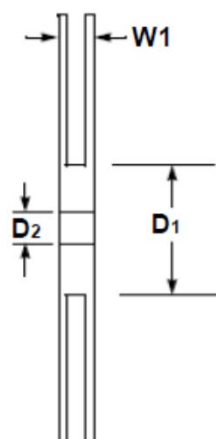
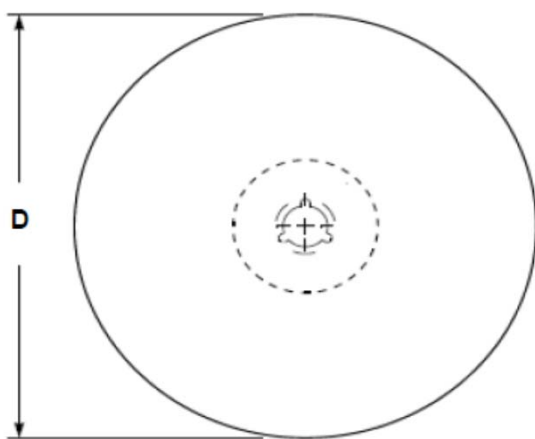
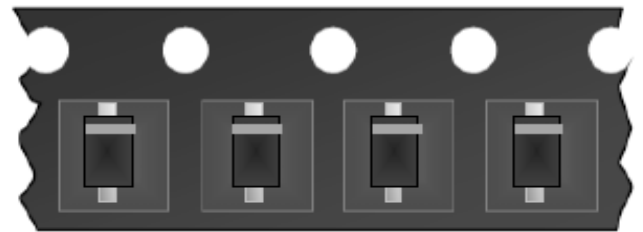
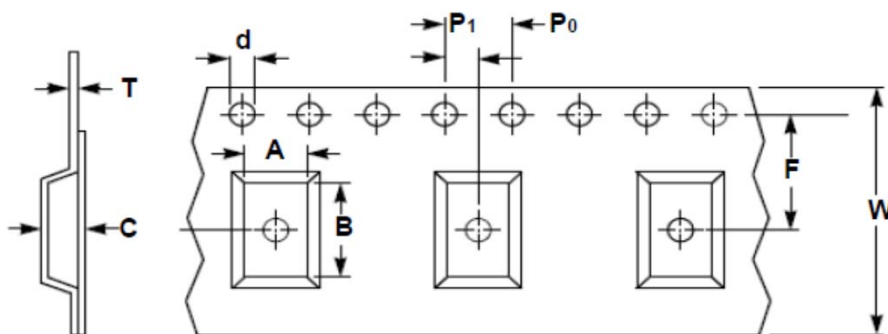
Note 1 : "xxx" is Device Code from "20LW" thru "40W".

Note 2 : Manufacture special control, if empty means no special control requirement.

Tape & Reel specification

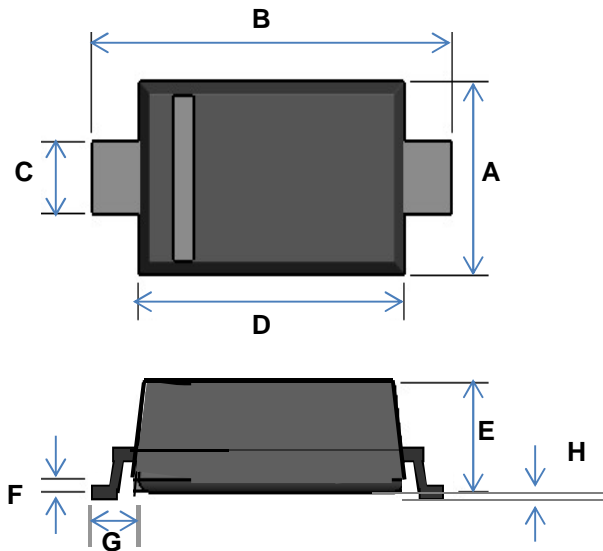


Item	Symbol	Dimension
Carrier width	A	1.85 ± 0.10
Carrier length	B	3.94 ± 0.10
Carrier depth	C	1.50 ± 0.10
Sprocket hole	d	1.5 ± 0.1
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	55 Min
Feed hole width	D2	13.0 ± 0.20
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.05
Sprocket 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



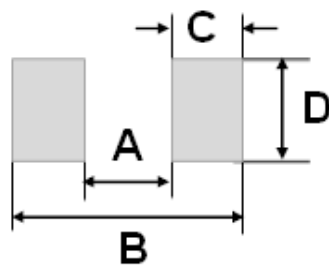
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Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.400	1.800	0.055	0.071
B	3.550	3.850	0.140	0.152
C	0.450	0.700	0.018	0.028
D	2.550	2.850	0.100	0.112
E	0.950	1.350	0.037	0.053
F	0.050	0.150	0.002	0.006
G	0.50 REF		0.02 REF	
H	-	0.100	-	0.004

Suggested PAD Layout



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
A	2.36	0.093
B	4.19	0.165
C	0.91	0.036
D	1.22	0.048

Marking

Part No.	Marking
B0520LW	SD
B0530W	SE
B0540W	SF