



Silicon Planar Zener Diodes: BZT52CxxxS 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.



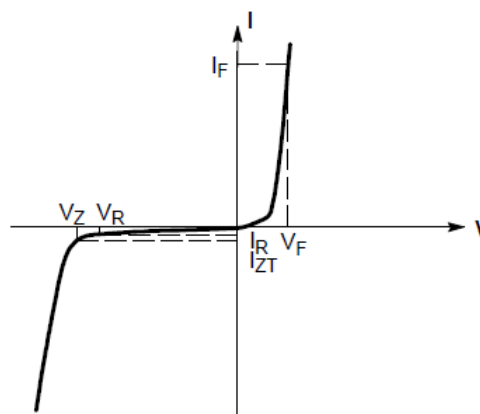
symbol

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	$^\circ\text{C/W}$
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

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)	
BZT52C2V4S	2.4	2.28	2.52	5.0	100	600	1.0	50	1.0	WX
BZT52C2V7S	2.7	2.57	2.84	5.0	100	600	1.0	20	1.0	W1
BZT52C3V0S	3.0	2.85	3.15	5.0	95	600	1.0	10	1.0	W2
BZT52C3V3S	3.3	3.14	3.47	5.0	95	600	1.0	5	1.0	W3
BZT52C3V6S	3.6	3.42	3.78	5.0	90	600	1.0	5	1.0	W4
BZT52C3V9S	3.9	3.71	4.10	5.0	90	600	1.0	3	1.0	W5
BZT52C4V3S	4.3	4.09	4.52	5.0	90	600	1.0	3	1.0	W6
BZT52C4V7S	4.7	4.47	4.94	5.0	80	500	1.0	3	2.0	W7
BZT52C5V1S	5.1	4.85	5.36	5.0	60	480	1.0	2	2.0	W8
BZT52C5V6S	5.6	5.32	5.88	5.0	40	400	1.0	1	2.0	W9
BZT52C6V2S	6.2	5.89	6.51	5.0	10	150	1.0	3	4.0	WA
BZT52C6V8S	6.8	6.46	7.14	5.0	15	80	1.0	2	4.0	WB
BZT52C7V5S	7.5	7.13	7.88	5.0	15	80	1.0	1	5.0	WC
BZT52C8V2S	8.2	7.79	8.61	5.0	15	80	1.0	0.7	5.0	WD
BZT52C9V1S	9.1	8.65	9.56	5.0	15	100	1.0	0.5	6.0	WE
BZT52C10S	10	9.50	10.50	5.0	20	150	1.0	0.2	7.0	WF
BZT52C11S	11	10.45	11.55	5.0	20	150	1.0	0.1	8.0	WG
BZT52C12S	12	11.40	12.60	5.0	25	150	1.0	0.1	8.0	WH
BZT52C13S	13	12.35	13.65	5.0	30	170	1.0	0.1	8.0	WI
BZT52C15S	15	14.25	15.75	5.0	30	200	1.0	0.1	10.5	WJ
BZT52C16S	16	15.20	16.80	5.0	40	200	1.0	0.1	11.2	WK
BZT52C18S	18	17.10	18.90	5.0	45	225	1.0	0.1	12.6	WL
BZT52C20S	20	19.00	21.00	5.0	55	225	1.0	0.1	14.0	WM
BZT52C22S	22	20.90	23.10	5.0	55	250	1.0	0.1	15.4	WN
BZT52C24S	24	22.80	25.20	5.0	70	250	1.0	0.1	16.8	WO
BZT52C27S	27	25.65	28.35	2.0	80	300	0.5	0.1	18.9	WP
BZT52C30S	30	28.50	31.50	2.0	80	300	0.5	0.1	21.0	WQ
BZT52C33S	33	31.35	34.65	2.0	80	325	0.5	0.1	23.1	WR
BZT52C36S	36	34.20	37.80	2.0	90	350	0.5	0.1	25.2	WS
BZT52C39S	39	37.05	40.95	2.0	130	350	0.5	0.1	27.3	WT
BZT52C43S	43	40.85	45.15	2.0	130	350	0.5	0.1	29.4	WU
BZT52C47S	47	44.65	49.35	2.0	170	1000	0.25	0.1	36	WV
BZT52C51S	51	48.45	53.55	2.0	180	1300	0.25	0.1	39	X1

 1) V_Z is tested with pulses(10ms)

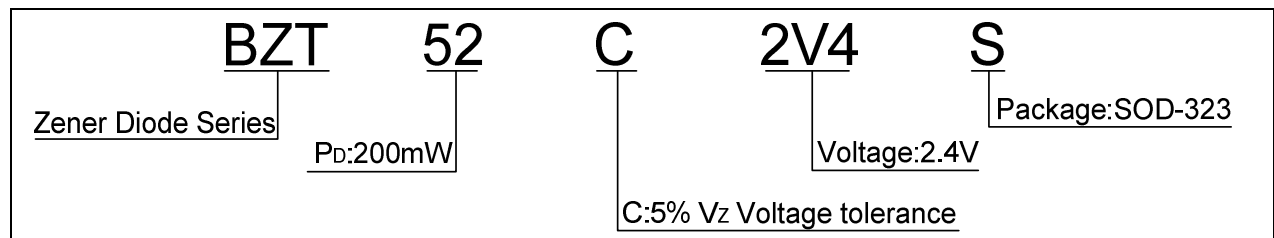
ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted, continued)

Maximum $V_F=0.9\text{V}$ at $I_F=10\text{mA}$

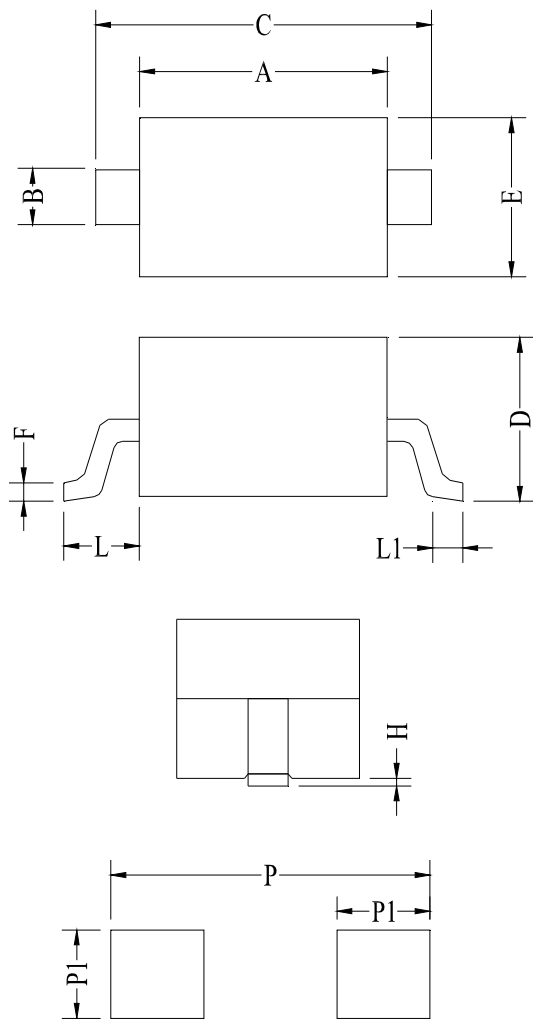
Type number	Zener voltage range at $I_{ZT}^{1)}$				Maximum zener impedance			Maximum reverse leakage current		Marking
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{ZT} (mA)	Z_{ZT} (Ω)	Z_{ZK} (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (Volts)	
BZT52C56S	56	53.20	58.80	2.0	200	1400	0.25	0.1	43	X2
BZT52C62S	62	58.90	65.10	2.0	225	1400	0.25	0.1	47	X3
BZT52C68S	68	64.60	71.40	2.0	240	1600	0.25	0.1	52	X4
BZT52C75S	75	71.25	78.75	2.0	265	1700	0.25	0.1	56	X5

1) V_Z is tested with pulses(10ms)

ORDERING INFORMATION



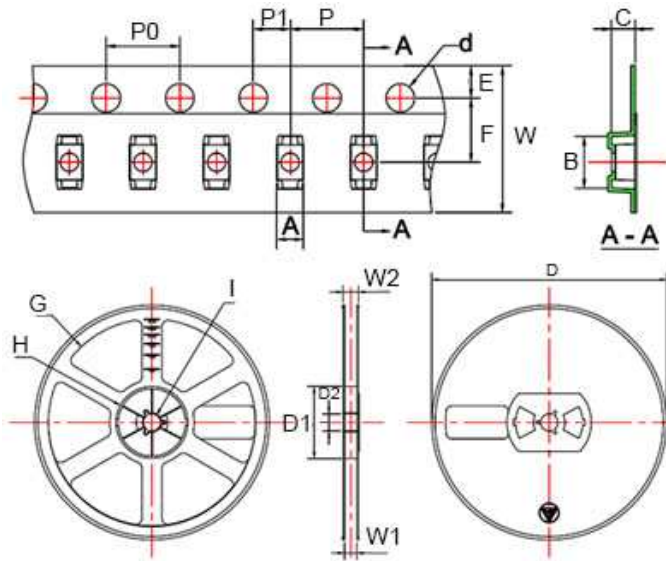
PACKAGE MECHANICAL DATA



Land Pattern

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	

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
BZT52CxxxS	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

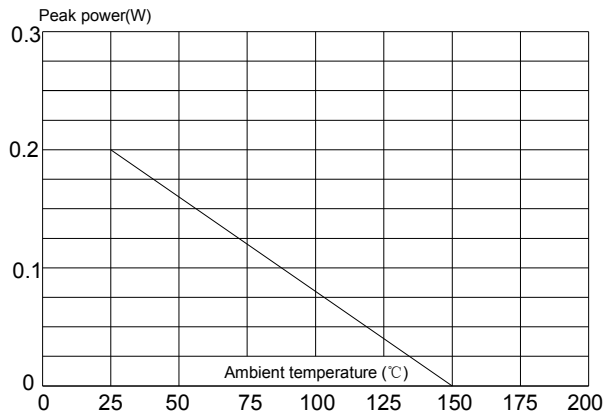


Fig.2 Zener breakdown characteristics

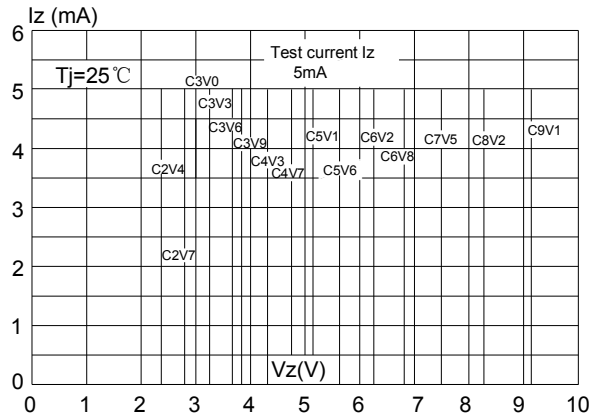


Fig.3 Zener breakdown characteristics

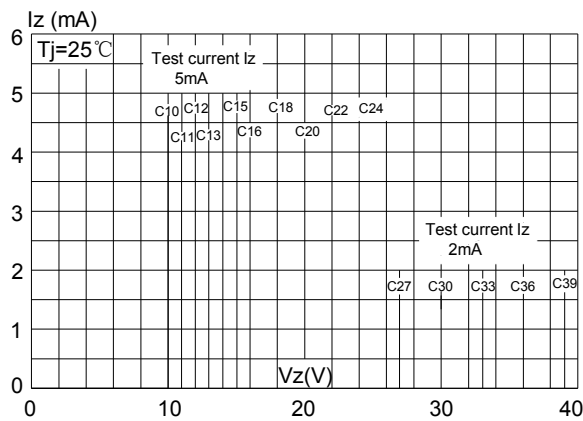
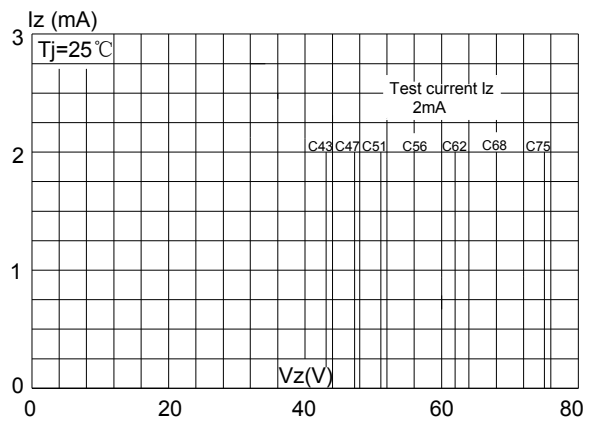



Fig.4 Zener breakdown characteristics



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