

B0520W THRU B0540W

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

SOD-123 Surface Mount Schottky Barrier Rectifier

Features

- $V_R=20/30/40V$
- $I_{F(AV)}=0.5A$
- For use in low voltage, high frequency inverters
- Free wheeling, and polanty protection applications

Applications

The device is a single rectifier offering low VF and excellent high temperature stability.

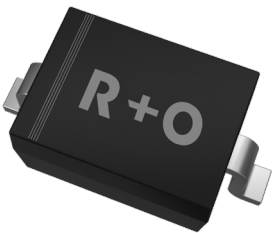
Mechanical Data

- Case: SOD-123
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026
- Polarity: Cathode line denotes the cathode end

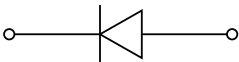
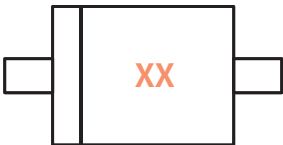
Function Diagram

Reverse Voltage
20/30/40 V
Forward Current
0.5 Ampere

SOD-123



Marking:
B0520W:SD
B0530W:SE
B0540W:Sf



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	B0520W	B0530W	B0540W
Maximum repetitive peak reverse voltage	V_{RRM}	V	20	30	40
Maximum RMS voltage	V_{RMS}	V	14	21	28
Maximum DC blocking voltage	V_{DC}	V	20	30	40
Maximum Average Forward Rectified Current	$I_{F(AV)}$	A	0.5		
Non-repetitive Peak Forward Surge Current @t=8.3ms Half-sine wave	I_{FSM}	A	5.5		
Power Dissipation	P_D	mW	500		
Junction temperature	T_j	°C	-55-+125		
Storage temperature range	T_{STG}	°C	-55-+150		
Typical thermal resistance	$R_{\theta J-A}$	°C /W	200		

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● **Electrical Characteristics** (Ta=25°C Unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	UNIT	B0520W	B0530W	B0540W
Maximum forward voltage	$I_F=0.1A$	V_{F1}	V	0.33	0.375	—
	$I_F=0.5A$	V_{F2}		0.385	0.43	0.51
	$I_F=1.0A$	V_{F3}		—	—	0.62
Maximum reverse current	$V_R=10V$	I_R	mA	0.075	—	—
	$V_R=15V$			—	0.02	—
	$V_R=20V$			0.25	—	0.01
	$V_R=30V$			—	0.13	—
	$V_R=40V$			—	—	0.02
Capacitance between terminals	$V_R=0V, f=1MHz$	C_T	pF	170		

● **Ratings And Characteristics Curves** (Ta=25°C Unless otherwise specified)

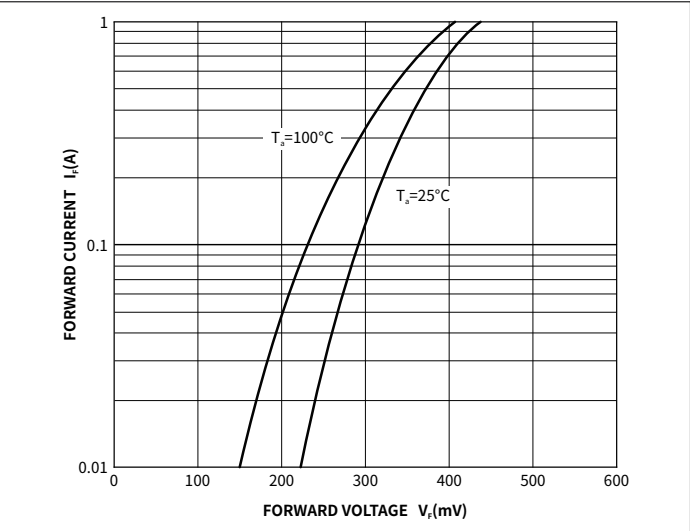


Fig.1 Typical Instantaneous Forward Characteristics

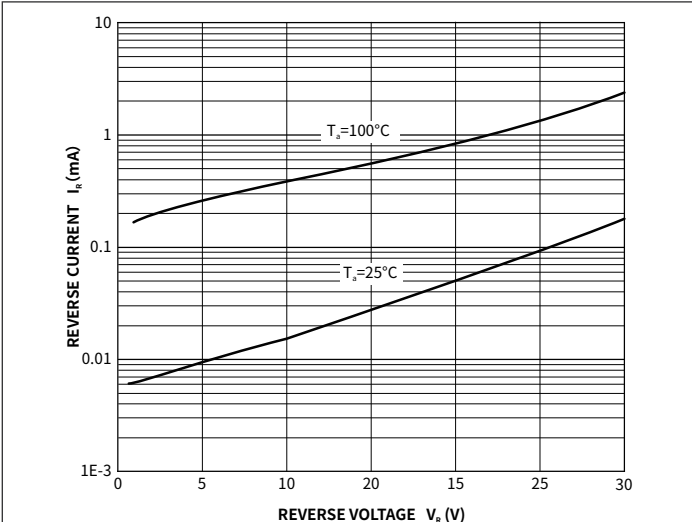


Fig.2 Typical Reverse Characteristics

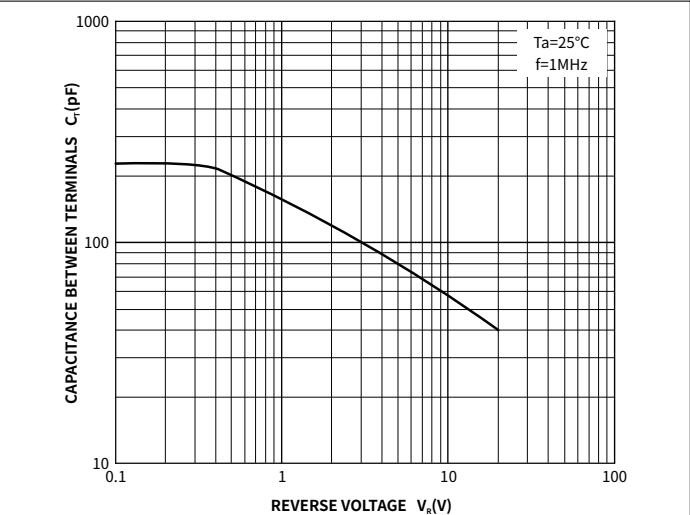


Fig.3 Typical Junction Capacitance

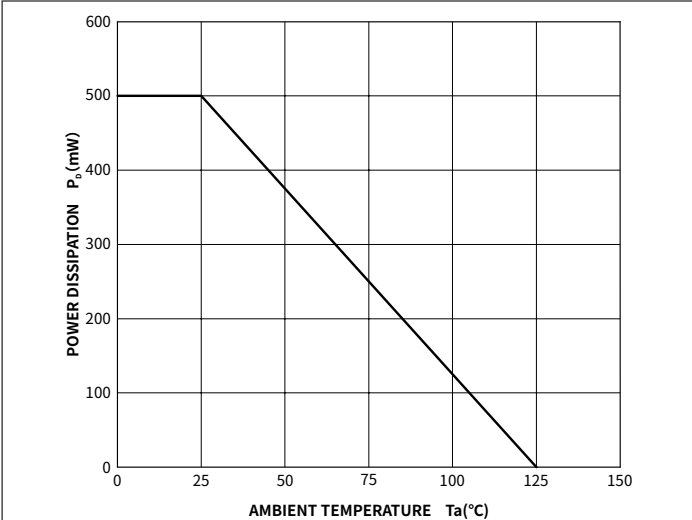


Fig.4 Power Derating Curve

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● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123	R1	0.012	3000	45000	180000	7"

● Package Outline Dimensions (SOD-123)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.55	3.85	0.140	0.152
B	2.55	2.85	0.100	0.112
C	1.40	1.80	0.055	0.071
D	0.95	1.35	0.140	0.152
E	0.51	0.71	0.037	0.053
F	-	0.15	-	0.006
G	0.15	0.45	0.006	0.008
H	0.08	0.25	0.003	0.010
θ	-	8°	-	8°

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.91	-	0.036	-
K	-	2.36	-	0.092
M	1.22	-	0.048	-