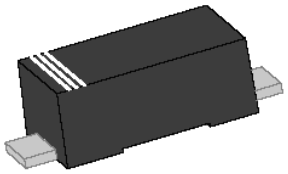
Zener Diodes with Surge Current Specification：BZD27C Series

Rev.1.5

FEATURE



SOD-123FL

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ Power dissipation: 2.3W.
- ✧ Voltage range includes breakdown voltages from 6.8V to 200V with ±5% for BZD27C series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ High temperature soldering: 260℃/10s at terminals.

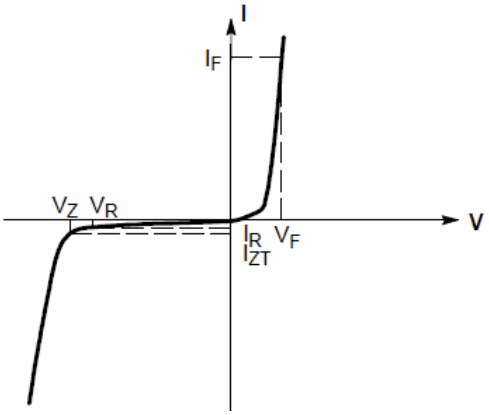
ABSOLUTE MAXIMUM RATINGSAND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @T_L=80℃	P_D	2300	mW
Total power dissipation @T_A=25℃	P_D	800	mW
Thermal resistance junction to ambient (Note1)	$R_{\theta JA}$	180	℃/W
Maximum junction temperature	T_J	175	℃
Storage temperature range	T_S	-65 to+175	℃
Peak pulse power dissipation with 10/1000μs waveform	P_{PP}	200	W

Note1：Mounted on epoxy-glass PCB with 3 mm x 3 mm Cu pads (≥ 40 μm thick)

ELECTRICAL CHARACTERISTICS

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

ZZD: Device Marking Code

BZD27C 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}				Zener impedance at I_{zt}		Maximum reverse leakage current		Clamping voltage at I_{PP}		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Typ (Ω)	Max (Ω)	I_R (μA)	V_R (Volts)	Max (Volts)	I_{PP} (A)	
BZD27C6V8	6.8	6.46	7.14	100	1	3	10	3	10.3	19.4	ZZD
BZD27C7V5	7.5	7.12	7.88	100	1	2	50	3	11.3	17.7	ZZE
BZD27C8V2	8.2	7.79	8.61	100	1	2	10	3	12.3	16.3	ZZF
BZD27C9V1	9.1	8.65	9.56	50	2	4	10	5	13.3	15.0	ZZG
BZD27C10	10	9.5	10.5	50	2	4	7	7.5	14.8	13.5	ZZH
BZD27C11	11	10.4	11.6	50	4	7	4	8.2	15.7	12.7	ZZI
BZD27C12	12	11.4	12.6	50	4	7	3	9.1	17.0	11.8	ZZJ
BZD27C13	13	12.3	13.7	50	5	10	2	10	18.9	10.6	ZZK
BZD27C15	15	14.2	15.8	50	5	10	1	11	20.9	9.6	ZZL
BZD27C16	16	15.2	16.8	25	6	15	1	12	22.9	8.7	ZZM
BZD27C18	18	17.1	18.9	25	6	15	1	13	25.6	7.8	ZZN
BZD27C20	20	19.0	21.0	25	6	15	1	15	28.4	7.0	ZZO
BZD27C22	22	20.9	23.1	25	6	15	1	16	31.0	6.5	ZZP
BZD27C24	24	22.8	25.2	25	7	15	1	18	33.8	5.9	ZZQ
BZD27C27	27	25.6	28.4	25	7	15	1	20	38.1	5.2	ZZR
BZD27C30	30	28.5	31.5	25	8	15	1	22	42.2	4.7	ZZS
BZD27C33	33	31.3	34.7	25	8	15	1	24	46.2	4.3	ZZT
BZD27C36	36	34.2	37.8	10	21	40	1	27	50.1	4.0	ZZU
BZD27C39	39	37.0	41.0	10	21	40	1	30	54.1	3.7	ZZV
BZD27C43	43	40.8	45.2	10	24	45	1	33	60.7	3.3	ZZW
BZD27C47	47	44.6	49.4	10	24	45	1	36	65.5	3.1	ZZX
BZD27C51	51	48.4	53.6	10	25	60	1	39	70.8	2.8	ZZY
BZD27C56	56	53.2	58.8	10	25	60	1	43	78.6	2.5	ZOA
BZD27C62	62	58.9	65.1	10	25	80	1	47	86.5	2.3	ZOB
BZD27C68	68	64.6	71.4	10	25	80	1	51	94.4	2.1	ZOC
BZD27C75	75	71.2	78.8	10	30	100	1	56	103.5	1.9	ZOD

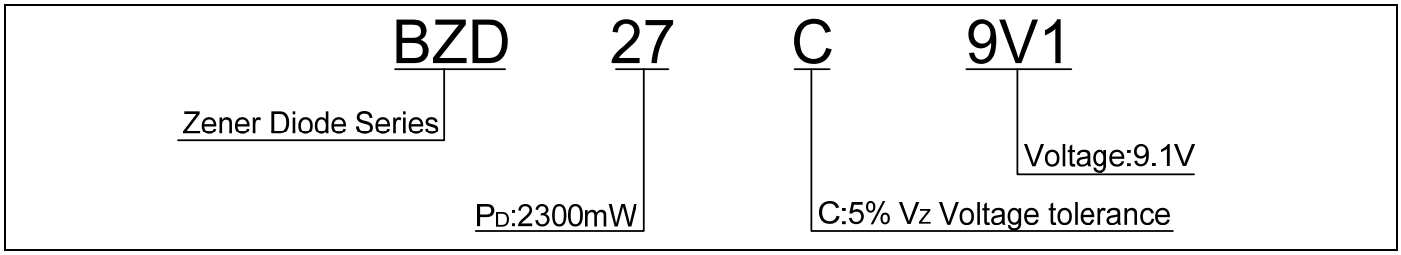
BZD27C ELECTRICAL CHARACTERISTICS(T_A=25℃ unless otherwise noted, continued)

Maximum V_F=1.2V at I_F=200mA

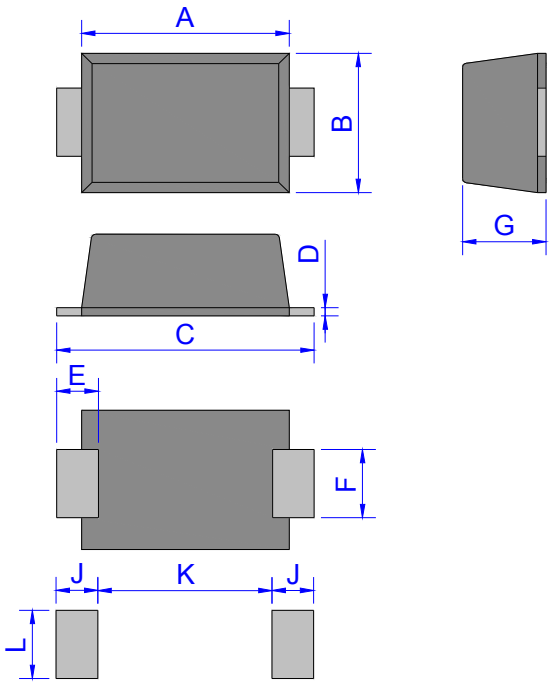
Type number	Zener voltage range at I_{zt}				Zener impedance at I_{zt}		Maximum reverse leakage current		Clamping voltage at I_{RSM}		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Typ (Ω)	Max (Ω)	I_R (μA)	V_R (Volts)	Max (Volts)	I_{RSM} (A)	
BZD27C82	82	77.9	86.1	10	30	100	1	62	114	1.8	ZOE
BZD27C91	91	86.4	95.6	5	60	200	1	68	126	1.6	ZOF
BZD27C100	100	95.0	105.0	5	60	200	1	75	139	1.4	ZOG
BZD27C110	110	104.5	115.5	5	80	250	1	82	150	1.3	ZOH
BZD27C120	120	114.0	126.0	5	80	250	1	91	167	1.2	ZOI
BZD27C130	130	123.5	136.5	5	110	300	1	100	185	1.1	ZOJ
BZD27C150	150	142.5	157.5	5	130	300	1	110	205	1.0	ZOK
BZD27C160	160	152.0	168.0	5	150	350	1	120	224	0.9	ZOL
BZD27C180	180	171.0	189.0	5	180	400	1	130	252	0.8	ZOM
BZD27C200	200	190.0	210.0	5	200	500	1	150	278	0.7	ZON

Notes: Zener voltage tolerance of standard BZD27C series is ±5%

ORDERING INFORMATION



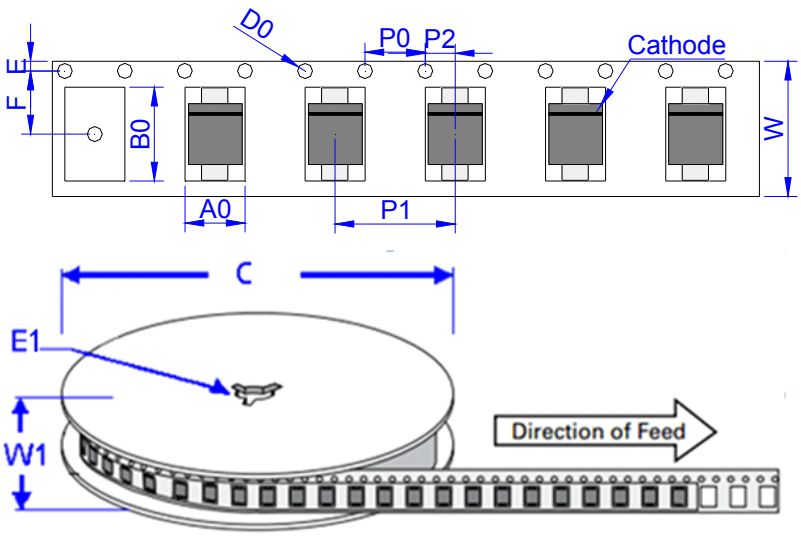
PACKAGE MECHANICAL DATA



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	0.70	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
BZD27C Series	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

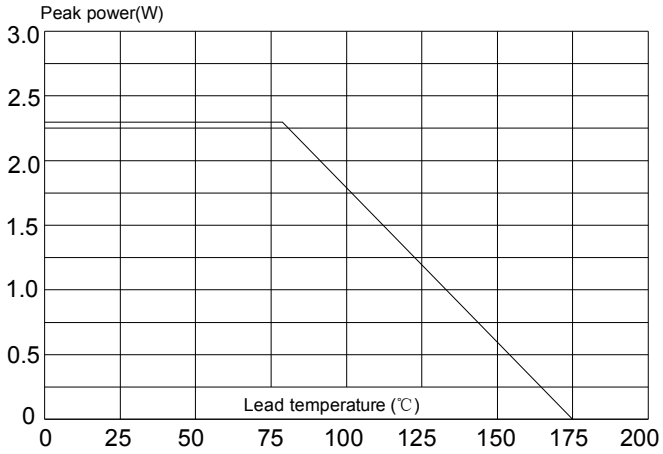


Fig.2 Zener breakdown characteristics

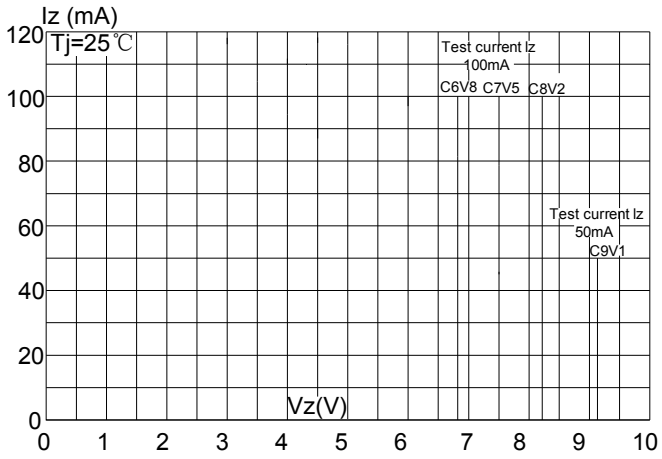


Fig.3 Zener breakdown characteristics

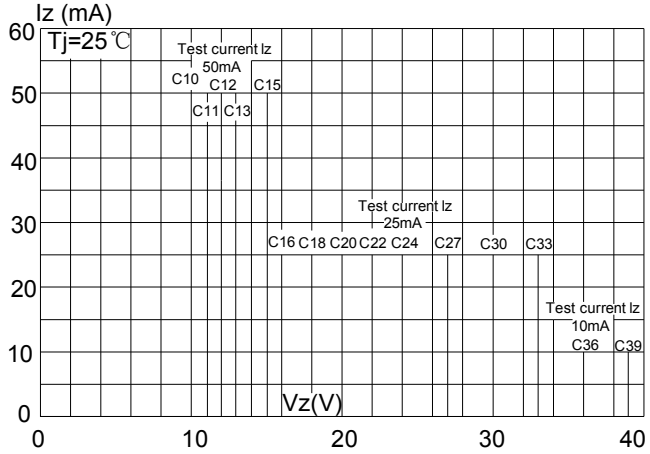


Fig.4 Zener breakdown characteristics

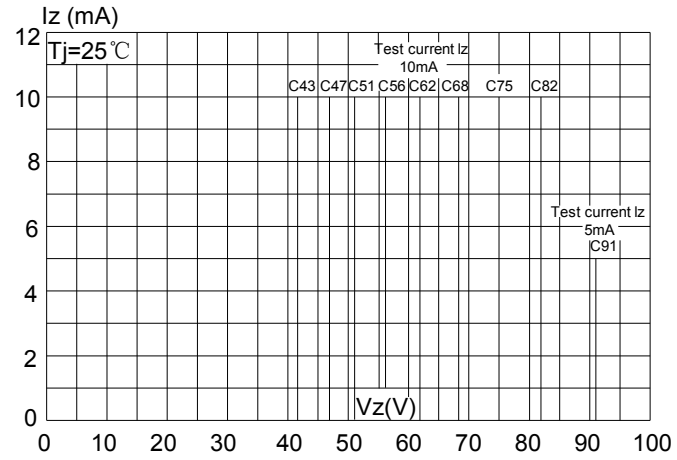


Fig.5 Zener breakdown characteristics

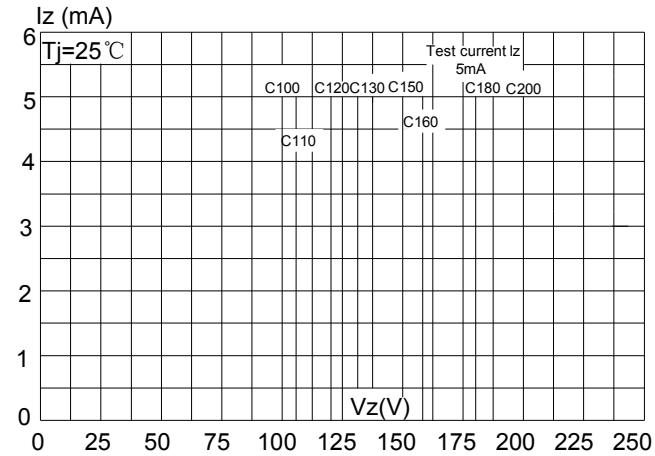
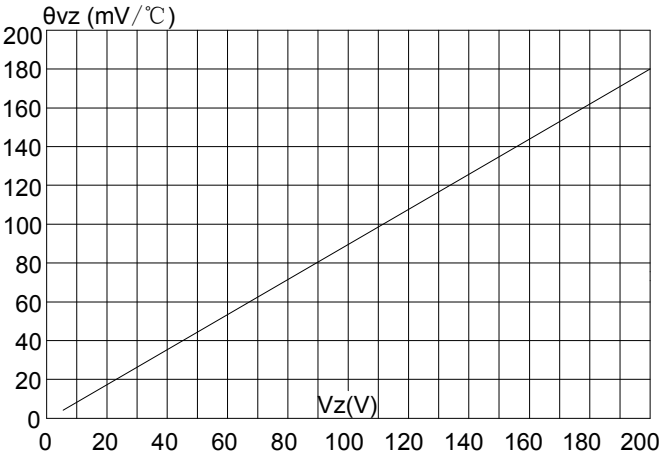


Fig.6 Temperature coefficient vs. zener voltage



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