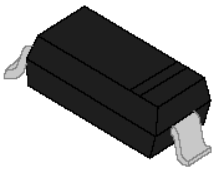
Zener Diodes：BZT52CxxxAU Series

Rev.1.1

FEATURE

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 500mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 4.7V to 43V with approximately ±5% for BZT52CxxxAU series.
- ✧ Low profile surface-mount package.
- ✧ For use in stabilizing and clamping circuits with high power rating.
- ✧ AEC-Q101 qualified.



SOD-123

Symbol

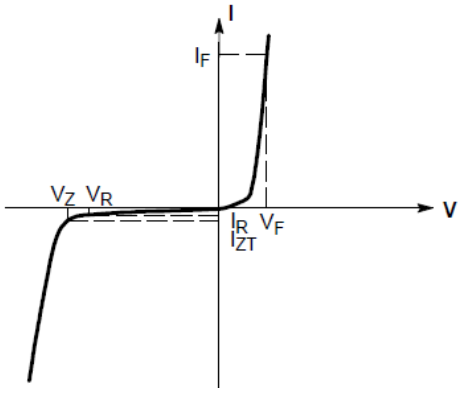
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

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
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

W7: Device Marking Code

BZT52CxxxAU ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

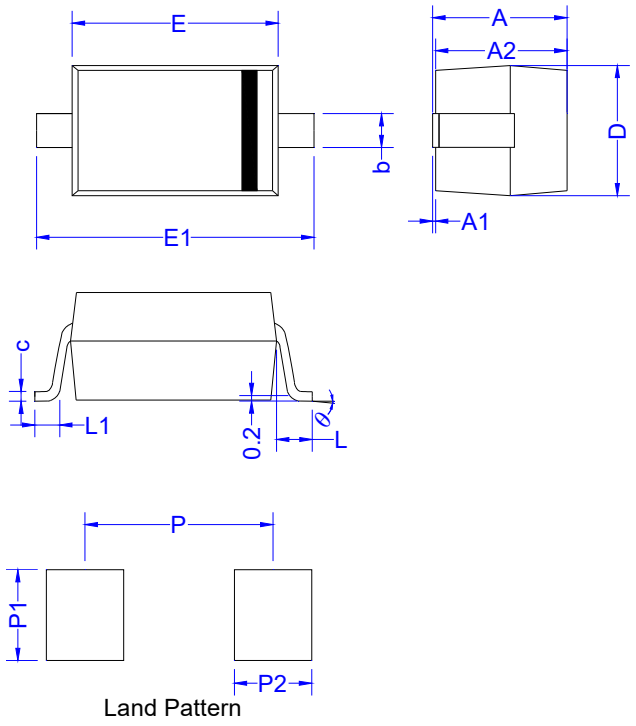
Maximum V_F=0.9V at I_F=10mA

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
	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	
BZT52C4V7AU	4.7	4.4	5.0	5.0	80	500	1.0	3	2.0	-3.5	0.2	5	W7
BZT52C5V1AU	5.1	4.8	5.4	5.0	60	480	1.0	2	2.0	-2.7	1.2	5	W8
BZT52C5V6AU	5.6	5.2	6.0	5.0	40	400	1.0	1	2.0	-2.0	2.5	5	W9
BZT52C6V2AU	6.2	5.8	6.6	5.0	10	150	1.0	3	4.0	0.4	3.7	5	WA
BZT52C6V8AU	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5	WB
BZT52C7V5AU	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5	WC
BZT52C8V2AU	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5	WD
BZT52C9V1AU	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5	WE
BZT52C10AU	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5	WF
BZT52C11AU	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5	WG
BZT52C12AU	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5	WH
BZT52C13AU	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5	WI
BZT52C15AU	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5	WJ
BZT52C16AU	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5	WK
BZT52C18AU	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5	WL
BZT52C20AU	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5	WM
BZT52C22AU	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5	WN
BZT52C24AU	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5	WO
BZT52C27AU	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2	WP
BZT52C30AU	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2	WQ
BZT52C33AU	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2	WR
BZT52C36AU	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2	WS
BZT52C39AU	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2	WT
BZT52C43AU	43	40.0	46.0	5	100	700	1.0	0.1	32	10.0	12.0	5	WU

ORDERING INFORMATION

BZT	52	C	4V7	AU
Zener Diode Series	P_D:500mW	C:Approximately 5% V_Z Voltage tolerance	Voltage:4.7V	AEC-Q101 qualified

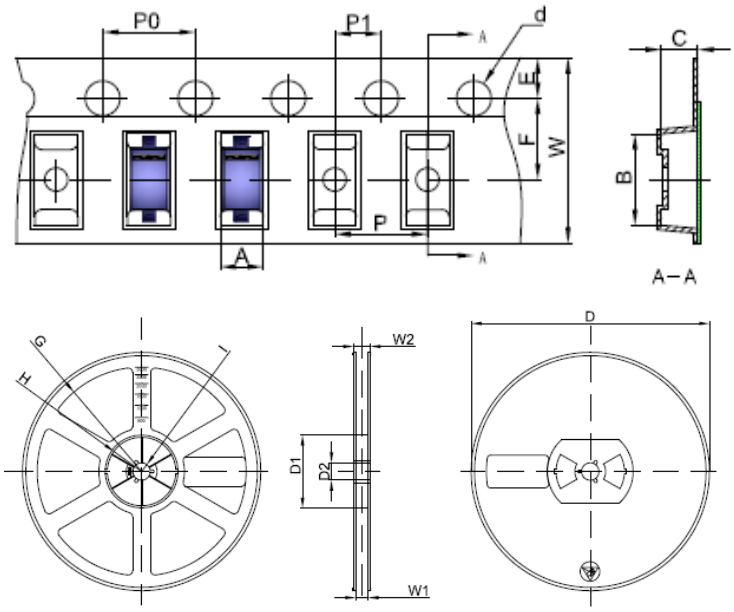
PACKAGE MECHANICAL DATA



Land Pattern

Symbol	Millimeters		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

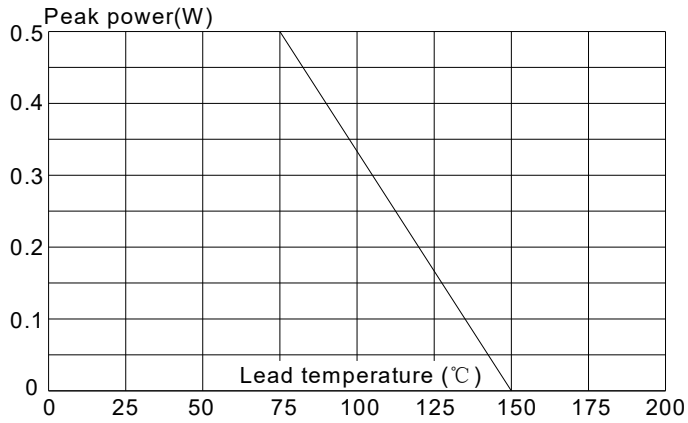


Fig.2 Zener breakdown characteristics

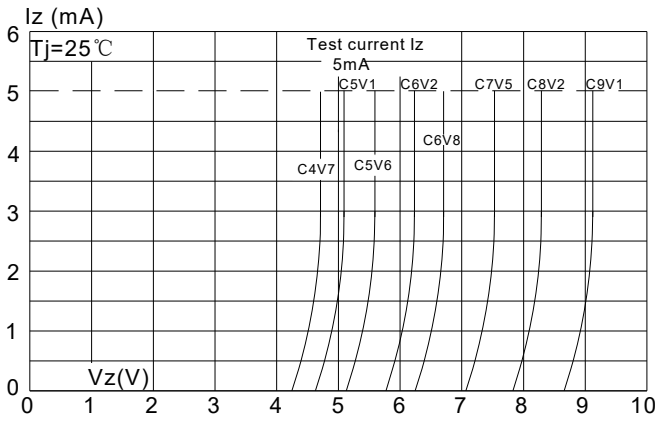
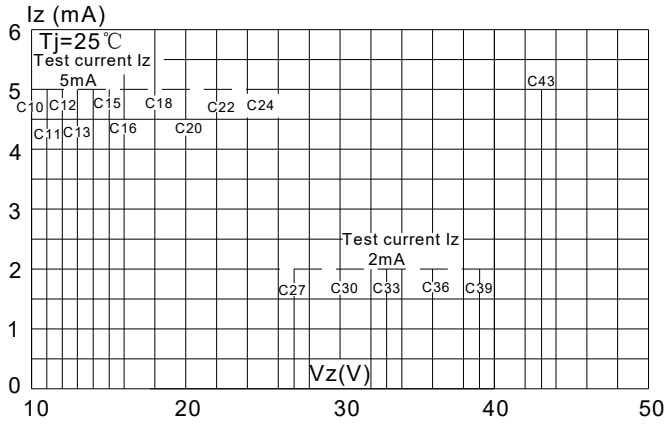


Fig.3 Zener breakdown characteristics



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