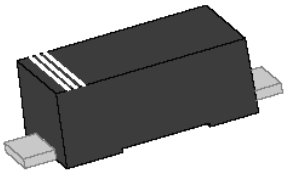
Zener Diodes with Surge Current Specification：BZD55C Series Rev.5.4

FEATURE



SOD-123FL

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 1000mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 6.8V to 100V with ±5% for BZD55C series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260℃.

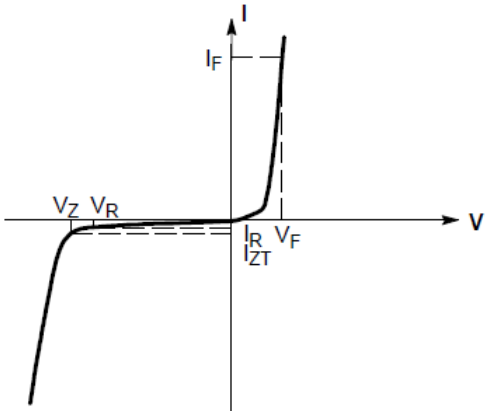
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @ 75℃	P_D	1000	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	℃

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

7W1: Device Marking Code

BZD55C ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

Maximum V_F=1.2V at I_F=200mA

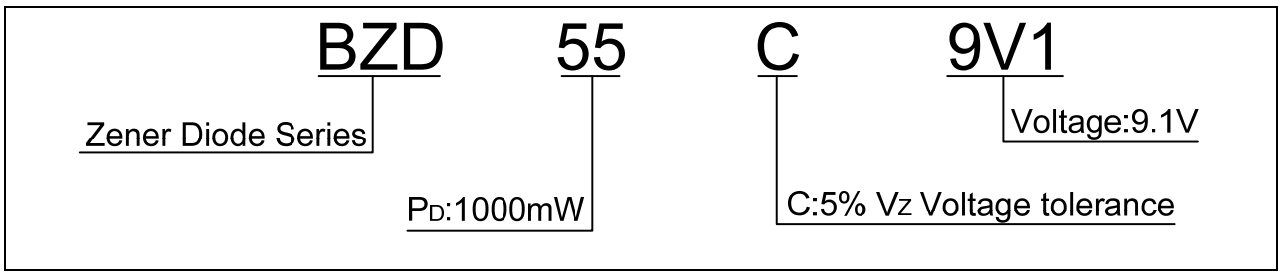
Type number	Zener voltage range at I_{zt}				Maximum zener impedance			Maximum reverse leakage current		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
BZD55C6V8	6.8	6.46	7.14	37	3.5	500	1.0	5	4	7W1
BZD55C7V5	7.5	7.12	7.88	34	4.0	200	0.5	5	5	7X1
BZD55C8V2	8.2	7.79	8.61	31	4.5	200	0.5	5	6	7Y1
BZD55C9V1	9.1	8.65	9.56	28	5.0	700	0.5	5	5	ZXG
BZD55C10	10	9.5	10.5	25	7.0	700	0.25	5	7.5	ZXH
BZD55C11	11	10.5	11.6	23	8.0	700	0.25	4	8.2	ZXI
BZD55C12	12	11.4	12.6	21	9.0	700	0.25	3	9.1	ZXJ
BZD55C13	13	12.4	13.7	19	10	700	0.25	2	9.9	ZXK
BZD55C15	15	14.3	15.8	17	14	700	0.25	1	11.4	ZXL
BZD55C16	16	15.2	16.8	15.5	16	700	0.25	1	12.2	ZXM
BZD55C18	18	17.1	18.9	14	20	750	0.25	1	13.7	ZXN
BZD55C20	20	19	21	12.5	22	750	0.25	1	15.2	ZXO
BZD55C22	22	20.9	23.1	11.5	23	750	0.25	1	16.7	ZXP
BZD55C24	24	22.8	25.2	10.5	25	750	0.25	1	18.2	ZXQ
BZD55C27	27	25.7	28.4	9.5	35	750	0.25	1	20.6	ZXR
BZD55C30	30	28.5	31.5	8.5	40	1000	0.25	1	22.8	ZXS
BZD55C33	33	31.4	34.7	7.5	45	1000	0.25	1	25.1	ZXT
BZD55C36	36	34.2	37.8	7.0	50	1000	0.25	1	27.4	ZXU
BZD55C39	39	37.1	41.0	6.5	60	1000	0.25	1	29.7	ZXV
BZD55C43	43	40.9	45.2	6.0	70	1500	0.25	1	32.7	ZXW
BZD55C47	47	44.7	49.4	5.5	80	1500	0.25	1	35.8	ZXX
BZD55C51	51	48.5	53.6	5.0	95	1500	0.25	1	38.8	ZXY
BZD55C56	56	53.2	58.8	4.5	110	2000	0.25	1	42.6	ZMA
BZD55C62	62	58.9	65.1	4.0	125	2000	0.25	1	47.1	ZMB
BZD55C68	68	64.6	71.4	3.7	150	2000	0.25	1	51.7	ZMC
BZD55C75	75	71.3	78.8	3.3	175	2000	0.25	1	56.0	ZMD

BZD55C ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted, continued)

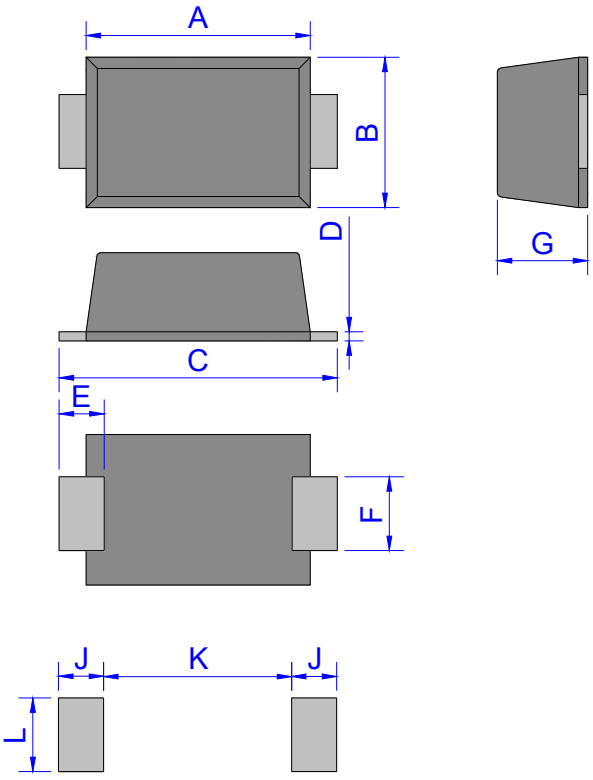
Maximum V_F=1.2V at I_F=200mA

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)	
BZD55C82	82	77.9	86.1	3.0	200	3000	0.25	1	62.2	ZME
BZD55C91	91	86.5	95.6	2.8	250	3000	0.25	1	69.2	ZMF
BZD55C100	100	95	105	2.5	350	3000	0.25	1	76.0	ZMG

ORDERING INFORMATION



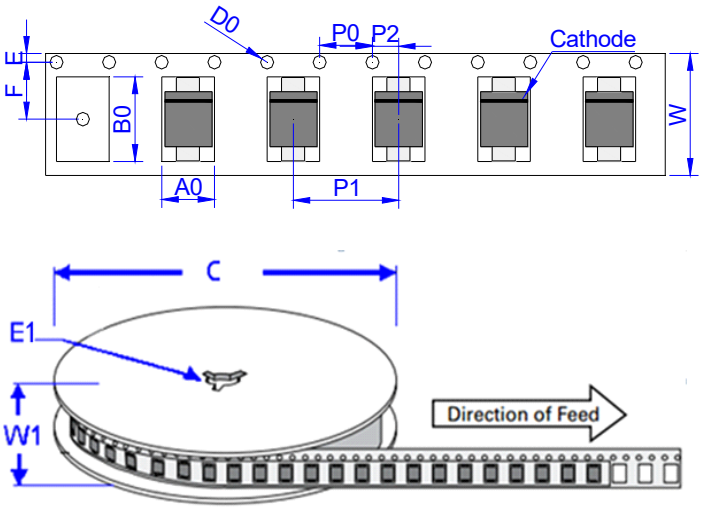
PACKAGE MECHANICAL DATA



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	0.95	1.35	0.037	0.053
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
BZD55C Series	0.0144	3,000	150,000	7 inch reel pack

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

Fig.1 Power dissipation vs lead temperature

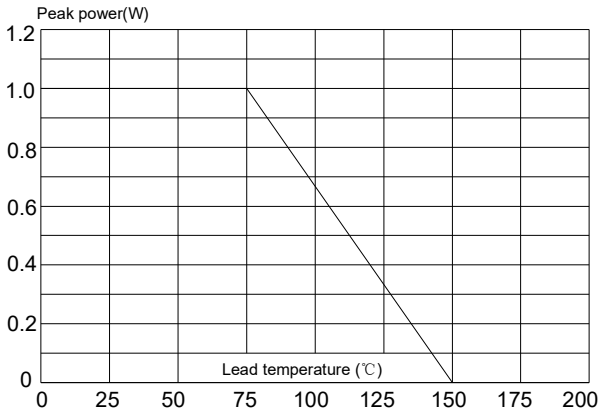


Fig.2 Zener breakdown characteristics

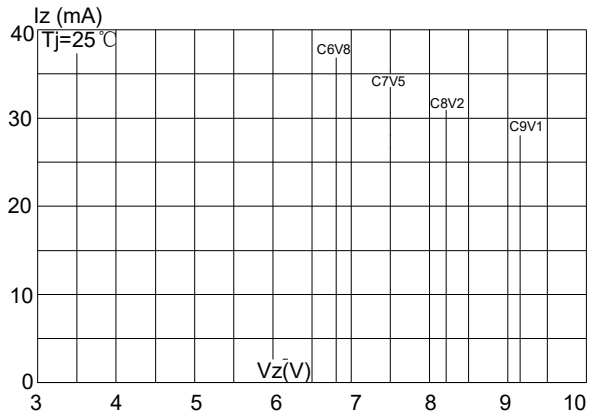


Fig.3 Zener breakdown characteristics

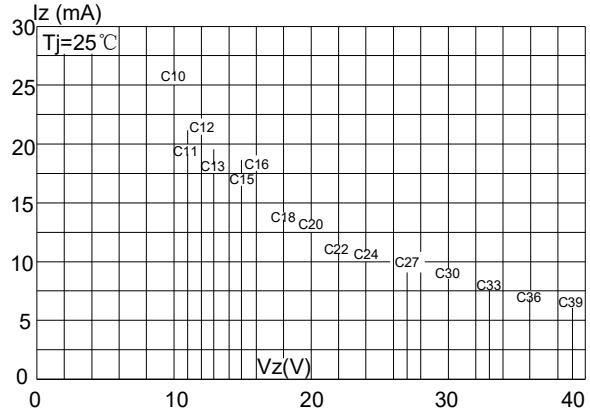
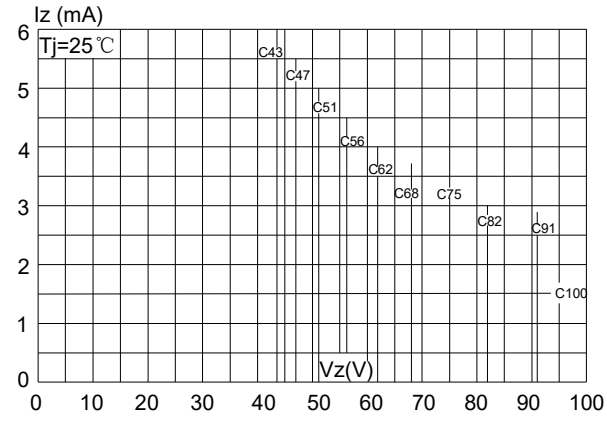


Fig.4 Zener breakdown characteristics



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