



# SOD-123 Plastic-Encapsulate Diode

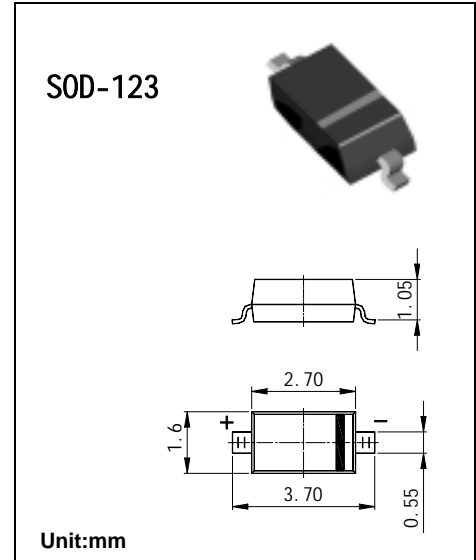
## B0520LW, B0530W, B0540W SCHOTTKY RECTIFIER

### Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance

### Marking:

**B0520LW:SD**  
**B0530W:SE**  
**B0540W:SF**



### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	B0520LW	B0530W	B0540W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	V
Average Rectified Output Current @ T <sub>L</sub> = 100°C	I <sub>O</sub>	0.5			A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	5.5			A
Power Dissipation (Note 1)	P <sub>d</sub>	410			mW
Typical Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	244			°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125			°C
Voltage Rate of Change	dv/dt	1000			V/μs

### Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	B0520LW	B0530W	B0540W	Unit	Test Conditions
Minimum Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	20 — —	— 30 —	— — 40	V	I <sub>F</sub> = 250μA I <sub>R</sub> = 130μA I <sub>R</sub> = 20μA
Maximum Forward Voltage Drop (Note 2)	V <sub>FM</sub>	0.300 0.385 — 0.220 0.330 —	0.375 0.430 — — — —	— 0.510 0.620 — 0.460 0.610	V	I <sub>F</sub> = 0.1A, T <sub>J</sub> = 25°C I <sub>F</sub> = 0.5A, T <sub>J</sub> = 25°C I <sub>F</sub> = 1.0A, T <sub>J</sub> = 25°C I <sub>F</sub> = 0.1A, T <sub>J</sub> = 100°C I <sub>F</sub> = 0.5A, T <sub>J</sub> = 100°C I <sub>F</sub> = 1.0A, T <sub>J</sub> = 100°C
Maximum Leakage Current (Note 2)	I <sub>RM</sub>	75 — 250 — —	— 20 — 130 —	— — 10 — 20	μA	V <sub>R</sub> = 10V, T <sub>J</sub> = 25°C V <sub>R</sub> = 15V, T <sub>J</sub> = 25°C V <sub>R</sub> = 20V, T <sub>J</sub> = 25°C V <sub>R</sub> = 30V, T <sub>J</sub> = 25°C V <sub>R</sub> = 40V, T <sub>J</sub> = 25°C
		5.0 8.0 —	— — —	— 5.0 13	mA	V <sub>R</sub> = 10V, T <sub>J</sub> = 100°C V <sub>R</sub> = 20V, T <sub>J</sub> = 100°C V <sub>R</sub> = 40V, T <sub>J</sub> = 100°C
Junction Capacitance	C <sub>j</sub>	170			pF	f = 1MHz, V <sub>R</sub> = 0V DC

- Notes: 1. Valid provided that leads are kept at ambient temperature.  
 2. Pulse Test: Pulse width = 300μs, Duty Cycle ≤ 2%.

# Typical Characteristics

# B0520LW, B0530W, B0540W

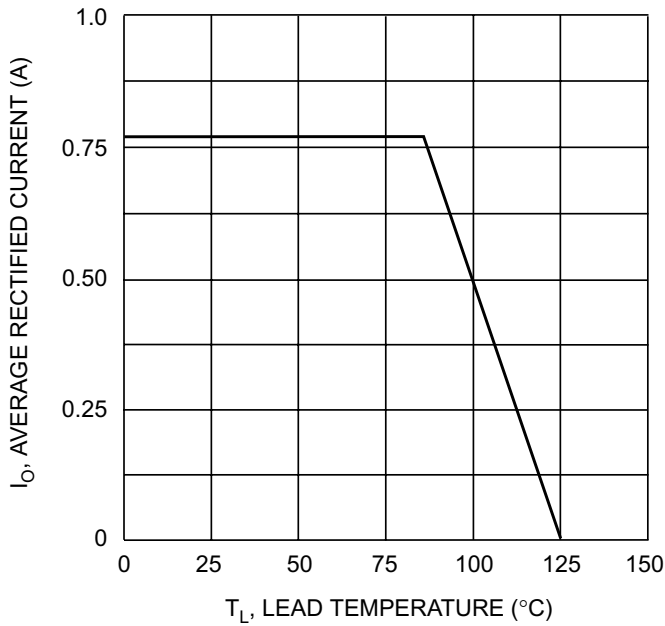


Fig. 1 Forward Current Derating Curve

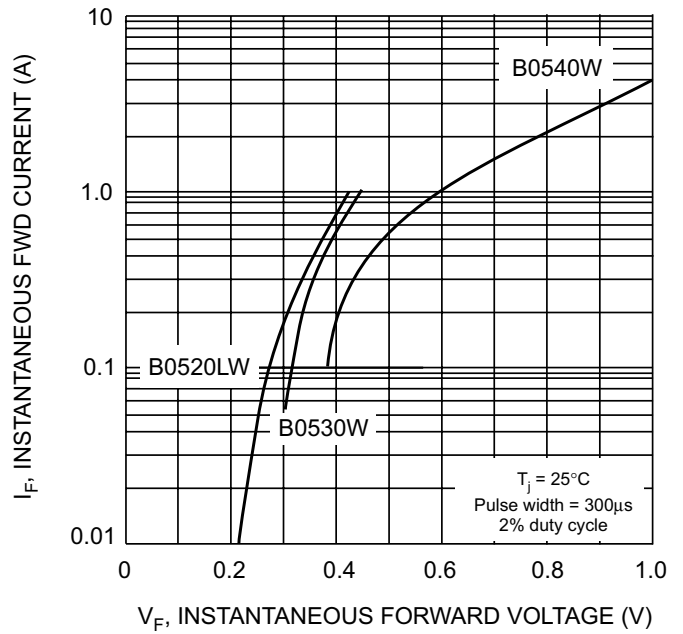


Fig. 2 Typical Forward Characteristics

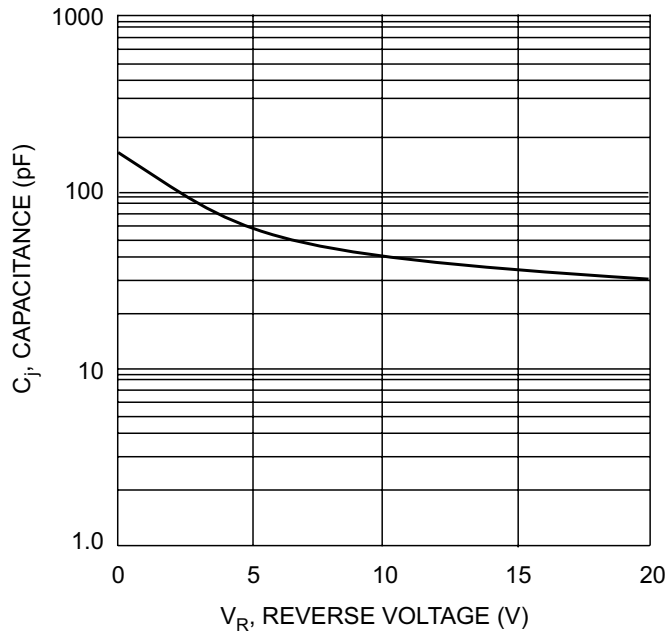
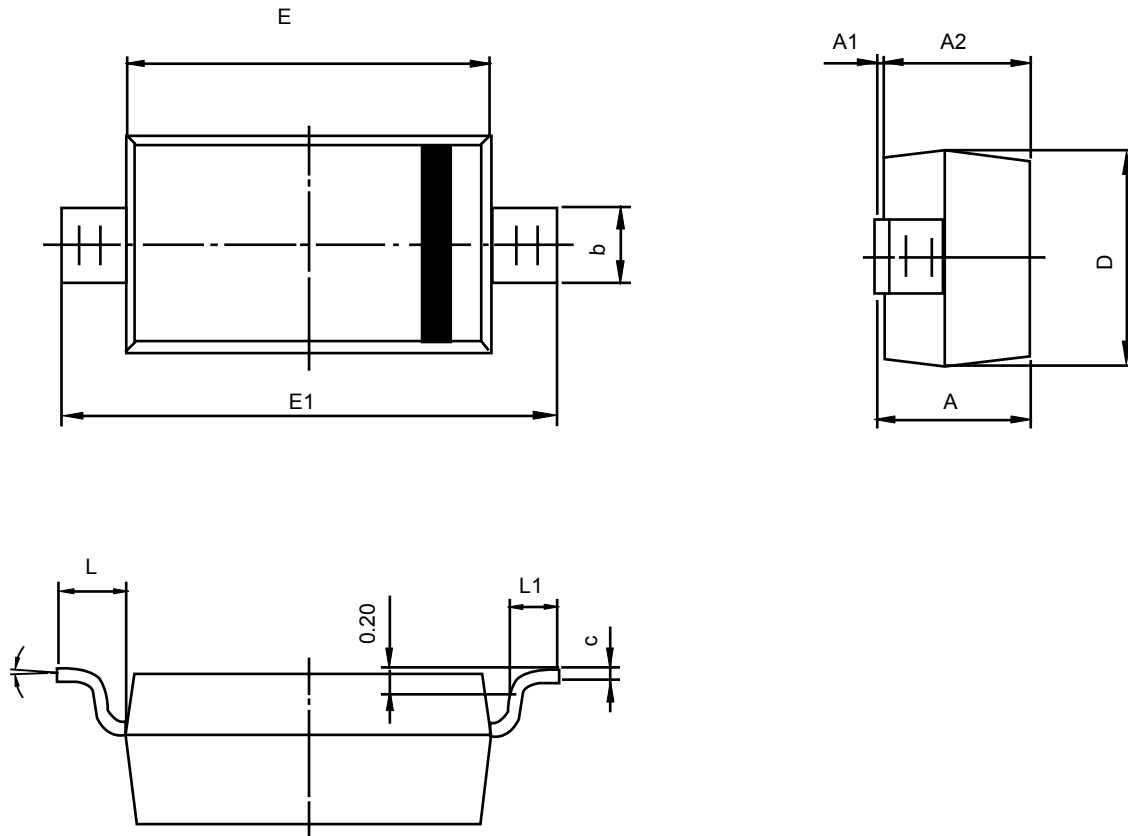


Fig. 3 Typ. Junction Capacitance vs Reverse Voltage

## SOD-123 PACKAGE OUTLINE DIMENSIONS



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