



Silicon Planar Zener Diodes: BZT52BxxxS Series

Rev.0.2

FEATURE

- ◇ Total power dissipation :max 200mW.
- ◇ Small plastic package suitable for surface mounted design.
- ◇ High reliability.



SOD-323

DESCRIPTION

- ◇ Silicon planar zener diode in a small plastic.
- ◇ SMD SOD-323 package.



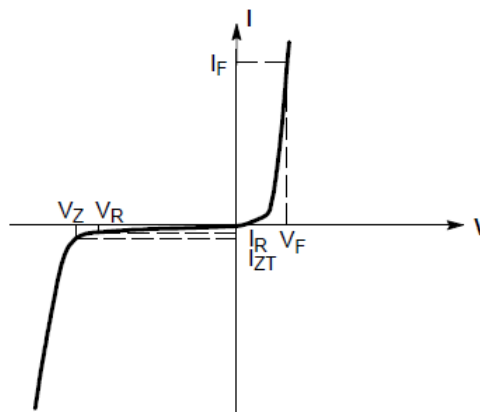
symbol

ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @ $T_A=25^\circ\text{C}$	P_D	200	mW
Thermal resistance junction to ambient	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction temperature range	T_j	-55 to+150	$^\circ\text{C}$
Storage temperature range	T_s	-55 to+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Symbol	Parameter
V_Z	Reverse zener voltage at I_{ZT}
I_{ZT}	Reverse current
Z_{ZT}	Maximum zener impedance at I_{ZT}
I_R	Reverse leakage current at V_R
V_R	Reverse voltage
I_F	Forward current
V_F	Forward voltage at I_F



Zener voltage regulator

MARKING



2W8: Device Marking Code

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)Maximum $V_F=0.9\text{V}$ at $I_F=10\text{mA}$

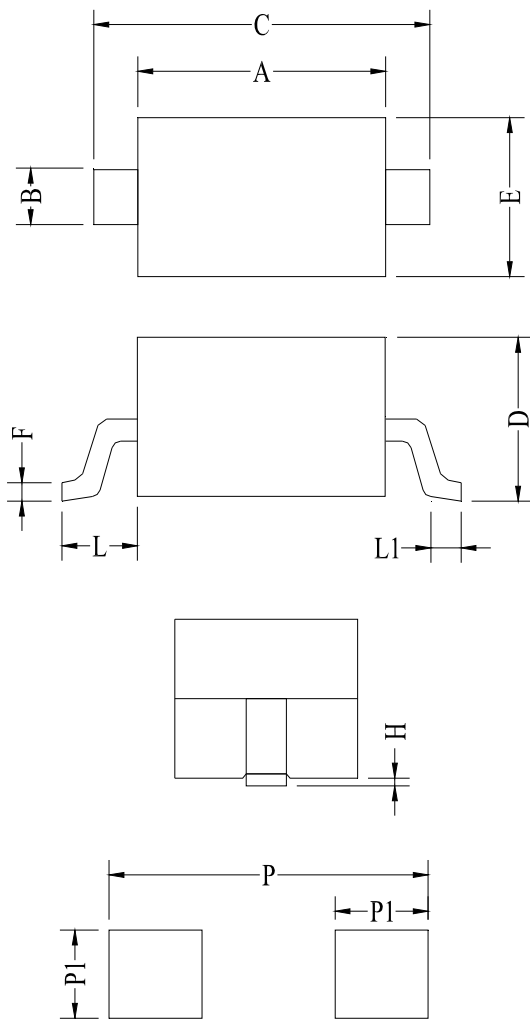
Type number	Zener voltage range at $I_{ZT}^{1)}$				Maximum zener impedance			Maximum reverse leakage current		Marking
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{ZT} (mA)	Z_{ZT} (Ω)	Z_{ZK} (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (Volts)	
BZT52B5V1S	5.1	5.00	5.20	5.0	60	480	1.0	2	2.0	2W8
BZT52B5V6S	5.6	5.49	5.71	5.0	40	400	1.0	1	2.0	2W9
BZT52B6V2S	6.2	6.08	6.32	5.0	10	150	1.0	3	4.0	2WA
BZT52B6V8S	6.8	6.66	6.94	5.0	15	80	1.0	2	4.0	2WB
BZT52B7V5S	7.5	7.35	7.65	5.0	15	80	1.0	1	5.0	2WC
BZT52B8V2S	8.2	8.04	8.36	5.0	15	80	1.0	0.7	5.0	2WD
BZT52B9V1S	9.1	8.92	9.28	5.0	15	100	1.0	0.5	6.0	2WE
BZT52B10S	10	9.80	10.20	5.0	20	150	1.0	0.2	7.0	2WF
BZT52B11S	11	10.78	11.22	5.0	20	150	1.0	0.1	8.0	2WG
BZT52B12S	12	11.76	12.24	5.0	25	150	1.0	0.1	8.0	2WH
BZT52B13S	13	12.74	13.26	5.0	30	170	1.0	0.1	8.0	2WI
BZT52B15S	15	14.70	15.30	5.0	30	200	1.0	0.1	10.5	2WJ
BZT52B16S	16	15.68	16.32	5.0	40	200	1.0	0.1	11.2	2WK
BZT52B18S	18	17.64	18.36	5.0	45	225	1.0	0.1	12.6	2WL
BZT52B20S	20	19.60	20.40	5.0	55	225	1.0	0.1	14.0	2WM
BZT52B22S	22	21.56	22.44	5.0	55	250	1.0	0.1	15.4	2WN
BZT52B24S	24	23.52	24.48	5.0	70	250	1.0	0.1	16.8	2WO
BZT52B27S	27	26.46	27.54	2.0	80	300	0.5	0.1	18.9	2WP
BZT52B30S	30	29.40	30.60	2.0	80	300	0.5	0.1	21.0	2WQ
BZT52B33S	33	32.34	33.66	2.0	80	325	0.5	0.1	23.1	2WR
BZT52B36S	36	35.28	36.72	2.0	90	350	0.5	0.1	25.2	2WS
BZT52B39S	39	38.22	39.78	2.0	130	350	0.5	0.1	27.3	2WT
BZT52B43S	43	42.14	43.86	2.0	100	700	1.0	0.1	32.0	2WU

1) V_Z is tested with pulses(10ms)

ORDERING INFORMATION

BZT	52	B	5V1	S
Zener Diode Series	Pd:200mW	B:2% Vz Voltage tolerance	Voltage:5.1V	Package:SOD-323

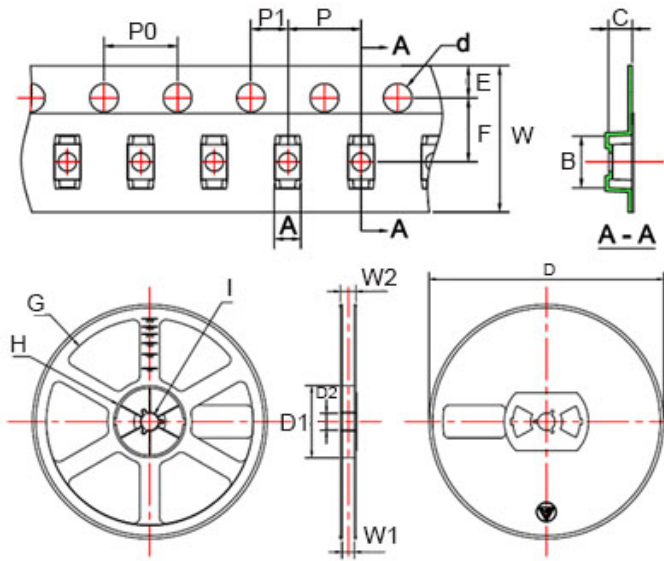
PACKAGE MECHANICAL DATA



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	0.25	0.35	0.010	0.014
C	2.50	2.70	0.098	0.106
D	0.00	1.00	0.000	0.039
E	1.20	1.40	0.047	0.055
F	0.08	0.15	0.003	0.006
L	0.475REF		0.019REF	
L1	0.25	0.40	0.010	0.016
H	0.00	0.10	0.000	0.004
P	3.00		0.118	
P1	0.80		0.031	

Land Pattern

TAPE AND REEL INFORMATION-SOD-323



Symbol	Millimeters	Inches
A	1.46±0.05	0.057±0.002
B	2.90±0.05	0.114±0.002
C	1.25±0.05	0.049±0.002
d	∅1.50±0.1	∅0.059±0.004
E	1.75±0.1	0.069±0.004
F	3.50±0.1	0.138±0.004
P0	4.0±0.1	0.157±0.004
P	4.0±0.1	0.157±0.004
P1	2.0±0.1	0.079±0.004
W	8.00+0.3/-0.1	0.315+0.012/-0.004
D	∅178.0±2	∅7.008±0.079
D1	54.40±1	2.142±0.039
D2	13.0±1	0.512±0.039
G	R78.0±1	R3.071±0.039
H	R25.60±1	R1.008±0.039
I	R6.50±1	R0.256±0.039
W1	9.50±1	0.374±0.039
W2	12.30±1	0.484±0.039

Packaging description:

SOD-323 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. The reels are blue in color and made of recyclable plastic.

ORDERING INFORMATION

Part Number	Package	Reel Size	Quantity Per Reel
BZT52BxxxS	SOD-323	7 Inch	3,000 pcs

RATINGS AND CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

Fig.1 Power dissipation vs ambient temperature

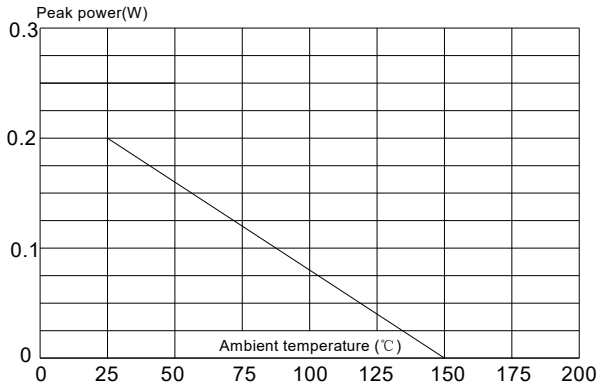


Fig.2 Zener breakdown characteristics

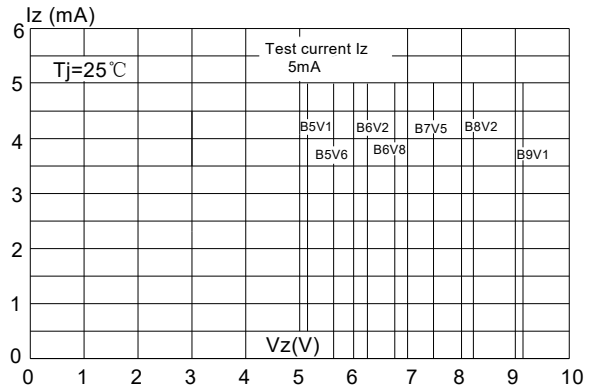


Fig.3 Zener breakdown characteristics

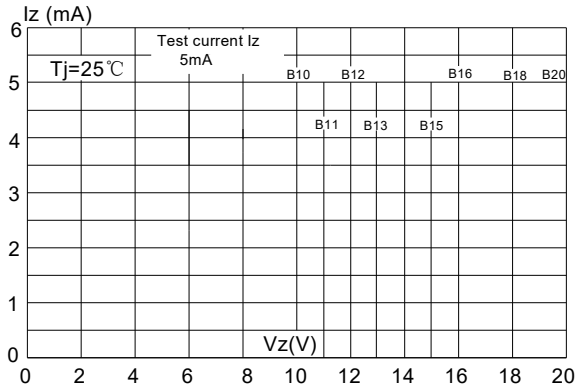
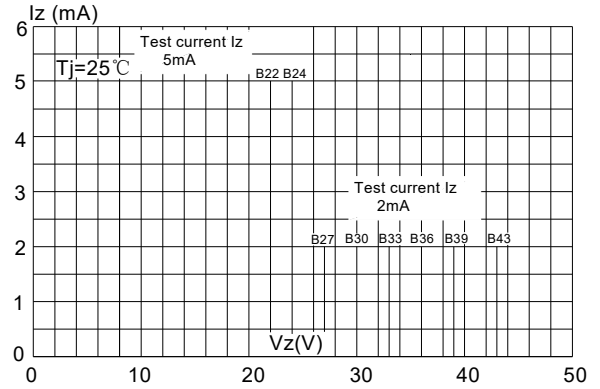


Fig.4 Zener breakdown characteristics




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