

BZT52B series
ZENER DIODE



Voltage: 2.4~75 Volts

P_D: 500 mW

Package: SOD-123

Features

- Low Zener Impedance
- Power Dissipation of 500mW
- 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%

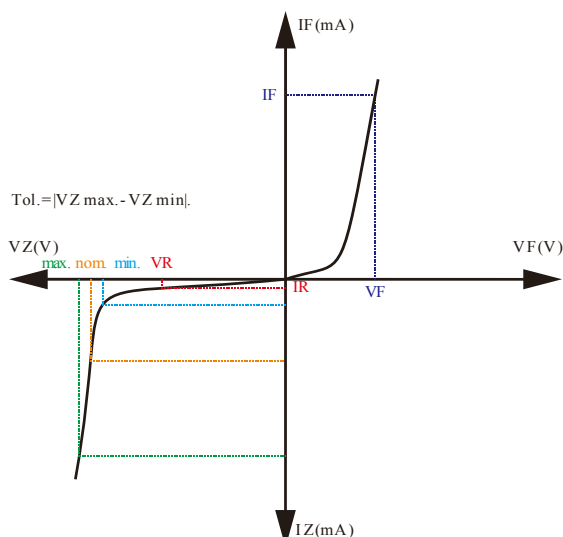
Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	500	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
BZT52B2V4	2WX	2.40	2.35	2.45	5	100	600	1.00	50.0	1.0
BZT52B2V7	2W1	2.70	2.65	2.75	5	100	600	1.00	20.0	1.0
BZT52B3V0	2W2	3.00	2.94	3.06	5	95	600	1.00	10.0	1.0
BZT52B3V3	2W3	3.30	3.23	3.37	5	95	600	1.00	5.0	1.0
BZT52B3V6	2W4	3.60	3.53	3.67	5	90	600	1.00	5.0	1.0
BZT52B3V9	2W5	3.90	3.82	3.98	5	90	600	1.00	3.0	1.0
BZT52B4V3	2W6	4.30	4.21	4.39	5	90	600	1.00	3.0	1.0
BZT52B4V7	2W7	4.70	4.61	4.79	5	80	500	1.00	3.0	2.0
BZT52B5V1	2W8	5.10	5.00	5.20	5	60	480	1.00	2.0	2.0
BZT52B5V6	2W9	5.60	5.49	5.71	5	40	400	1.00	1.0	2.0
BZT52B6V2	2WA	6.20	6.08	6.32	5	10	150	1.00	3.0	4.0
BZT52B6V8	2WB	6.80	6.66	6.94	5	15	80	1.00	2.0	4.0
BZT52B7V5	2WC	7.50	7.35	7.65	5	15	80	1.00	1.0	5.0
BZT52B8V2	2WD	8.20	8.04	8.36	5	15	80	1.00	0.7	5.0
BZT52B9V1	2WE	9.10	8.92	9.28	5	15	100	1.00	0.5	6.0
BZT52B10	2WF	10.00	9.80	10.20	5	20	150	1.00	0.2	7.0
BZT52B11	2WG	11.00	10.78	11.22	5	20	150	1.00	0.1	8.0
BZT52B12	2WH	12.00	11.76	12.24	5	25	150	1.00	0.1	8.0
BZT52B13	2WI	13.00	12.74	13.26	5	30	170	1.00	0.1	8.0
BZT52B14	2WY	14.00	13.72	14.28	5	25	110	1.00	0.1	10.5
BZT52B15	2WJ	15.00	14.70	15.30	5	30	200	1.00	0.1	10.5
BZT52B16	2WK	16.00	15.68	16.32	5	40	200	1.00	0.1	11.2
BZT52B18	2WL	18.00	17.64	18.36	5	45	225	1.00	0.1	12.6
BZT52B20	2WM	20.00	19.60	20.40	5	55	225	1.00	0.1	14.0
BZT52B22	2WN	22.00	21.56	22.44	5	55	250	1.00	0.1	15.4
BZT52B24	2WO	24.00	23.52	24.48	5	70	250	1.00	0.1	16.8
BZT52B27	2WP	27.00	26.46	27.54	2	80	300	0.50	0.1	18.9
BZT52B30	2WQ	30.00	29.40	30.60	2	80	300	0.50	0.1	21.0
BZT52B33	2WR	33.00	32.34	33.66	2	80	325	0.50	0.1	23.1
BZT52B36	2WS	36.00	35.28	36.72	2	90	350	0.50	0.1	25.2
BZT52B39	2WT	39.00	38.22	39.78	2	130	350	0.50	0.1	27.3
BZT52B43	2WU	43.00	42.14	43.86	2	130	350	0.50	0.1	29.4
BZT52B47	2WV	47.00	45.83	48.17	2	170	1000	0.25	0.1	36.0
BZT52B51	2X1	51.00	49.73	52.27	2	180	1300	0.25	0.1	39.0
BZT52B56	D6	56.00	54.60	57.40	2	200	1400	0.25	0.1	43.0
BZT52B62	2X3	62.00	60.45	63.55	2	225	1400	0.25	0.1	47.0
BZT52B68	2X4	68.00	66.30	69.70	2	240	1600	0.25	0.1	52.0
BZT52B75	2X5	75.00	73.13	76.87	2	265	1700	0.25	0.1	56.0

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Typical Characteristics Curves

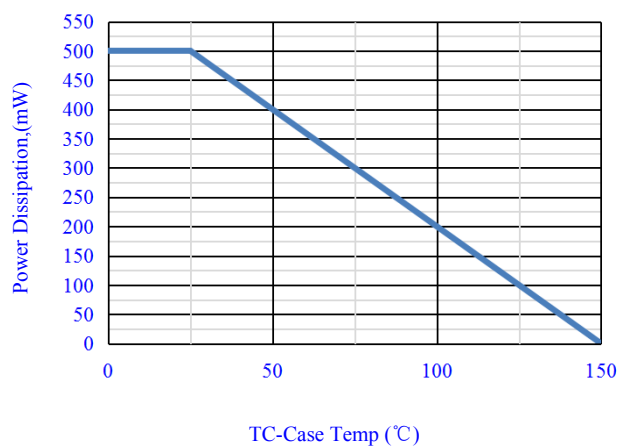


Fig.1-Power Dissipation Vs. Case Temp.

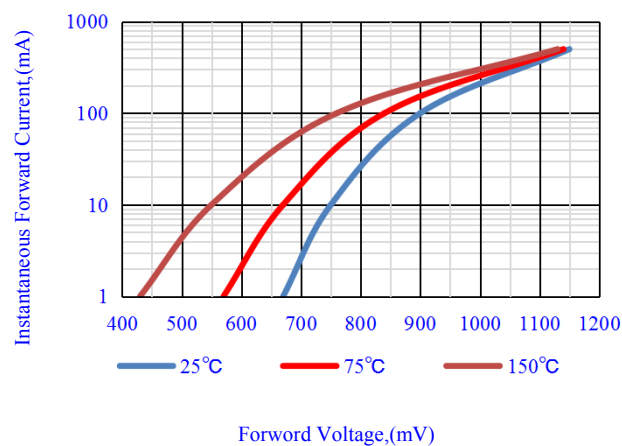


Fig.2-Forward Characteristics

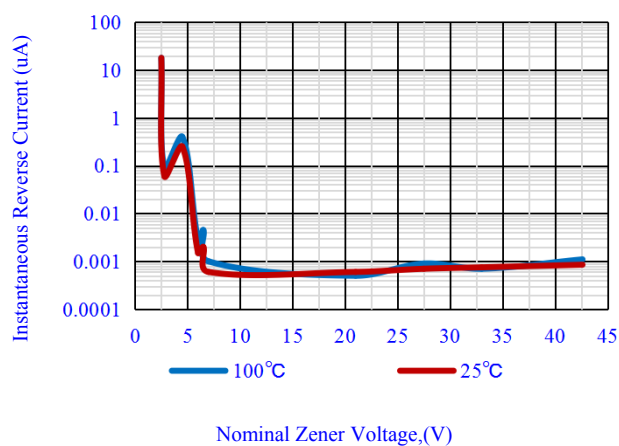


Fig.3-Typical Reverse Characteristics

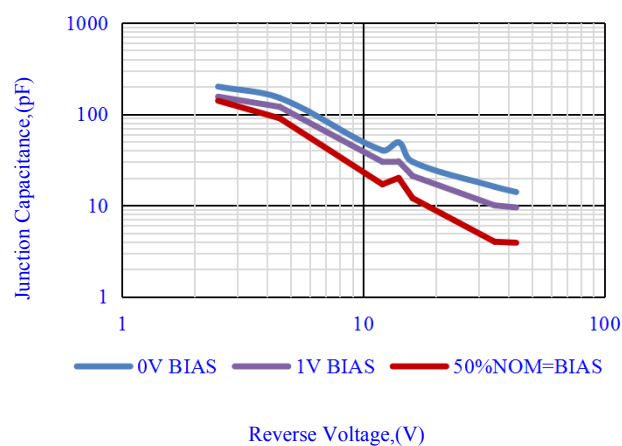


Fig.4-Typical Junction Capacitance

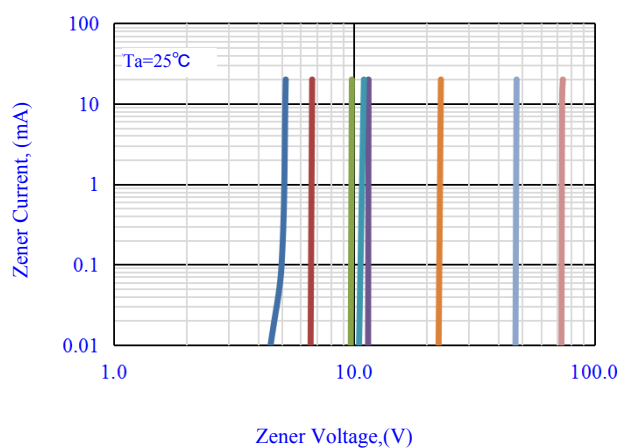


Fig.5-Zener Breakdown Characteristics

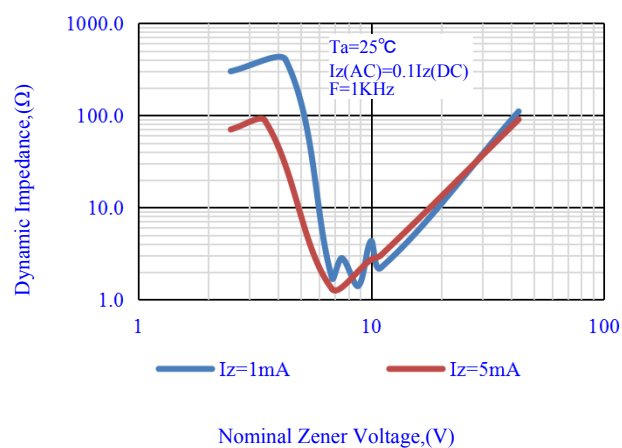
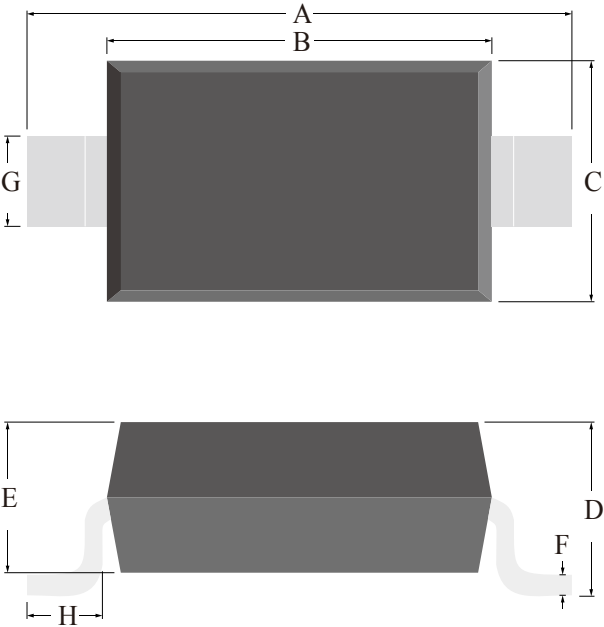


Fig.6-Effect Of Zener Voltage On Zener Impedance

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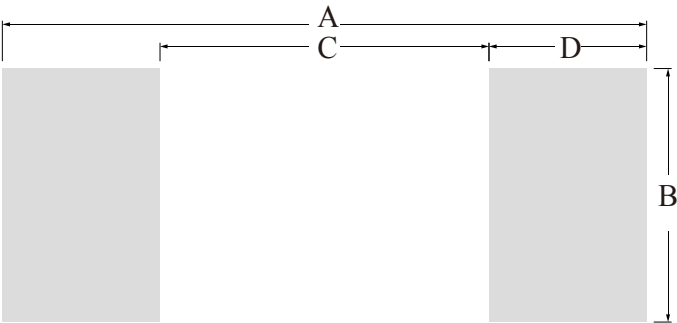
OUTLINE DRAWINGS



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

XXX=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	45000	180000

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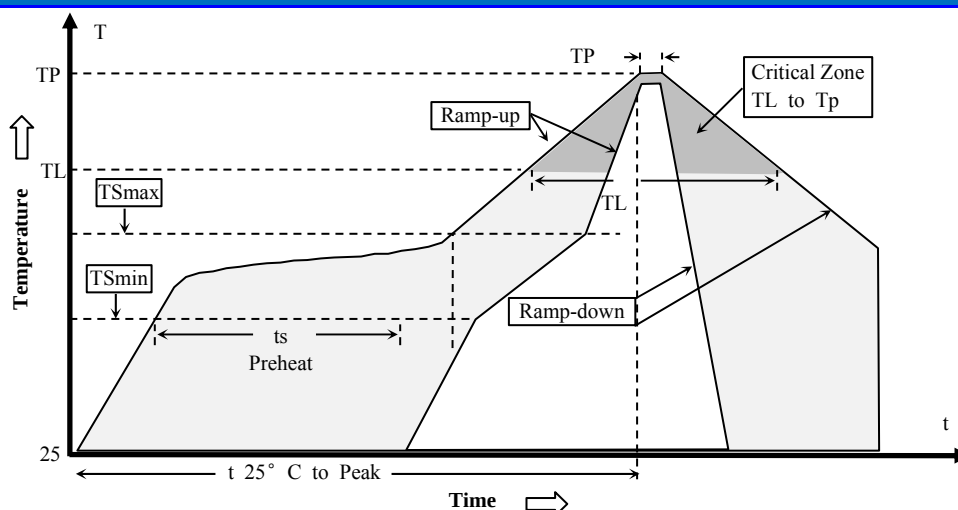
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Recommended wave soldering condition

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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