Description

The B0540WS is a Schottky Barrier Diode (SBD) in the SOD-323 package, engineered for applications requiring low forward voltage drop and high conductance. With guard ring construction for transient protection, this diode ensures reliable performance in diverse electronic circuits. It is also offered in a lead-free version, meeting environmental compliance standards.

Features

- Ultra-low forward voltage drop for efficient power transfer.
- Guard ring construction to protect against transient voltage spikes.
- High conductance for low resistance and improved current flow.
- Lead-free version available for eco-friendly applications.
- Compact SOD-323 package suitable for space-constrained designs.

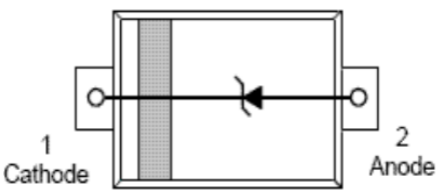
Application

- Power supplies and voltage regulators.
- Rectification in low-voltage, high-frequency circuits.
- Transient protection in signal and power lines.
- DC-DC converters and battery management systems.
- Consumer electronics and portable devices.

Marking Diagram



Circuit Diagram



Ordering information

DEVICE	PACKAGE
B0540WS	3000/Tape & Reel

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Maximum Ratings (T_A=25℃)

Parameter	Symbol	Value	Unit
Peak Repetitive Peak reverse voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
RMS Reverse Voltage Reverse voltage (DC)	$V_{R(RMS)}$	28	V
Average rectified output Current	I_o	0.5	A
Forward current surge peak	I_{FSM}	5.5	A
Power dissipation	P_D	200	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	℃/W
Junction temperature	T_j	150	℃
Storage temperature	T_{STG}	-65~+150	℃
Voltage Rate of Change	dv/dt	1000	V/μS

Electronic Characteristics (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit	Conditions
Minimum Reverse Breakdown Voltage	$V_{(BR)R}$	--	V	I_R=250μA
		--		I_R=500μA
		40		I_R=20μA
Forward voltage	V_{F1}	--	V	I_F=0.1A
	V_{F2}	0.510		I_F=0.5A
	V_{F3}	0.62		I_F=1A
Reverse current	I_{R1}	--	μA	V_R=10V
	I_{R2}	--		V_R=15V
Reverse current	I_{R3}	10	μA	V_R=20V
	I_{R4}	--		V_R=30V
	I_{R5}	20		V_R=40V
Capacitance between terminals	C_T	170	pF	V_R=0,f=1MHz

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Typical Performance Curves

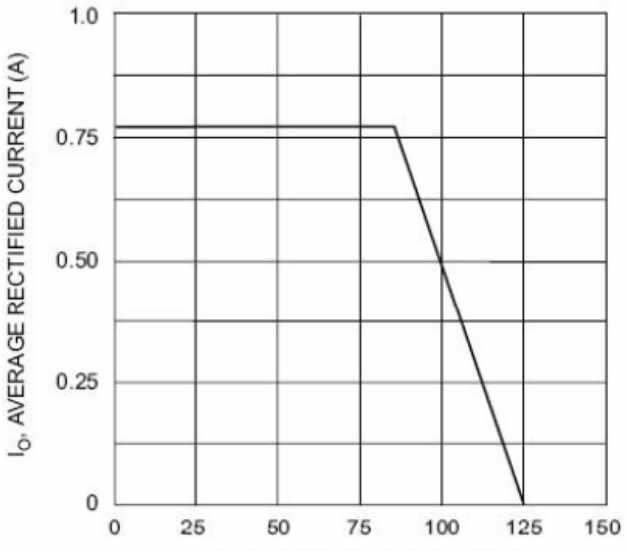


Fig. 1 Forward Current Derating Curve

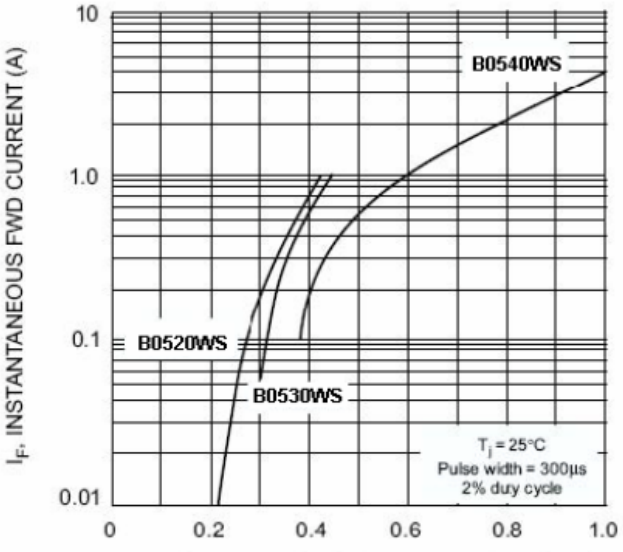


Fig. 2 Typical Forward Characteristics

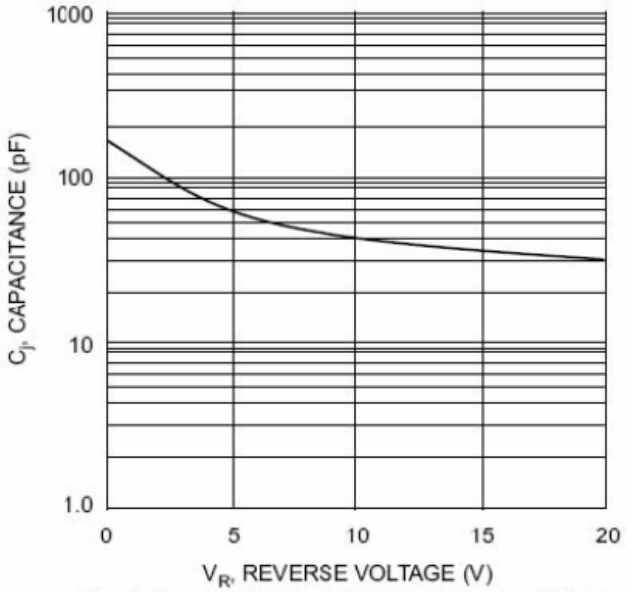
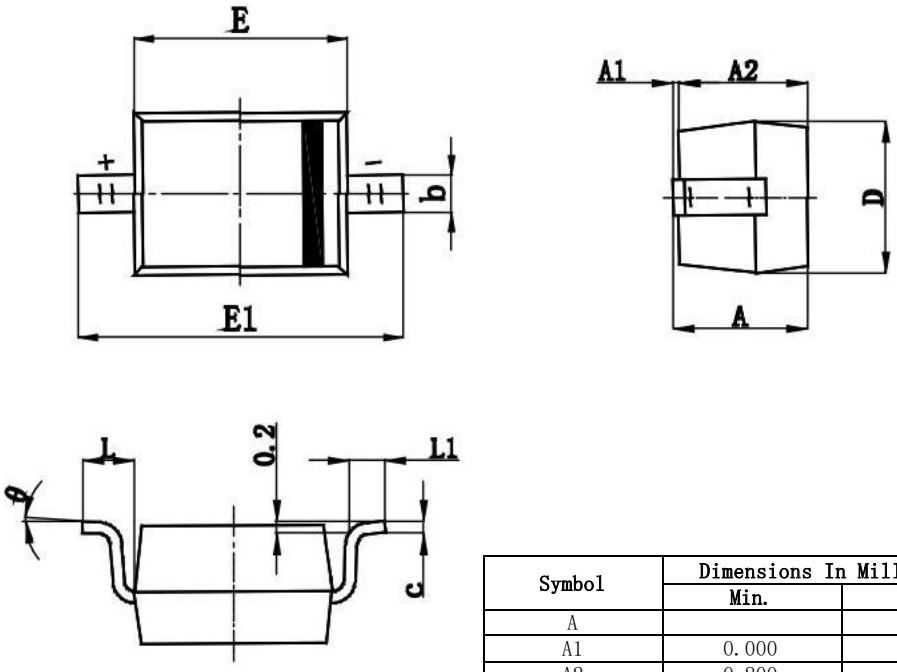


Fig. 3 Typ. Junction Capacitance vs Reverse Voltage

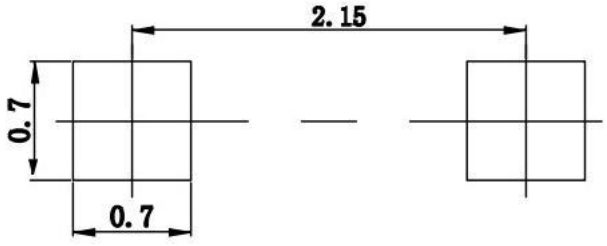
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SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475 REF.		0.019 REF.	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

S0D-323 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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