

## SOD-123 Plastic-Encapsulate Diodes

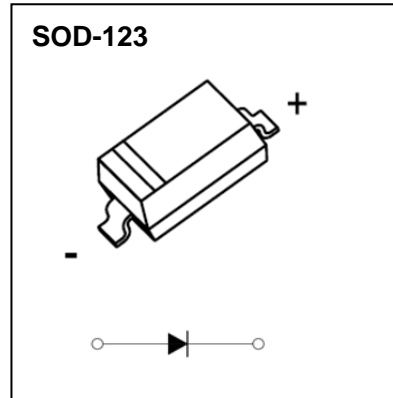
### B2020W SCHOTTKY BARRIER DIODE

#### FEATURES

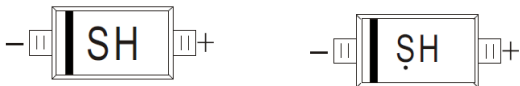
- Low Forward Voltage Drop
- Very Small SMD Package

#### APPLICATIONS

- Low Voltage Rectification
- High Efficiency DC/DC Conversion
- Switch Mode Power Supply
- Inverse Polarity Protection
- Low Power Consumption Applications



#### MARKING: SH



The marking bar indicates the cathode  
Solid dot = Green molding compound device, if none,  
the normal device.

#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted )

Symbol	Parameter	Value	Unit	
$V_{RRM}$	Peak Repetitive Reverse Voltage	20	V	
$V_{RWM}$	Working Peak Reverse Voltage			
$V_{R(RMS)}$	RMS Reverse Voltage	14	V	
$I_F$	Continuous Forward Current	2	A	
$I_{FSM}$	Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	9	A	
$P_D$	Power Dissipation	Note1	300	mW
		Note2	670	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	Note1	333	$^{\circ}\text{C}/\text{W}$
		Note2	149	$^{\circ}\text{C}/\text{W}$
$T_j$	Operating Junction Temperature Range	-40 ~ +125	$^{\circ}\text{C}$	
$T_{stg}$	Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$	

1: Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

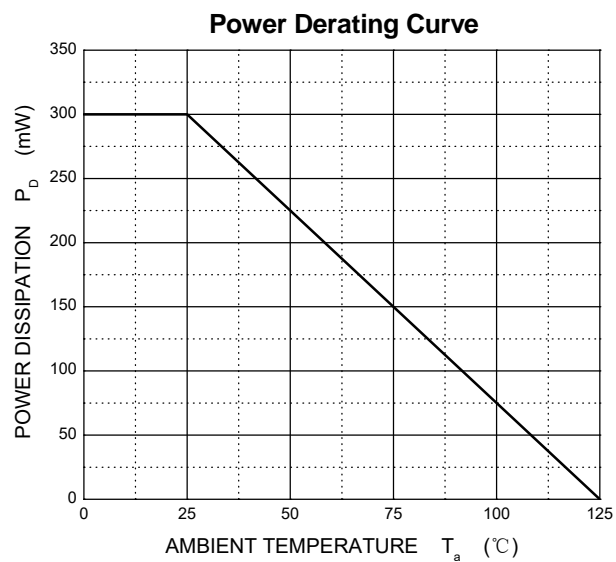
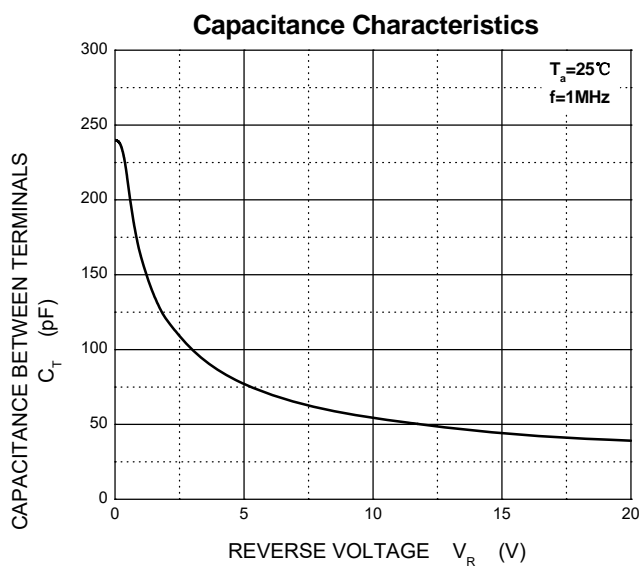
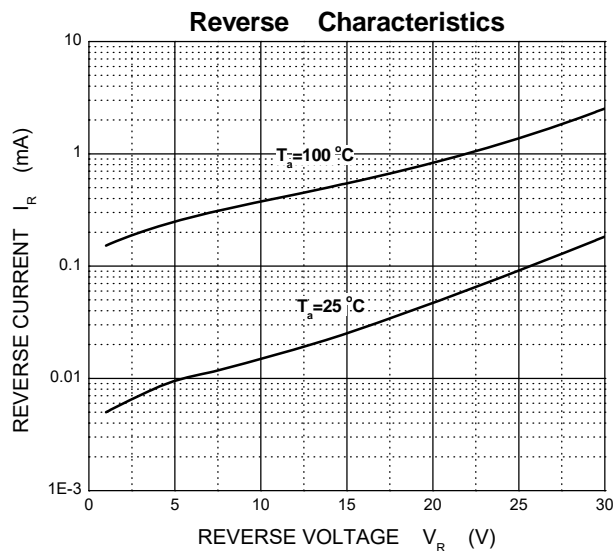
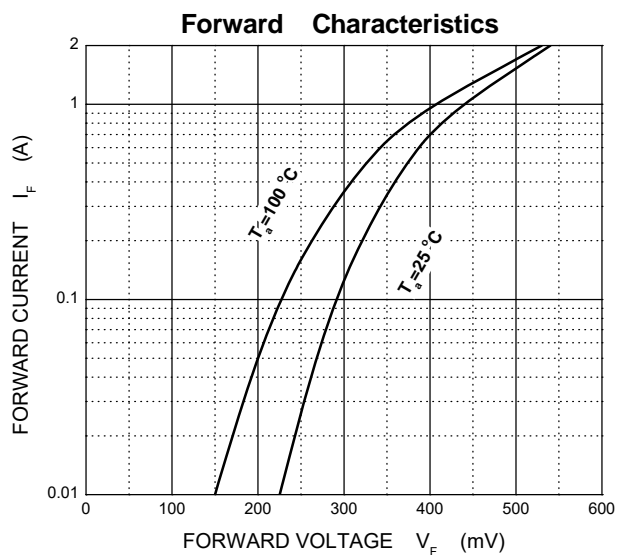
2: Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode  $1\text{cm}^2$ .

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

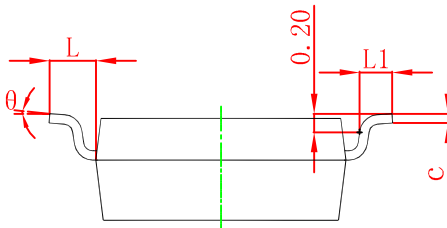
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R=1\text{mA}$	20			V
Reverse current	$I_R$	$V_R=10\text{V}$			80	$\mu\text{A}$
		$V_R=20\text{V}$			100	
Forward voltage	$V_F^*$	$I_F=1\text{A}$			0.45	V
		$I_F=2\text{A}$			0.55	
Total capacitance	$C_{tot}$	$V_R=4\text{V}, f=1\text{MHz}$			120	pF

\*Pulse test:  $t_p \leq 300 \mu\text{s}$ ;  $\delta \leq 0.02$ .

# Typical Characteristics

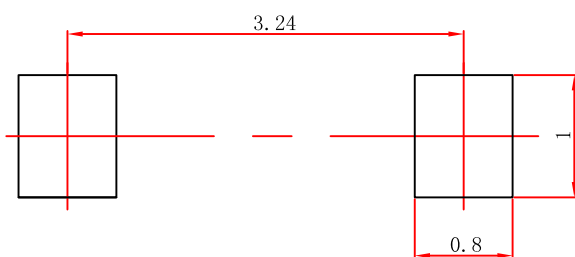


## SOD-123 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

## SOD-123 Suggested Pad Layout



### Note:

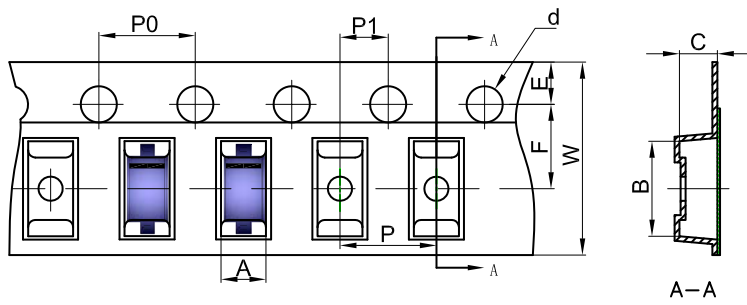
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

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# SOD-123 Tape and Reel

## SOD-123 Embossed Carrier Tape



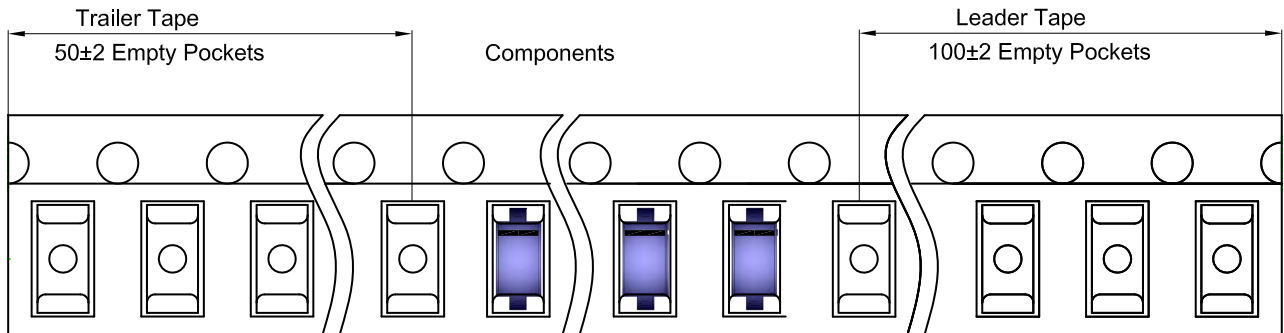
### Packaging Description:

SOD-123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

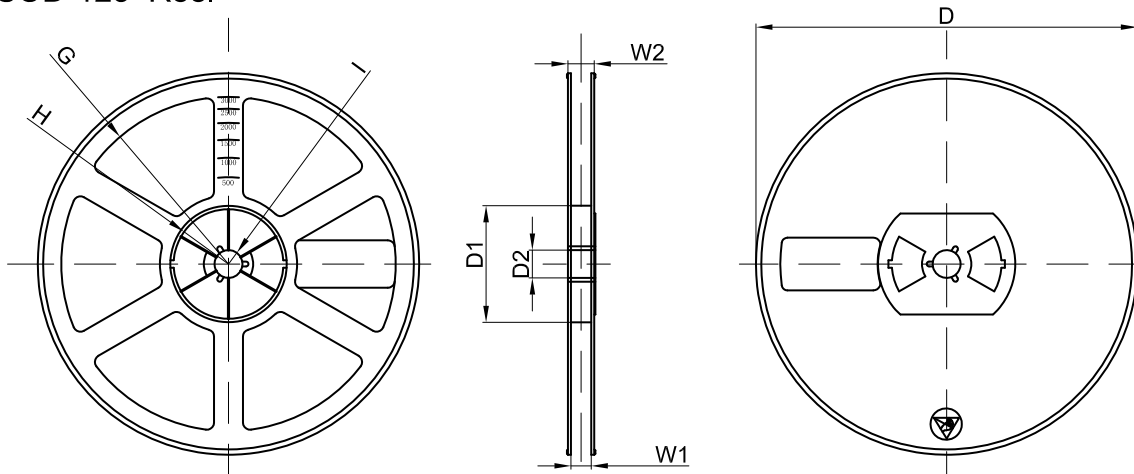
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-123	1.85	3.95	1.57	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

## SOD-123 Tape Leader and Trailer



## SOD-123 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	

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