Silicon Planar Zener Diodes：BZT52CxxxS Series

Rev.1.1

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.

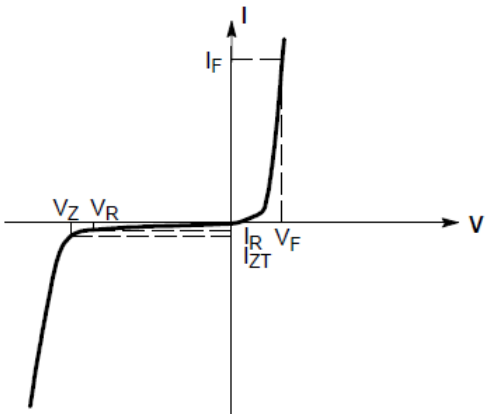
Symbol

ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (T_A=25℃)

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

WX: Device Marking Code

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Maximum V_F=0.9V at I_F=10mA

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	2.2	2.6	5.0	100	600	1.0	50	1.0	WX
BZT52C2V7S	2.7	2.5	2.9	5.0	100	600	1.0	20	1.0	W1
BZT52C3V0S	3.0	2.8	3.2	5.0	95	600	1.0	10	1.0	W2
BZT52C3V3S	3.3	3.1	3.5	5.0	95	600	1.0	5	1.0	W3
BZT52C3V6S	3.6	3.4	3.8	5.0	90	600	1.0	5	1.0	W4
BZT52C3V9S	3.9	3.7	4.1	5.0	90	600	1.0	3	1.0	W5
BZT52C4V3S	4.3	4.0	4.6	5.0	90	600	1.0	3	1.0	W6
BZT52C4V7S	4.7	4.4	5.0	5.0	80	500	1.0	3	2.0	W7
BZT52C5V1S	5.1	4.8	5.4	5.0	60	480	1.0	2	2.0	W8
BZT52C5V6S	5.6	5.2	6.0	5.0	40	400	1.0	1	2.0	W9
BZT52C6V2S	6.2	5.8	6.6	5.0	10	150	1.0	3	4.0	WA
BZT52C6V8S	6.8	6.4	7.2	5.0	15	80	1.0	2	4.0	WB
BZT52C7V5S	7.5	7.0	7.9	5.0	15	80	1.0	1	5.0	WC
BZT52C8V2S	8.2	7.7	8.7	5.0	15	80	1.0	0.7	5.0	WD
BZT52C9V1S	9.1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	WE
BZT52C10S	10.0	9.4	10.6	5.0	20	150	1.0	0.2	7.0	WF
BZT52C11S	11.0	10.4	11.6	5.0	20	150	1.0	0.1	8.0	WG
BZT52C12S	12.0	11.4	12.7	5.0	25	150	1.0	0.1	8.0	WH
BZT52C13S	13.0	12.4	14.1	5.0	30	170	1.0	0.1	8.0	WI
BZT52C15S	15.0	13.8	15.6	5.0	30	200	1.0	0.1	10.5	WJ
BZT52C16S	16.0	15.3	17.1	5.0	40	200	1.0	0.1	11.2	WK
BZT52C18S	18.0	16.8	19.1	5.0	45	225	1.0	0.1	12.6	WL
BZT52C20S	20.0	18.8	21.2	5.0	55	225	1.0	0.1	14.0	WM
BZT52C22S	22.0	20.8	23.3	5.0	55	250	1.0	0.1	15.4	WN
BZT52C24S	24.0	22.8	25.6	5.0	70	250	1.0	0.1	16.8	WO
BZT52C27S	27.0	25.1	28.9	2.0	80	300	0.5	0.1	18.9	WP

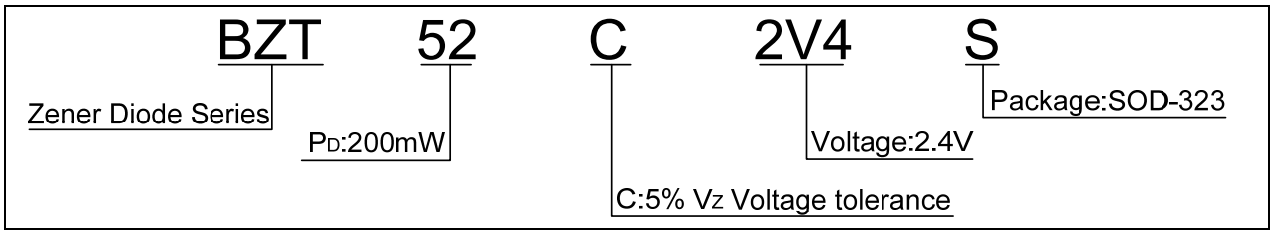
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted, continued)

Maximum V_F=0.9V at I_F=10mA

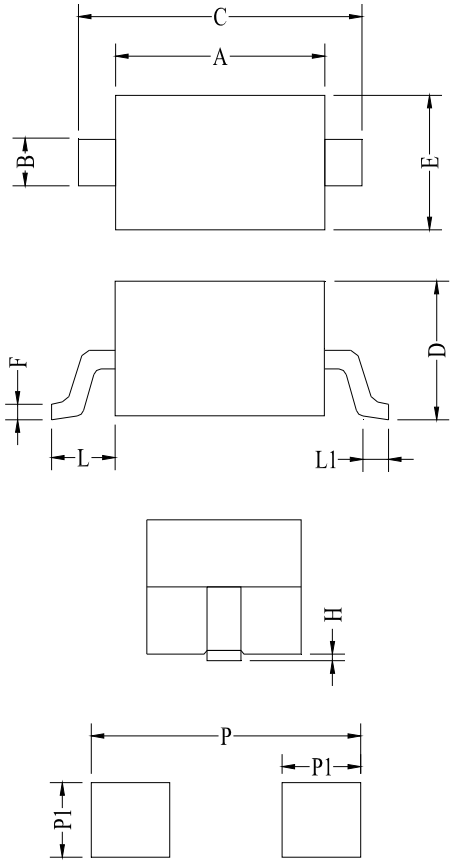
Type number	Zener voltage range at I_{ZT} 1)				Maximum zener impedance			Maximum reverse leakage current		Marking
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{ZT} (mA)	Z_{ZT} (Ω)	Z_{ZK} (Ω)	I_{ZK} (mA)	I_R (μA)	V_R (Volts)	
BZT52C30S	30.0	28.0	32.0	2.0	80	300	0.5	0.1	21.0	WQ
BZT52C33S	33.0	31.0	35.0	2.0	80	325	0.5	0.1	23.1	WR
BZT52C36S	36.0	34.0	38.0	2.0	90	350	0.5	0.1	25.2	WS
BZT52C39S	39.0	37.0	41.0	2.0	130	350	0.5	0.1	27.3	WT
BZT52C43S	43.0	40.0	46.0	2.0	100	700	1.0	0.1	32.0	WU

1）V_Z is tested with pulses(10ms)

ORDERING INFORMATION



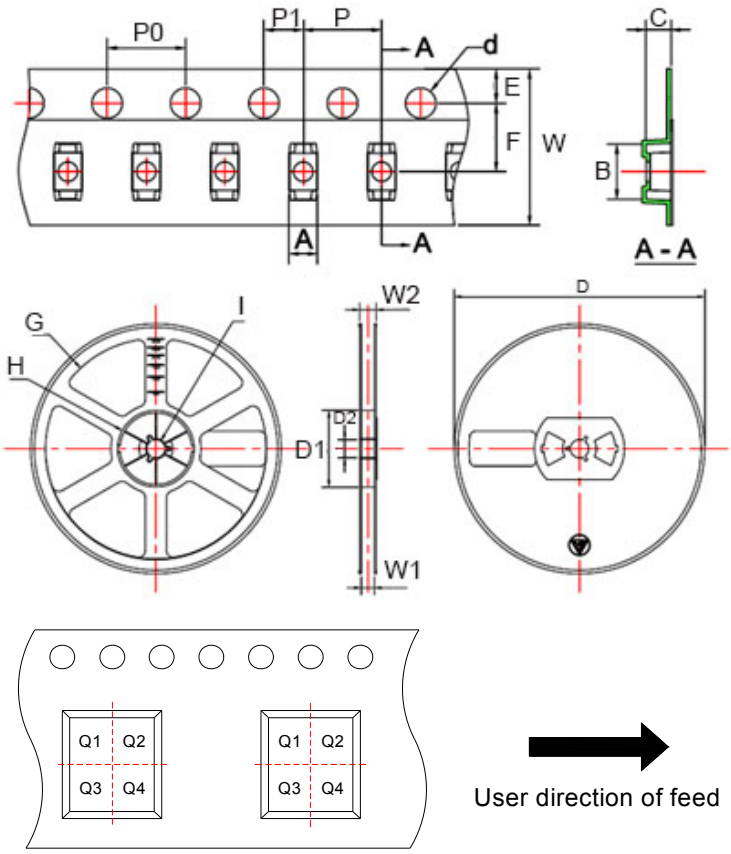
PACKAGE MECHANICAL DATA



Land Pattern

Symbol	Millimeters			Inches		
	Min	Typ	Max	Min	Typ	Max
A	1.60	1.70	1.80	0.063	0.067	0.071
B	0.25	0.32	0.40	0.010	0.013	0.016
C	2.30	2.60	2.80	0.091	0.102	0.110
D	0.80	0.95	1.10	0.031	0.037	0.043
E	1.20	1.30	1.40	0.047	0.051	0.055
F	0.08	0.13	0.18	0.003	0.005	0.007
L	0.475REF			0.019REF		
L1	0.25	0.33	0.40	0.010	0.013	0.016
H	0.00	0.06	0.14	0.000	0.002	0.006
P	3.00			0.118		
P1	0.80			0.031		

TAPE AND REEL INFORMATION-SOD-323



Pin 1 quadrant:Q1&Q2

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.

Symbol	Millimeters	Inches
	Typ	Typ
A	1.46	0.057
B	2.90	0.114
C	1.25	0.049
d	⌀1.50	⌀0.059
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
D	⌀178.0	⌀7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.0	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

ORDERING INFORMATION

Part No.	Package	Reel Size	Quantity Per Reel
BZT52CxxxS	SOD-323	7 Inch	3,000 pcs

RATINGS AND CHARACTERISTICS CURVES (T_A=25ºC, unless otherwise noted)

Fig.1 Power dissipation vs ambient temperature

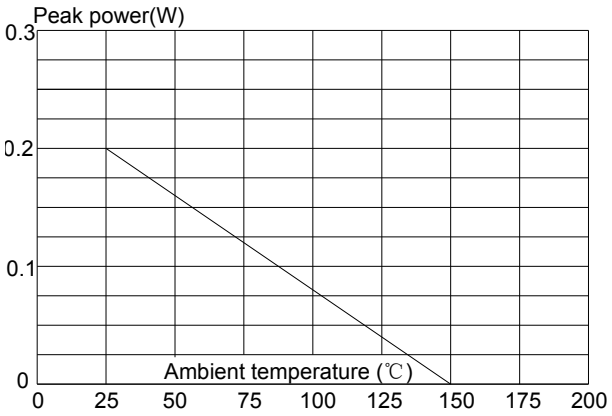


Fig.2 Zener breakdown characteristics

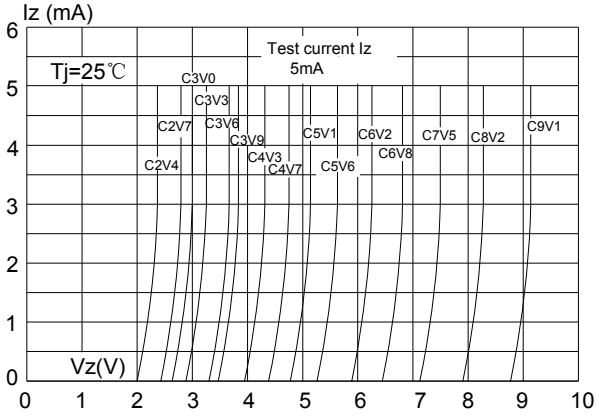


Fig.3 Zener breakdown characteristics

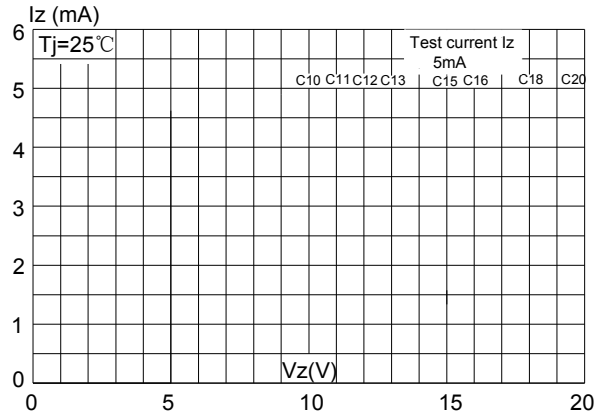


Fig.4 Zener breakdown characteristics