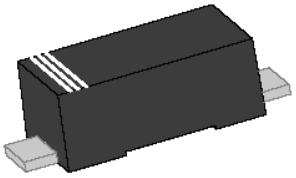
Zener Diodes with Surge Current Specification: BZD52CxxAU

Rev.1.4

FEATURE



SOD-123FL

Symbol

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 500mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 6.8V to 100V with ±5% for BZD52CxxAU series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.
- ✧ AEC-Q101 qualified.

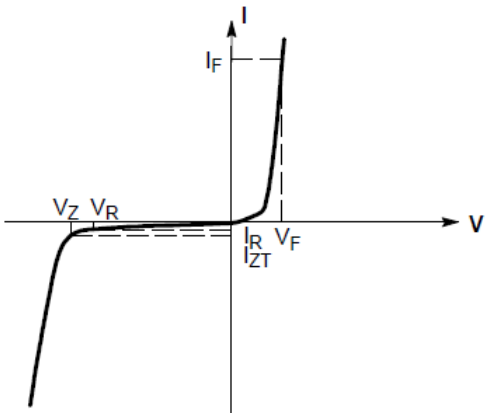
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @ 75℃	P_D	500	mW
Thermal resistance junction to ambient (Note1)	$R_{\theta JA}$	330	℃/W
Junction temperature	T_j	150	℃
Storage temperature range	T_S	-55 to+150	℃
Operating temperature range	T_{op}	-55 to+150	℃
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	200	W

Note1：1.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

ZWD: Device Marking Code

BZD52CxxAU 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		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
BZD52C6V8AU	6.8	6.46	7.14	5.0	15	80	1.0	2	4.0	ZWD
BZD52C7V5AU	7.5	7.13	7.88	5.0	15	80	1.0	1	5.0	ZWE
BZD52C8V2AU	8.2	7.79	8.61	5.0	15	80	1.0	0.7	5.0	ZWF
BZD52C9V1AU	9.1	8.65	9.56	5.0	15	100	1.0	0.5	6.0	ZWG
BZD52C10AU	10	9.5	10.5	5.0	20	150	1.0	0.2	7.0	ZWH
BZD52C11AU	11	10.5	11.6	5.0	20	150	1.0	0.1	8.0	ZWI
BZD52C12AU	12	11.4	12.6	5.0	25	150	1.0	0.1	8.0	ZWJ
BZD52C13AU	13	12.4	13.7	5.0	30	170	1.0	0.1	8.0	ZWK
BZD52C15AU	15	14.3	15.8	5.0	30	200	1.0	0.1	10.5	ZWL
BZD52C16AU	16	15.2	16.8	5.0	40	200	1.0	0.1	11.2	ZWM
BZD52C18AU	18	17.1	18.9	5.0	45	225	1.0	0.1	12.6	ZWN
BZD52C20AU	20	19.0	21.0	5.0	55	225	1.0	0.1	14.0	ZWO
BZD52C22AU	22	20.9	23.1	5.0	55	250	1.0	0.1	15.4	ZWP
BZD52C24AU	24	22.8	25.2	5.0	70	250	1.0	0.1	16.8	ZWQ
BZD52C27AU	27	25.7	28.4	2.0	80	300	0.5	0.1	18.9	ZWR
BZD52C30AU	30	28.5	31.5	2.0	80	300	0.5	0.1	21.0	ZWS
BZD52C33AU	33	31.4	34.7	2.0	80	325	0.5	0.1	23.1	ZWT
BZD52C36AU	36	34.2	37.8	2.0	90	350	0.5	0.1	25.2	ZWU
BZD52C39AU	39	37.1	41.0	2.0	130	350	0.5	0.1	27.3	ZWV
BZD52C43AU	43	40.9	45.2	2.0	100	700	0.5	0.1	32.0	ZWW
BZD52C47AU	47	44.7	49.4	2.0	100	750	0.5	0.1	35.0	ZWX
BZD52C51AU	51	48.5	53.6	2.0	100	750	0.5	0.1	38.0	ZWY
BZD52C56AU	56	53.2	58.8	2.0	150	1000	0.5	0.1	39.2	ZNA
BZD52C62AU	62	58.9	65.1	1.0	150	1000	0.5	0.1	43.4	ZNB
BZD52C68AU	68	64.6	71.4	1.0	200	1000	0.5	0.1	47.6	ZNC
BZD52C75AU	75	71.3	78.8	1.0	250	1500	0.5	0.1	52.5	ZND

BZD52CxxAU 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}				Maximum zener impedance			Maximum reverse leakage current		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
BZD52C82AU	82	77.9	86.1	0.5	250	1500	0.25	0.1	57.4	ZNE
BZD52C91AU	91	86.5	95.6	0.5	300	1700	0.25	0.1	63.7	ZNF
BZD52C100AU	100	95	105	0.5	300	1700	0.25	0.1	70.0	ZNG

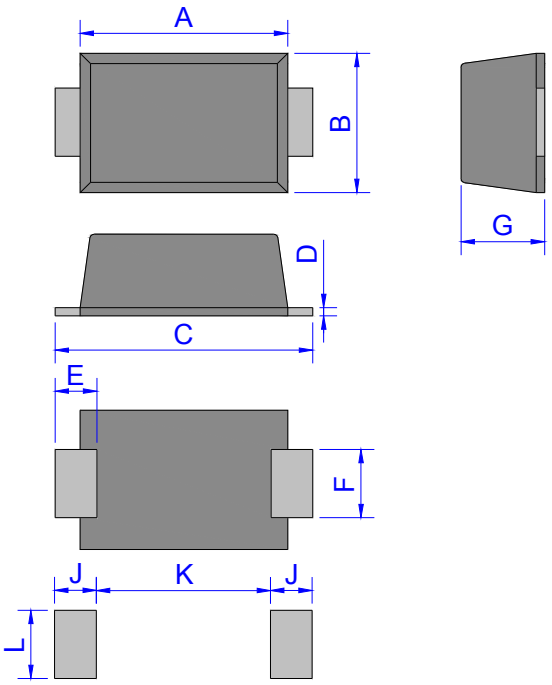
Notes: Zener voltage tolerance of standard BZD52CxxAU series is ±5%

ORDERING INFORMATION

BZD 52 C 9V1 AU

- BZD: Zener Diode Series
- 52: P_D:500mW
- C: C:5% V_Z Voltage tolerance
- 9V1: Voltage:9.1V
- AU: AEC-Q101 qualified

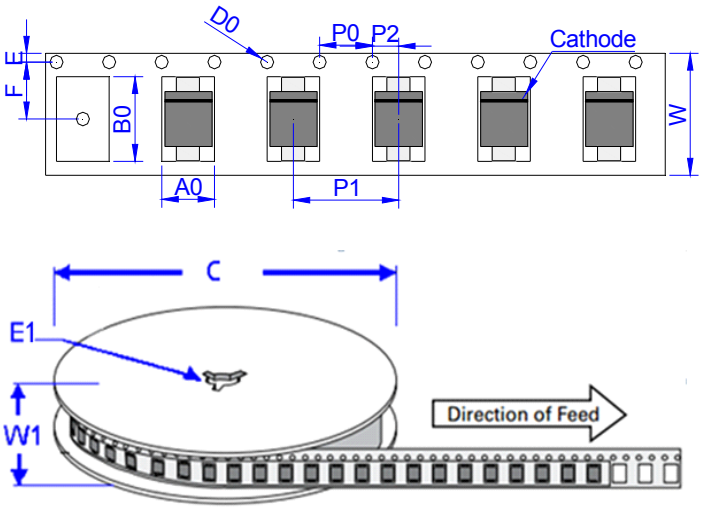
PACKAGE MECHANICAL DATA



SOD-123FL

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.01
E	0.3	0.9	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.70	1.00	0.028	0.039
J	1.30		0.051	
K		1.70		0.067
L	1.30		0.051	

TAPE AND REEL SPECIFICATION-SOD-123FL



Ref.	Dimensions	
	Millimeters	Inches
A0	1.95 ± 0.3	0.077± 0.012
B0	3.95 ± 0.3	0.156 ± 0.012
C	178	7.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524± 0.012
F	3.50 ± 0.2	0.138 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	8.0± 0.2	0.315 ± 0.008
W1	11.5 ± 1.0	0.453 ± 0.039

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCIPTION
BZD52CxxAU	0.0144	3000	150,000	7 inch reel pack

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

Fig.1 Power dissipation vs lead temperature

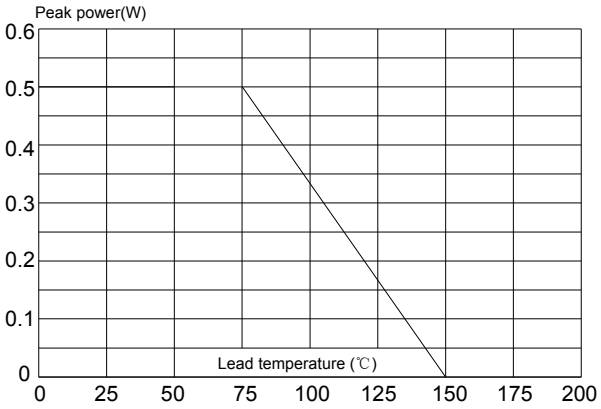


Fig.2 Zener breakdown characteristics

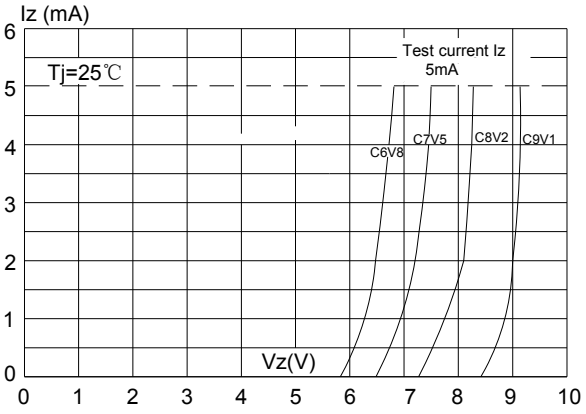


Fig.3 Zener breakdown characteristics

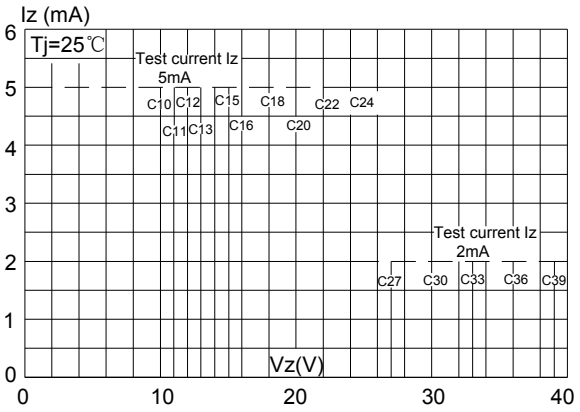
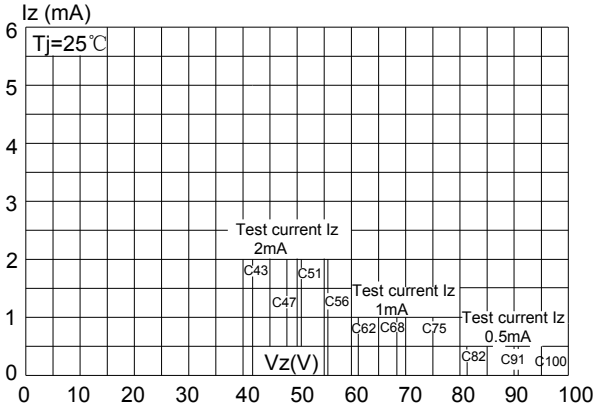


Fig.4 Zener breakdown characteristics



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