



BZT52B series

ZENER DIODE



VOLTAGE: 2.4~75 Volts

POWER: 200 mW

Package: SOD-323

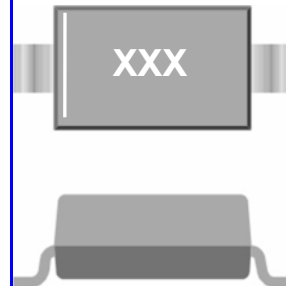
Marking And Polarity

FEATURES

- Low Zener Impedance
- Power Dissipation of 200mW
- High Stability and High Reliability
- Zener Voltage Tolerance: $\pm 2\%$ (C Series)

MECHANICAL DATA

- **Package:** Molding Compound Meets UL 94 V-0 Flammability Rating, RoHS-Compliant
- **Polarity:** As Marked On Case
- **Mounting Position:** Any
- **Weight:** App. 0.0041 Grams (0.00014 Ounce)



Remark:

- ①. XXX=Mark
- ②. White band denotes cathode

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Power Dissipation (Note1)	P_D	200	mW
Maximum instantaneous forward voltage@ $I_F=10\text{mA}$ (Note2)	V_F	1	V
Operating Temperature Range	T_{OPR}	-55 ~ 150	°C
Storage temperature range	T_{STG}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	400	°C/W

Notes: 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²

2. Pulse width < 10 ms

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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
		Min(V)	Nom(V)	Max(V)	mA	Ω		mA	uA	V
BZT52B2V4S	2WX	2.35	2.4	2.45	5	100	600	1.0	50	1.0
BZT52B2V7S	2W1	2.65	2.7	2.75	5	100	600	1.0	20	1.0
BZT52B3V0S	2W2	2.94	3.0	3.06	5	95	600	1.0	10	1.0
BZT52B3V3S	2W3	3.23	3.3	3.37	5	95	600	1.0	5	1.0
BZT52B3V6S	2W4	3.53	3.6	3.67	5	90	600	1.0	5	1.0
BZT52B3V9S	2W5	3.82	3.9	3.98	5	90	600	1.0	3	1.0
BZT52B4V3S	2W6	4.21	4.3	4.39	5	90	600	1.0	3	1.0
BZT52B4V7S	2W7	4.61	4.7	4.79	5	80	500	1.0	3	2.0
BZT52B5V1S	2W8	5.00	5.1	5.20	5	60	480	1.0	2	2.0
BZT52B5V6S	2W9	5.49	5.6	5.71	5	40	400	1.0	1	2.0
BZT52B6V2S	2WA	6.08	6.2	6.32	5	10	150	1.0	3	4.0
BZT52B6V8S	2WB	6.66	6.8	6.94	5	15	80	1.0	2	4.0
BZT52B7V5S	2WC	7.35	7.5	7.65	5	15	80	1.0	1	5.0
BZT52B8V2S	2WD	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0
BZT52B9V1S	2WE	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0
BZT52B10S	2WF	9.80	10.0	10.20	5	20	150	1.0	0.2	7.0
BZT52B11S	2WG	10.78	11.0	11.22	5	20	150	1.0	0.1	8.0
BZT52B12S	2WH	11.76	12.0	12.24	5	25	150	1.0	0.1	8.0
BZT52B13S	2WI	12.74	13.0	13.26	5	30	170	1.0	0.1	8.0
BZT52B15S	2WJ	14.70	15.0	15.30	5	30	200	1.0	0.1	10.5
BZT52B16S	2WK	15.68	16.0	16.32	5	40	200	1.0	0.1	11.2
BZT52B18S	2WL	17.64	18.0	18.36	5	45	225	1.0	0.1	12.6
BZT52B20S	2WM	19.60	20.0	20.40	5	55	225	1.0	0.1	14.0
BZT52B22S	2WN	21.56	22.0	22.44	5	55	250	1.0	0.1	15.4
BZT52B24S	2WO	23.52	24.0	24.48	5	70	250	1.0	0.1	16.8
BZT52B27S	2WP	26.46	27.0	27.54	2	80	300	0.5	0.1	18.9
BZT52B30S	2WQ	29.40	30.0	30.60	2	80	300	0.5	0.1	21.0
BZT52B33S	2WR	32.34	33.0	33.66	2	80	325	0.5	0.1	23.1
BZT52B36S	2WS	35.28	36.0	36.72	2	90	350	0.5	0.1	25.2
BZT52B39S	2WT	38.22	39.0	39.78	2	130	350	0.5	0.1	27.3
BZT52B43S	2WU	42.14	43.0	43.86	2	130	350	0.5	0.1	29.4
BZT52B47S	2WV	46.06	47.0	48.17	2	170	1000	0.25	0.1	36.0
BZT52B51S	2X1	49.98	51.0	52.27	2	180	1300	0.25	0.1	39.0
BZT52B56S	2X2	54.88	56.0	57.40	2	200	1400	0.25	0.1	43.0
BZT52B62S	2X3	60.76	62.0	63.55	2	225	1400	0.25	0.1	47.0
BZT52B68S	2X4	66.64	68.0	69.70	2	240	1600	0.25	0.1	52.0
BZT52B75S	2X5	73.13	75.0	76.87	2	265	1700	0.25	0.1	56.0

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halogen-free



Pb-Free



COMPLIANT

Typical Characteristics Curves

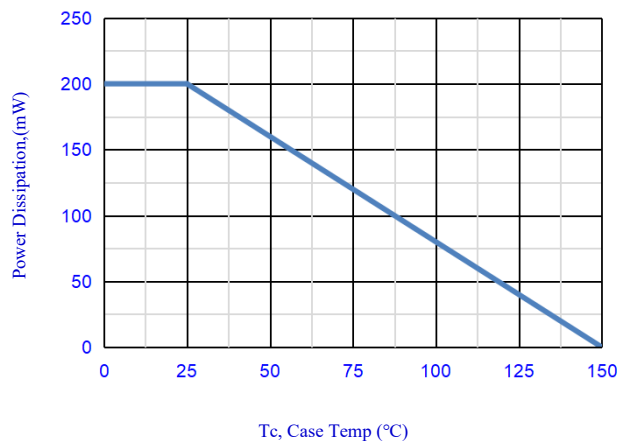


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

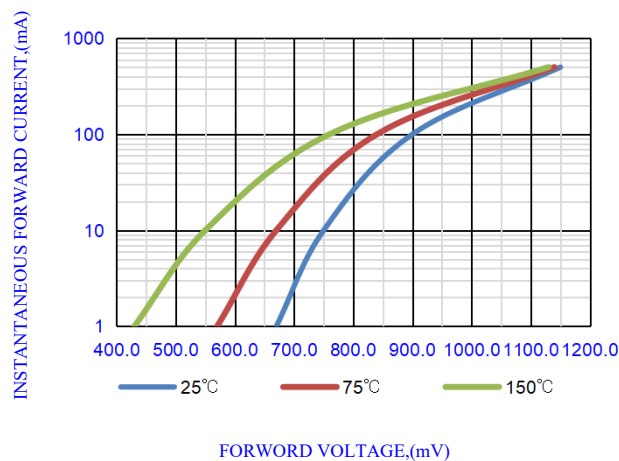


Fig.2- Forward characteristics

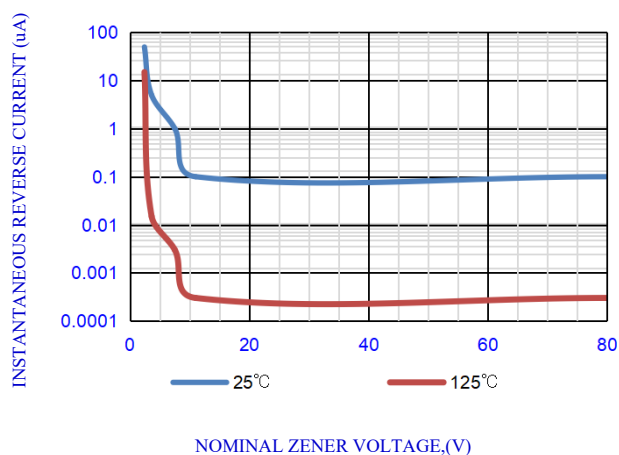


Fig.3- TYPICAL REVERSE CHARACTERISTICS

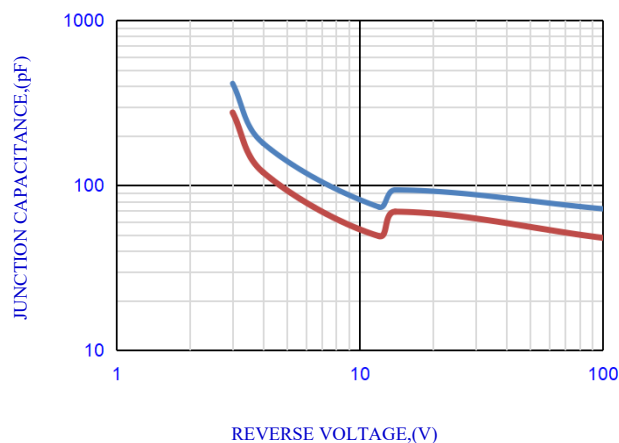


Fig.4- TYPICAL JUNCTION CAPACITANCE

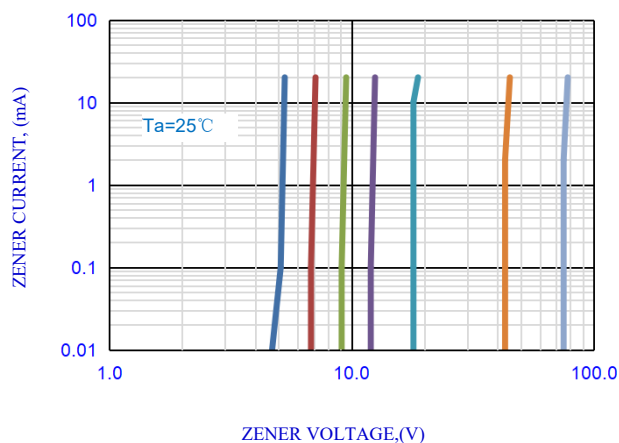


Fig.5-ZENER BREAKDOWN CHARACTERISTICS

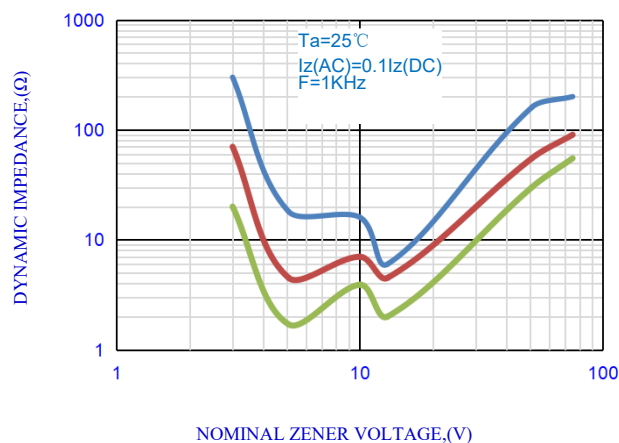


Fig.6-EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

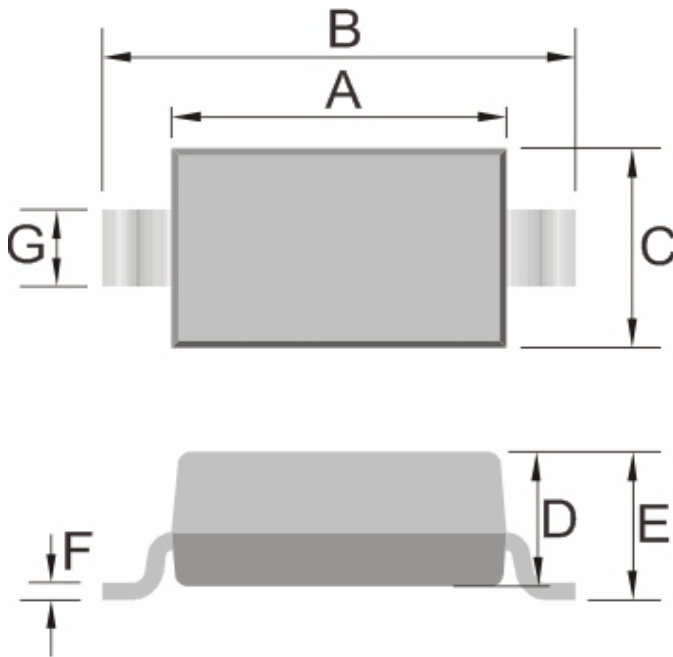
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OUTLINE DRAWINGS

SOD-323

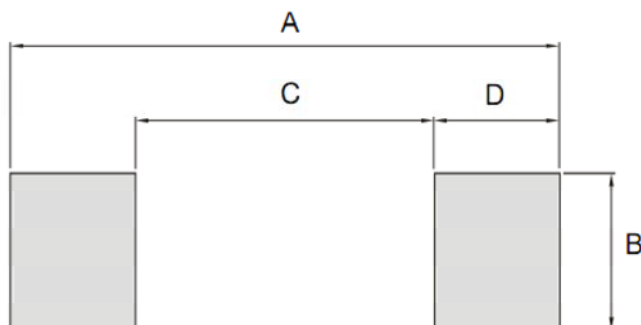


OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.550	-	1.850	0.061	-	0.073
B	2.400	-	2.700	0.094	-	0.106
C	1.150	-	1.450	0.045	-	0.057
D	0.750	-	1.050	-	-	0.041
E	0.700	-	1.000	0.028	-	0.039
F	-	0.100	-	-	0.004	-
G	0.250	-	0.550	0.010	-	0.022

RECOMMENDED LAYOUT DRAWINGS

SOD-323



RECOMMENDED LAYOUT DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	--	2.900	--	--	0.114	--
B	--	0.500	--	--	0.020	--
C	--	1.440	--	--	0.057	--
D	--	0.730	--	--	0.029	--

PACKING INFORMATION

Package	Pack	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Outer Carton Size L×W×H(mm)	Quantity (pcs/carton)
SOD-323	T/R	185×185×65	3000	390×400×230	12000

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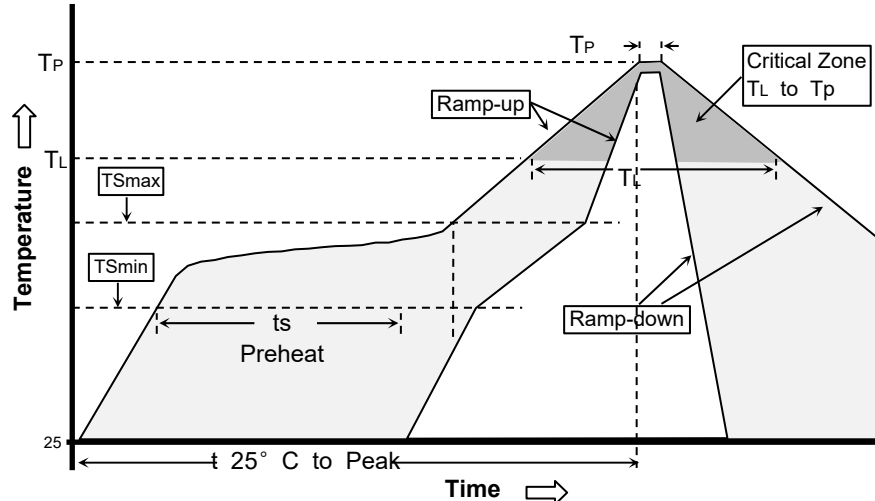
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Recommended wave soldering condition

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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