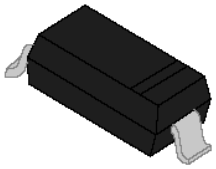
Zener Diodes：BZT52B Series

Rev.1.5

FEATURE

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 500mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 5.1V to 43V with ±2% for BZT52B series.
- ✧ Low profile surface-mount package.
- ✧ For use in stabilizing and clamping circuits with high power rating.



SOD-123

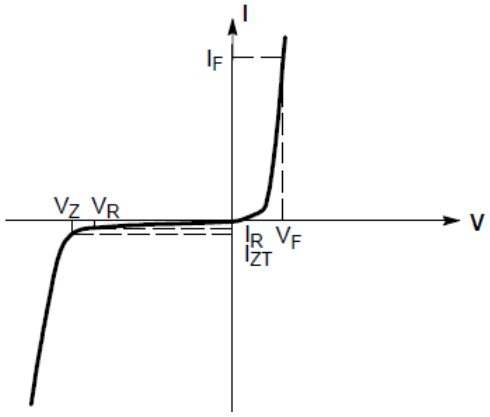
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @T_L=75℃	P_D	500	mW
Thermal resistance junction to ambient (Note1)	$R_{\theta JA}$	330	℃/W
Junction temperature range	T_J	-55 to +150	℃
Storage temperature range	T_{STG}	-55 to +150	℃

Note1: Device mounted on FR-4 PCB with minimum recommended pad layout

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

2W8: 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}				Maximum zener impedance			Maximum reverse leakage current		Typical temperature coefficient @I_{ZTC}		Test current I_{ZTC}	Marking code
	Nom (V)	Min (V)	Max (V)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (V)	Min (mV/°C)	Max (mV/°C)	mA	
BZT52B5V1	5.1	5.00	5.20	5.0	60	480	1.0	2	2.0	-2.7	1.2	5	2W8
BZT52B5V6	5.6	5.49	5.71	5.0	40	400	1.0	1	2.0	-2.0	2.5	5	2W9
BZT52B6V2	6.2	6.08	6.32	5.0	10	150	1.0	3	4.0	0.4	3.7	5	2WA
BZT52B6V8	6.8	6.66	6.94	5.0	15	80	1.0	2	4.0	1.2	4.5	5	2WB
BZT52B7V5	7.5	7.35	7.65	5.0	15	80	1.0	1	5.0	2.5	5.3	5	2WC
BZT52B8V2	8.2	8.04	8.36	5.0	15	80	1.0	0.7	5.0	3.2	6.2	5	2WD
BZT52B9V1	9.1	8.92	9.28	5.0	15	100	1.0	0.5	6.0	3.8	7.0	5	2WE
BZT52B10	10	9.80	10.20	5.0	20	150	1.0	0.2	7.0	4.5	8.0	5	2WF
BZT52B11	11	10.78	11.22	5.0	20	150	1.0	0.1	8.0	5.4	9.0	5	2WG
BZT52B12	12	11.76	12.24	5.0	25	150	1.0	0.1	8.0	6.0	10.0	5	2WH
BZT52B13	13	12.74	13.26	5.0	30	170	1.0	0.1	8.0	7.0	11.0	5	2WI
BZT52B15	15	14.70	15.30	5.0	30	200	1.0	0.1	10.5	9.2	13.0	5	2WJ
BZT52B16	16	15.68	16.32	5.0	40	200	1.0	0.1	11.2	10.4	14.0	5	2WK
BZT52B18	18	17.64	18.36	5.0	45	225	1.0	0.1	12.6	12.4	16.0	5	2WL
BZT52B20	20	19.60	20.40	5.0	55	225	1.0	0.1	14.0	14.4	18.0	5	2WM
BZT52B22	22	21.56	22.44	5.0	55	250	1.0	0.1	15.4	16.4	20.0	5	2WN
BZT52B24	24	23.52	24.48	5.0	70	250	1.0	0.1	16.8	18.4	22.0	5	2WO
BZT52B27	27	26.46	27.54	2.0	80	300	0.5	0.1	18.9	21.4	25.3	2	2WP
BZT52B30	30	29.40	30.60	2.0	80	300	0.5	0.1	21.0	24.4	29.4	2	2WQ
BZT52B33	33	32.34	33.66	2.0	80	325	0.5	0.1	23.1	27.4	33.4	2	2WR
BZT52B36	36	35.28	36.72	2.0	90	350	0.5	0.1	25.2	30.4	37.4	2	2WS
BZT52B39	39	38.22	39.78	2.0	130	350	0.5	0.1	27.3	33.4	41.2	2	2WT
BZT52B43	43	42.14	43.86	2.0	100	700	1.0	0.1	32.0	10.0	12.0	5	2WU

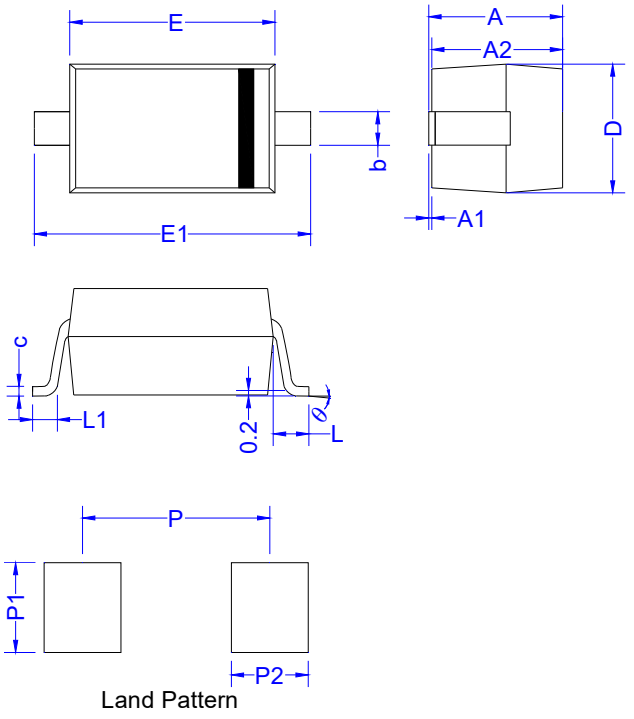
Notes: Zener voltage tolerance of standard BZT52B series is ±2%

ORDERING INFORMATION

BZT 52 B 5V1

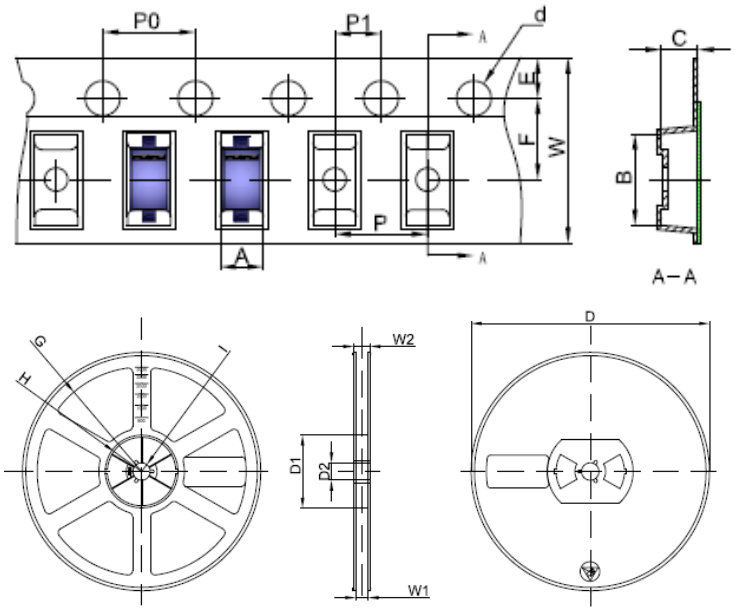
- BZT: Zener Diode Series
- 52: P_D:500mW
- B: B:2% V_Z Voltage tolerance
- 5V1: Voltage:5.1V

PACKAGE MECHANICAL DATA



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	1.05	1.25	0.041	0.049
A1	0.00	0.10	0.000	0.004
A2	1.05	1.15	0.041	0.045
b	0.45	0.65	0.018	0.026
c	0.08	0.15	0.003	0.006
D	1.50	1.70	0.059	0.067
E	2.60	2.80	0.102	0.110
E1	3.55	3.85	0.140	0.152
L	0.50REF.		0.020 REF.	
L1	0.25	0.45	0.010	0.018
θ	0°	8°	0°	8°
P	3.24		0.128	
P1	1.00		0.039	
P2	0.80		0.031	

TAPE AND REEL SPECIFICATION-SOD-123



Symbol	Millimeters	Inches
	Typ.	Typ.
A	1.85	0.073
B	3.95	0.156
C	1.57	0.062
d	Φ1.55	Φ 0.061
E	1.75	0.069
F	3.50	0.138
P0	4.0	0.157
P	4.0	0.157
P1	2.0	0.079
W	8.00	0.315
D	Φ178.0	Φ7.008
D1	54.40	2.142
D2	13.0	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

Packaging description:

SOD-123 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. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

ORDERING INFORMATION

OUTLINE	PACKAGE	REEL SIZE	QUANTITY PER REEL
TAPING	SOD-123	7 Inch	3,000PCS

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

Fig.1 Power dissipation vs lead temperature

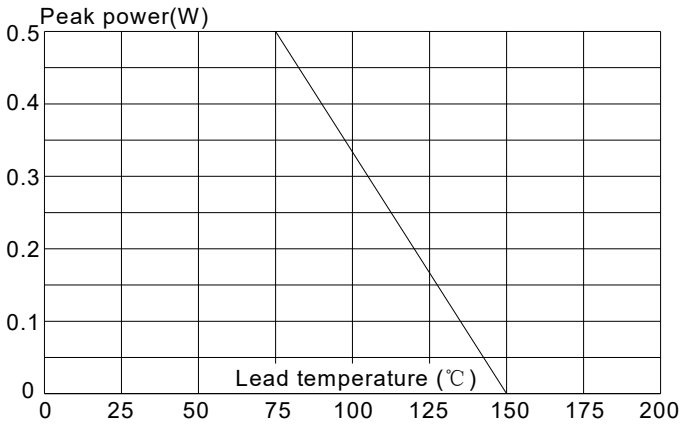


Fig.2 Zener breakdown characteristics

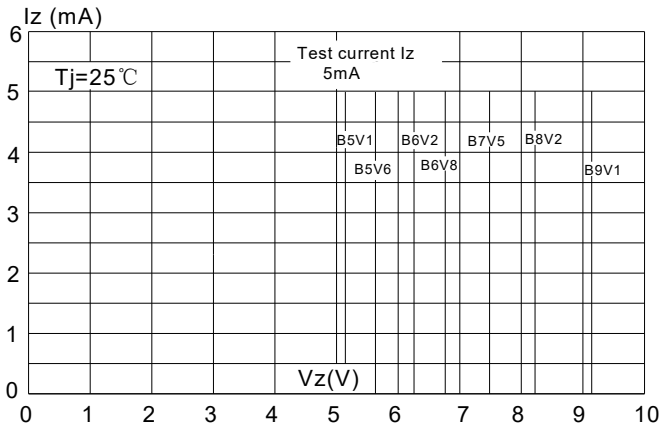


Fig.3 Zener breakdown characteristics

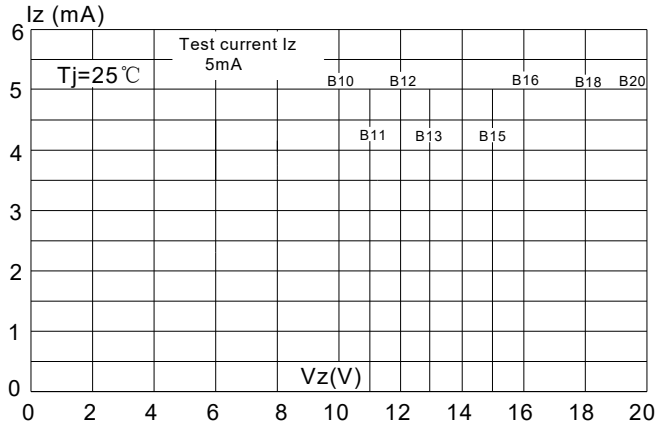
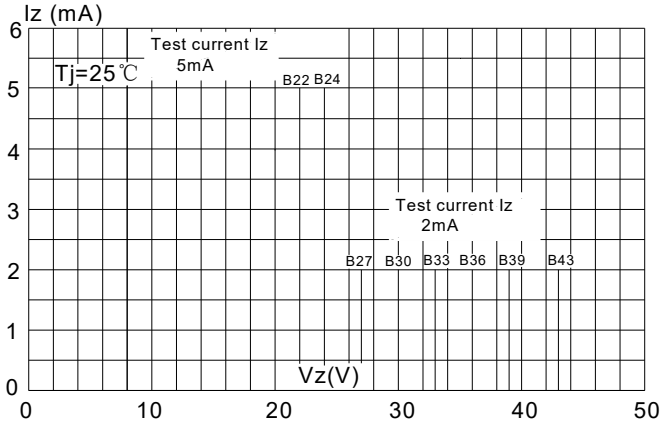


Fig.4 Zener breakdown characteristics



JieJie products are not designed for, and shall not be used for, any purpose (including, without limitation, automotive, military, aerospace, medical, life-saving, life-sustaining or nuclear facility applications, devices intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable JieJie product documentation. Warranties granted by JieJie shall be deemed void for products used for any purpose not expressly set forth in applicable JieJie documentation. JieJie shall not be liable for any claims or damages arising out of products used in applications not expressly intended by JieJie as set forth in applicable JieJie documentation. The sale and use of JieJie products is subject to JieJie terms and conditions of sale, unless otherwise agreed by JieJie.

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 1.5th version which is made in 26-May-2026. This document supersedes and replaces all information previously supplied.