

BZT52C series
ZENER DIODE



Voltage: 2.4~75 Volts

P_D: 350 mW

Package: SOD-123

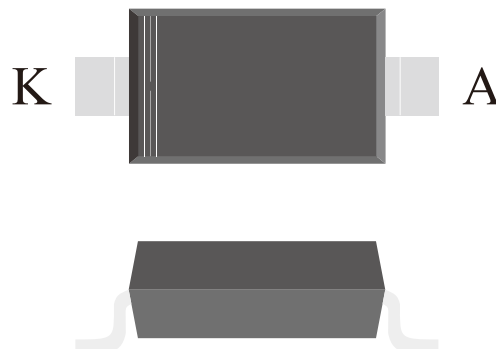
Features

- Low Zener Impedance
- Power Dissipation of 350mW
- High Stability and High Reliability
- Zener Voltage Tolerance: See Table-1

Mechanical Data

- Case: Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- Polarity: Look At The Diagram And Polarity On The Right
- Terminals: Tin Plated Leads, Solderable Per J-STD-002 And JESD22-B102
- Mounting Position: Any

Diagram:



Polarity:



Single Phase, Half Wave, 60Hz, Resistive Or Inductive Load. For Capacitive Load, Derate Current By 20%

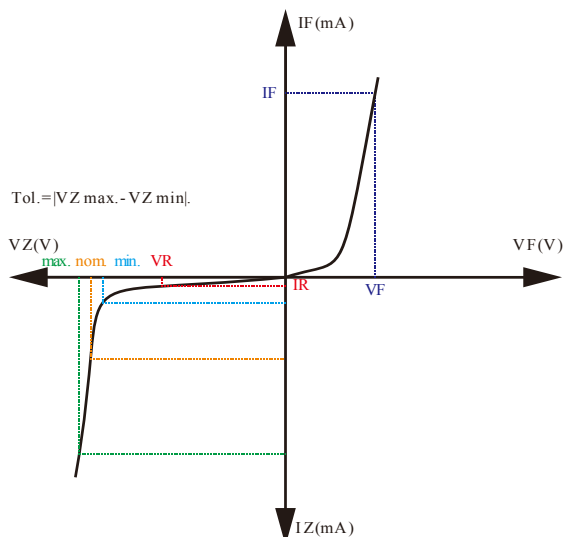
Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	350	mW
Maximum Regulator Current	I _{ZM}	PD/VZ	mA

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Operating Temperature Range	T _{OPR}	-55 ~ 150	°C
Storage temperature range	T _{STG}	-55 ~ 150	°C

C-V Curve Chart



Symbol Instruction

Symbol	Instruction
I _F	Maximum Average Forward Rectified Current
V _F	Maximum Instantaneous Forward Voltage
V _R	Working Peak Reverse Voltage
I _R	Maximum Reverse Leakage Current @ V _{RWM}
V _Z	The Zener Voltage @ I _Z
I _{ZT}	The Zener Current @ V _Z

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Table-1.ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device	MARK	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		Vz@Izt			Izt	Zzt @Izt	Zzk @Izk	Izk	IR	VR
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	μ A	V
BZT52C2V4	WX	2.40	2.28	2.52	5	100	600	1.00	50.0	1.0
BZT52C2V7	W1	2.70	2.57	2.84	5	100	600	1.00	20.0	1.0
BZT52C3V0	W2	3.00	2.85	3.15	5	95	600	1.00	10.0	1.0
BZT52C3V3	W3	3.30	3.14	3.47	5	95	600	1.00	5.0	1.0
BZT52C3V6	W4	3.60	3.42	3.78	5	90	600	1.00	5.0	1.0
BZT52C3V9	W5	3.90	3.71	4.10	5	90	600	1.00	3.0	1.0
BZT52C4V3	W6	4.30	4.09	4.52	5	90	600	1.00	3.0	1.0
BZT52C4V7	W7	4.70	4.47	4.94	5	80	500	1.00	3.0	2.0
BZT52C5V1	W8	5.10	4.85	5.36	5	60	480	1.00	2.0	2.0
BZT52C5V6	W9	5.60	5.32	5.88	5	40	400	1.00	1.0	2.0
BZT52C6V2	WA	6.20	5.89	6.51	5	10	150	1.00	3.0	4.0
BZT52C6V8	WB	6.80	6.46	7.14	5	15	80	1.00	2.0	4.0
BZT52C7V5	WC	7.50	7.13	7.88	5	15	80	1.00	1.0	5.0
BZT52C8V2	WD	8.20	7.79	8.61	5	15	80	1.00	0.7	5.0
BZT52C9V1	WE	9.10	8.65	9.56	5	15	100	1.00	0.5	6.0
BZT52C10	WF	10.00	9.50	10.50	5	20	150	1.00	0.2	7.0
BZT52C11	WG	11.00	10.45	11.55	5	20	150	1.00	0.1	8.0
BZT52C12	WH	12.00	11.40	12.60	5	25	150	1.00	0.1	8.0
BZT52C13	WI	13.00	12.35	13.65	5	30	170	1.00	0.1	8.0
BZT52C14	WY	14.00	13.30	14.70	5	25	110	1.00	0.1	10.5
BZT52C15	WJ	15.00	14.25	15.75	5	30	200	1.00	0.1	10.5
BZT52C16	WK	16.00	15.20	16.80	5	40	200	1.00	0.1	11.2
BZT52C18	WL	18.00	17.10	18.90	5	45	225	1.00	0.1	12.6
BZT52C20	WM	20.00	19.00	21.00	5	55	225	1.00	0.1	14.0
BZT52C22	WN	22.00	20.90	23.10	5	55	250	1.00	0.1	15.4
BZT52C24	WO	24.00	22.80	25.20	5	70	250	1.00	0.1	16.8
BZT52C27	WP	27.00	25.65	28.35	2	80	300	0.50	0.1	18.9
BZT52C30	WQ	30.00	28.50	31.50	2	80	300	0.50	0.1	21.0
BZT52C33	WR	33.00	31.35	34.65	2	80	325	0.50	0.1	23.1
BZT52C36	WS	36.00	34.20	37.80	2	90	350	0.50	0.1	25.2
BZT52C39	WT	39.00	37.05	40.95	2	130	350	0.50	0.1	27.3
BZT52C43	WU	43.00	40.85	45.15	2	150	375	0.50	0.05	30.1
BZT52C47	WV	47.00	44.65	49.35	2	170	1000	0.25	0.1	36.0
BZT52C51	X1	51.00	48.45	53.55	2	180	1300	0.25	0.1	39.0
BZT52C56	X2	56.00	53.20	58.80	2	200	1400	0.25	0.1	43.0
BZT52C62	X3	62.00	58.90	65.10	2	225	1400	0.25	0.1	47.0
BZT52C68	X4	68.00	64.60	71.40	2	240	1600	0.25	0.1	52.0
BZT52C75	X5	75.00	71.25	78.75	2	265	1700	0.25	0.1	56.0

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Typical Characteristics Curves

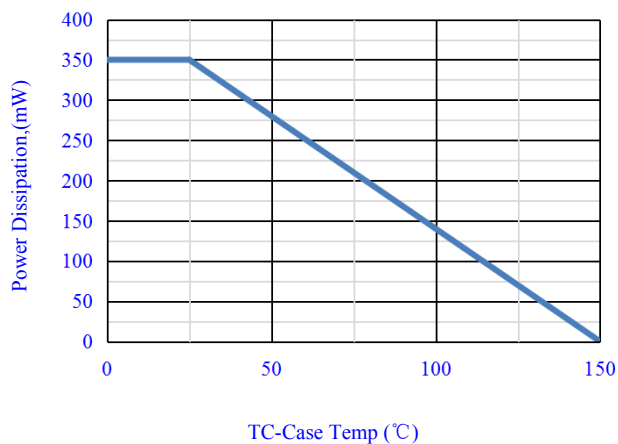


Fig.1-Power Dissipation Vs. Case Temp.

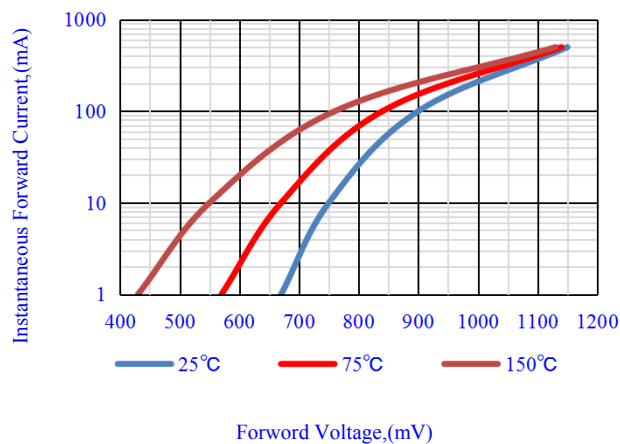


Fig.2-Forward Characteristics

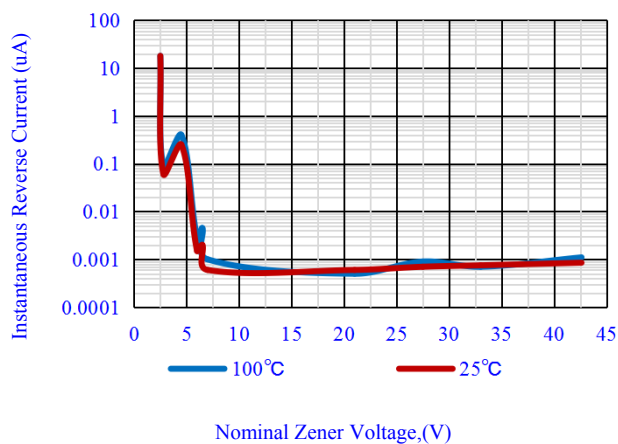


Fig.3-Typical Reverse Characteristics

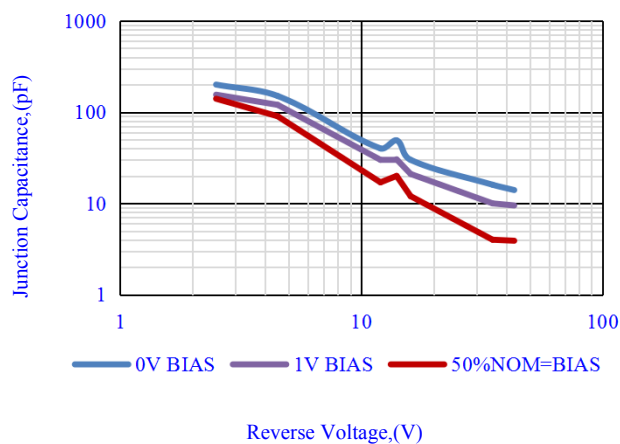


Fig.4-Typical Junction Capacitance

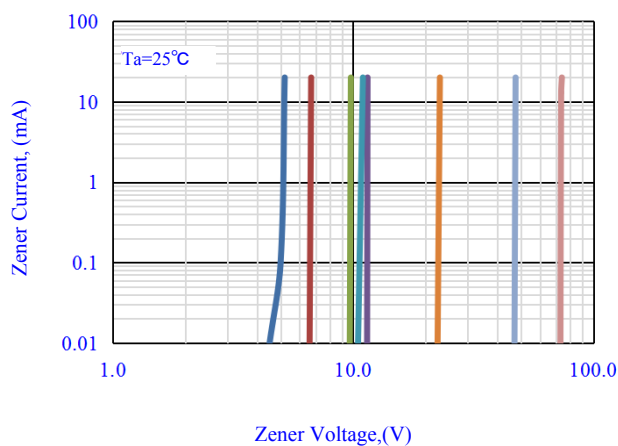


Fig.5-Zener Breakdown Characteristics

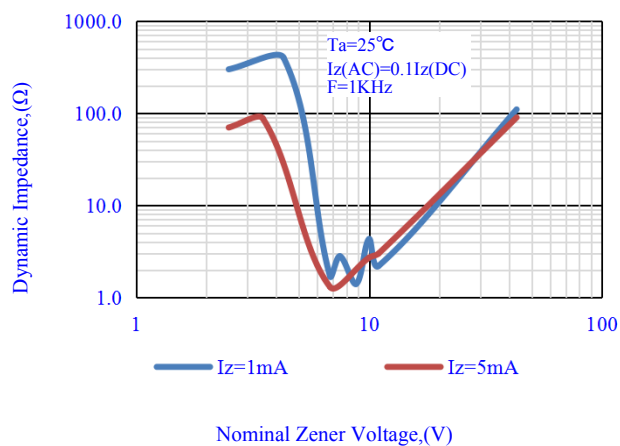
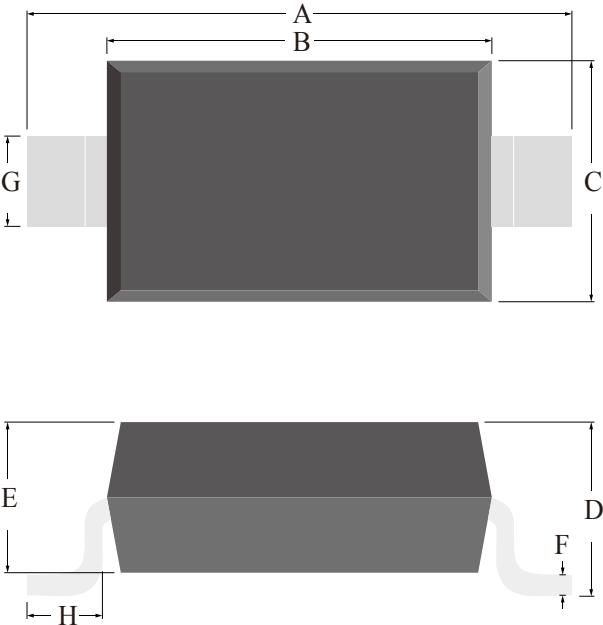


Fig.6-Effect Of Zener Voltage On Zener Impedance

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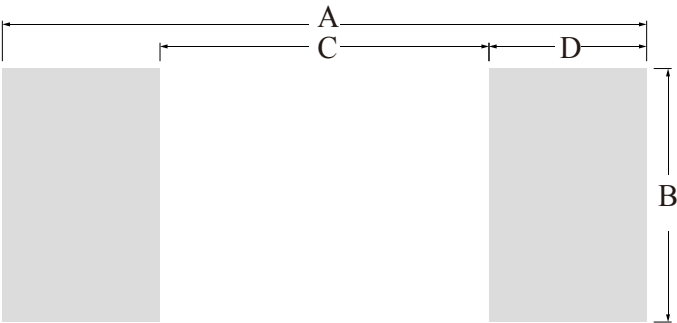
OUTLINE DRAWINGS



SOD-123

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	3.60	-	3.90	0.1417	-	0.1535
B	2.50	-	2.80	0.0984	-	0.1102
C	1.40	-	1.80	0.0551	-	0.0709
D	0.95	-	1.35	0.0374	-	0.0531
E	0.85	-	1.25	0.0335	-	0.0492
F	-	-	0.20	-	-	0.0079
G	0.50	-	0.70	0.0197	-	0.0276
H	0.40	-	-	0.0157	-	-

RECOMMEDND LAYOUT DRAWINGS



SOD-123

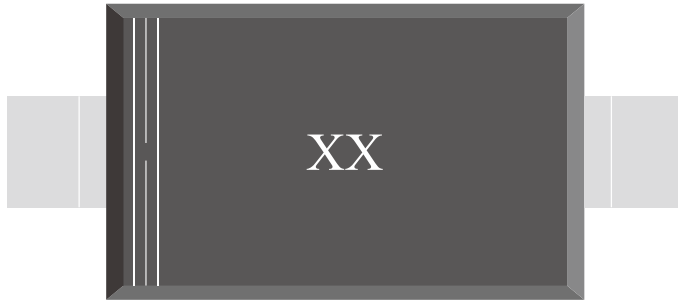
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	0.00	-	-	0.0000	-
B	-	1.22	-	-	0.0480	-
C	-	2.70	-	-	0.1063	-
D	-	0.78	-	-	0.0307	-

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MARKING

MARKING INSTRUCTION



XX=Make,XX=See Table-1
White band denotes cathode

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
SOD-123	P1	0.01	7" Reel	3000	15000	180000

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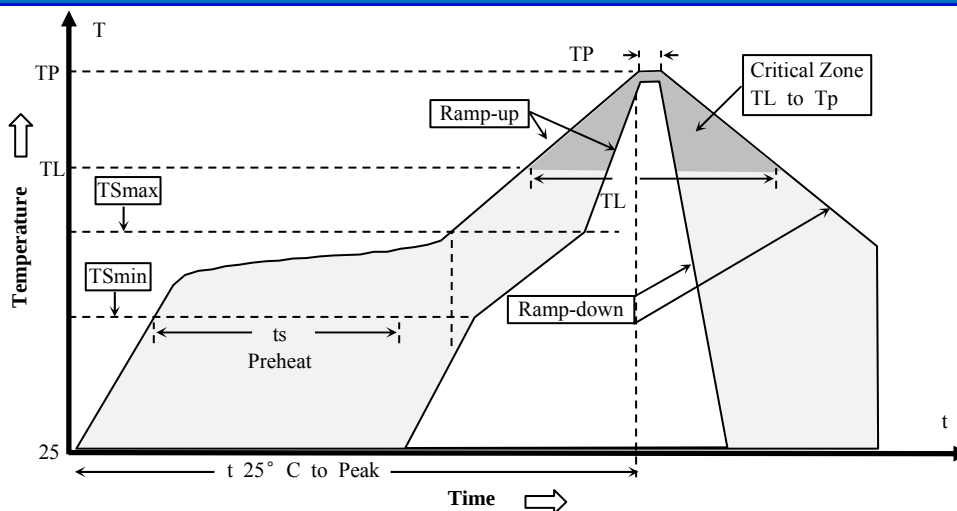
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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