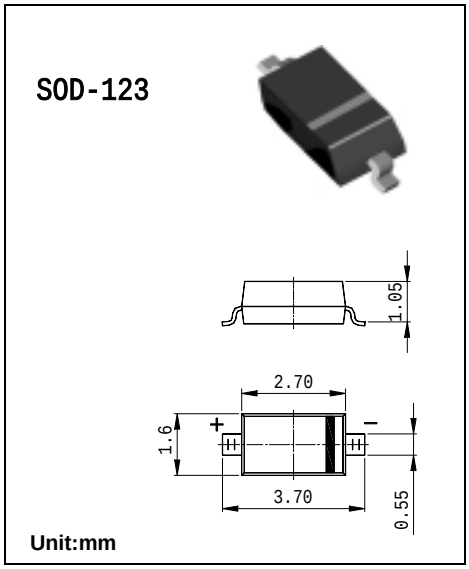
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

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_A = 25°C unless otherwise specified

Characteristic	Symbol	B0520LW	B0530W	B0540W	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	V
Average Rectified Output Current @ T_L = 100°C	I_O	0.5			A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	5.5			A
Power Dissipation (Note 1)	P_d	410			mW
Typical Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	244			°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +125			°C
Voltage Rate of Change	dv/dt	1000			V/μs

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	B0520LW	B0530W	B0540W	Unit	Test Conditions
Minimum Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	20 — —	— 30 —	— — 40	V	I_R = 250μA I_R = 130μA I_R = 20μA
Maximum Forward Voltage Drop (Note 2)	V_{FM}	0.300 0.385 — 0.220 0.330 —	0.375 0.430 — — — —	— 0.510 0.620 — 0.460 0.610	V	I_F = 0.1A, T_j = 25°C I_F = 0.5A, T_j = 25°C I_F = 1.0A, T_j = 25°C I_F = 0.1A, T_j = 100°C I_F = 0.5A, T_j = 100°C I_F = 1.0A, T_j = 100°C
Maximum Leakage Current (Note 2)	I_{RM}	75 — 250 — —	— 20 — 130 —	— — 10 — 20	μA	V_R = 10V, T_j = 25°C V_R = 15V, T_j = 25°C V_R = 20V, T_j = 25°C V_R = 30V, T_j = 25°C V_R = 40V, T_j = 25°C
		5.0 8.0 —	— — —	— 5.0 13	mA	V_R = 10V, T_j = 100°C V_R = 20V, T_j = 100°C V_R = 40V, T_j = 100°C
Junction Capacitance	C_j	170			pF	f = 1MHz, V_R = 0V DC

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

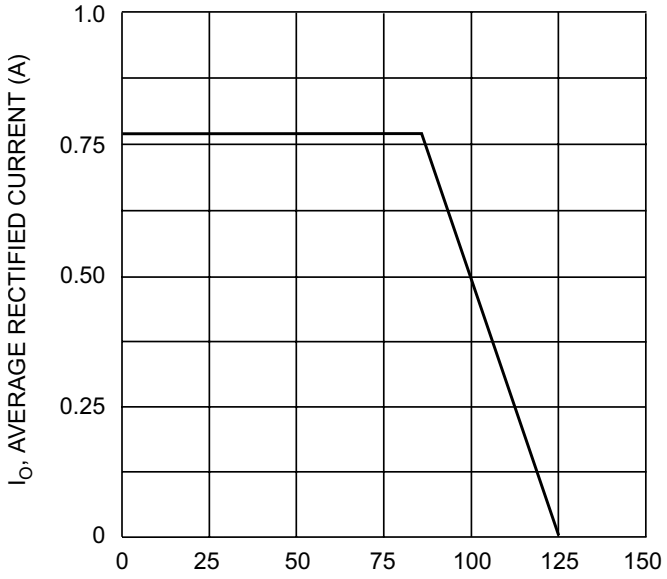


Fig. 1 Forward Current Derating Curve

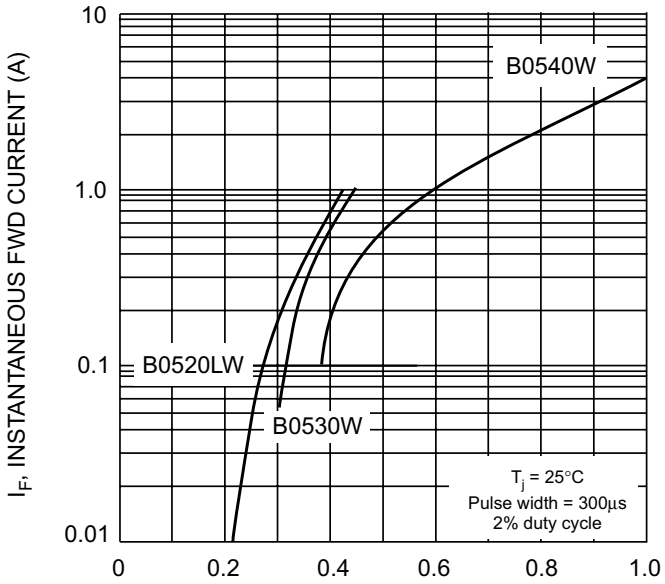


Fig. 2 Typical Forward Characteristics

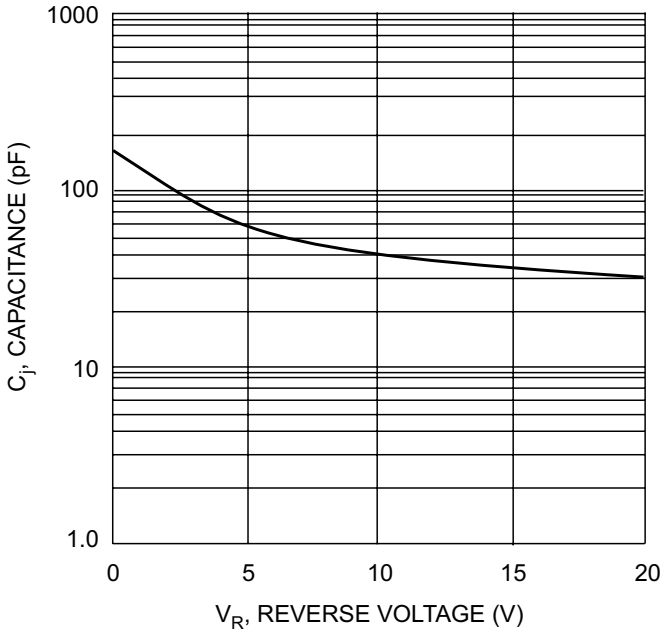
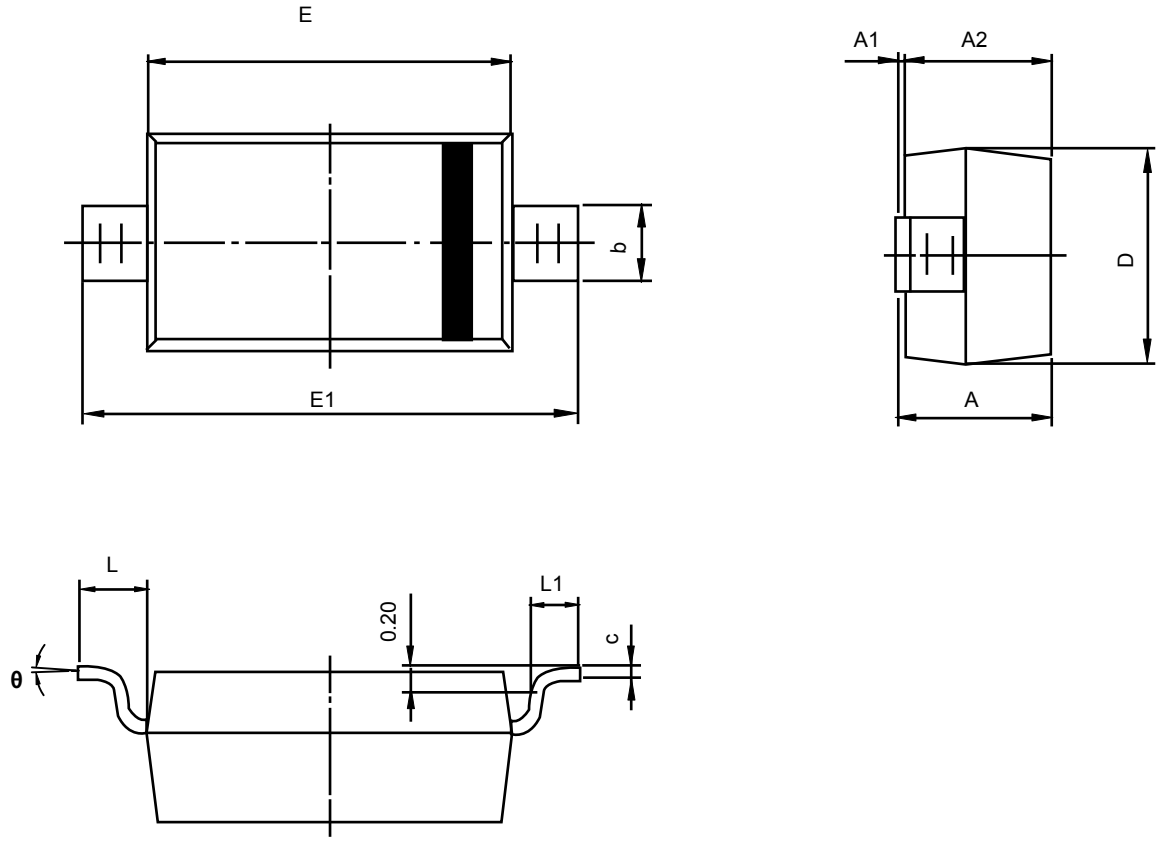


Fig. 3 Typ. Junction Capacitance vs Reverse Voltage

SOD-123 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
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	0.500REF		0.020REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°