

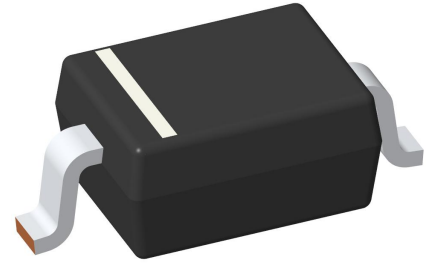
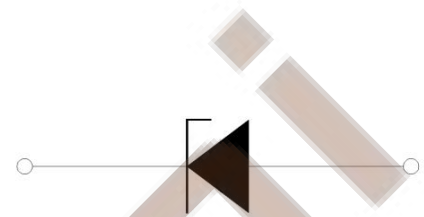
General Characteristics



V _Z	I _{ZT}	V _{Z@I_{ZT}}	T _{smax}
2.0V~75V	5mA/2mA	±5%	150℃

Features

- SOD-323 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 3
- High temperature soldering guaranteed 260℃/10seconds at terminals



Application

- Linear voltage regulator
- DC regulator
- Small-signal surge protection



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
BZT52CxxS Series	SOD-323	XX	3000

Absolute Maximum Ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbols	Value	Units
Power Dissipation.(Note 1)	P _d	200	mW
Forward Voltage @I _F =10mA.(Note 2)	V _f	0.9	V
Thermal Resistance Junction to Ambient Air	R _{θJA}	625	℃/W
Junction temperature	T _j	-55-+150	℃
Storage temperature range	T _{stg}	-55-+150	℃

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

2)Short duration test pulse used to minimize self-heating effect.

3)f=1KHz

Electrical Characteristics (Ta=25℃, unless otherwise noted)

Device	Marking	Zener Voltage Range				Maximum Zenner Impedance			Maximum Reverse Current		Typical Temperature coefficient		Test Current IZTC
		Vz@Izt			Izt	Zzt@Izt	Zzk@Izk	Izk	IR	VR	@IzTC=mV/°C		
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	uA	V	Min	Max	
BZT52C2V0S	WY	2.0	1.90	2.10	5	150	600	1.0	100	1.0	-3.5	0	5
BZT52C2V4S	WX	2.4	2.28	2.52	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7S	W1	2.7	2.57	2.84	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0S	W2	3.0	2.85	3.15	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3S	W3	3.3	3.14	3.47	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C3V6S	W4	3.6	3.42	3.78	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C3V9S	W5	3.9	3.71	4.10	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V3S	W6	4.3	4.09	4.52	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V7S	W7	4.7	4.47	4.94	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C5V1S	W8	5.1	4.85	5.36	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52C5V6S	W9	5.6	5.32	5.88	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52C6V2S	WA	6.2	5.89	6.51	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52C6V8S	WB	6.8	6.46	7.14	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52C7V5S	WC	7.5	7.13	7.88	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52C8V2S	WD	8.2	7.79	8.61	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1S	WE	9.1	8.65	9.56	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10S	WF	10	9.50	10.50	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11S	WG	11	10.45	11.55	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12S	WH	12	11.40	12.60	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13S	WI	13	12.35	13.65	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15S	WJ	15	14.25	15.75	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16S	WK	16	15.20	16.80	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18S	WL	18	17.10	18.90	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20S	WM	20	19.00	21.00	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22S	WN	22	20.90	23.10	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24S	WO	24	22.80	25.20	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27S	WP	27	25.65	28.35	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30S	WQ	30	28.50	31.50	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33S	WR	33	31.35	34.65	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36S	WS	36	34.20	37.80	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39S	WT	39	37.05	40.95	2	130	350	0.5	0.1	27.3	33.4	41.2	2

Device	Marking	Zener Voltage Range				Maximum Zenner Impedance			Maximum Reverse Current		Typical Temperature coefficient		Test Current IZTC
		Vz@Izt			Izt	Zzt@Izt	Zzk@Izk	Izk	IR	VR	@IzTC=mV/°C		
		Nom(V)	Min(V)	Max(V)	mA	Ω		mA	uA	V	Min	Max	mA
BZT52C43S	WU	43	40.85	45.15	2	100	700	1.0	0.1	32.0	37.6	46.6	2
BZT52C47S	WV	47	44.65	49.35	2	100	750	1.0	0.1	35.0	42.0	51.8	2
BZT52C51S	WW	51	48.45	53.55	2	100	750	1.0	0.1	38.0	46.6	57.2	2
BZT52C56S	XW	56	53.20	58.8	2	135	700	1.0	0.1	39.0	52.2	63.8	2
BZT52C62S	6E	62	58.90	65.10	2	200	1000	1.0	0.2	47.0	58.8	71.6	2
BZT52C68S	6F	68	64.60	71.40	2	250	1000	1.0	0.2	52.0	65.6	79.8	2
BZT52C75S	6H	75	71.25	78.75	2	300	1000	1.0	0.2	57.0	73.4	88.6	2

Typical Performance Characteristics

Fig 1: P_D-T_a Curve

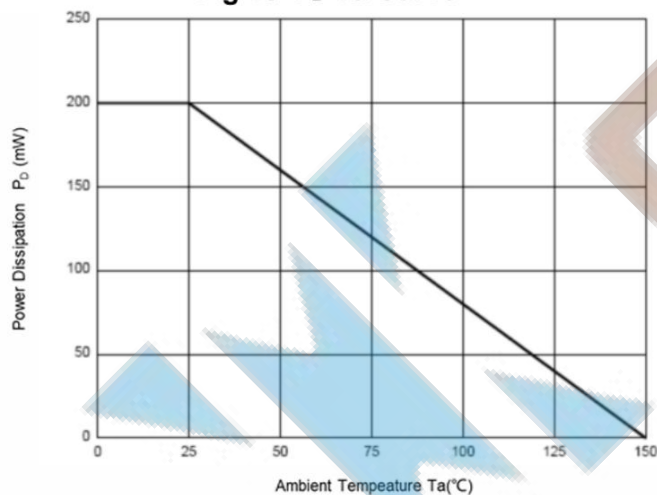


Fig 2: Zener Breakdown Characteristics

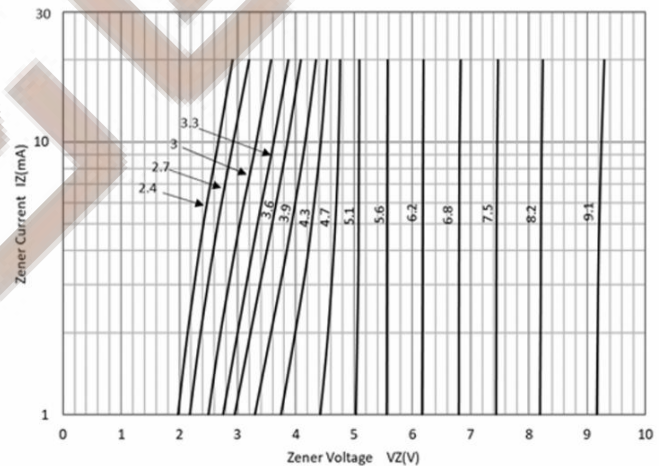


Fig 3: Zener Breakdown Characteristics

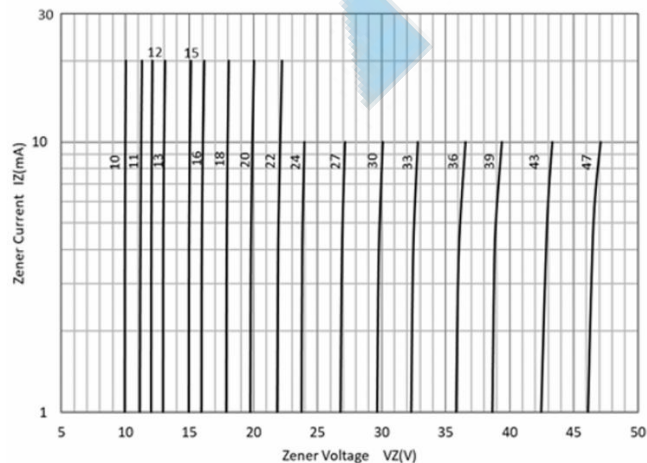


Fig 4: Zener Breakdown Characteristics

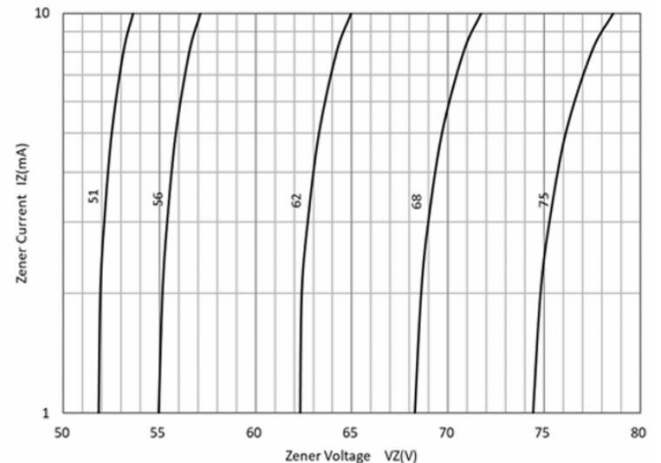


Fig 5: Typical Temperature Coefficient

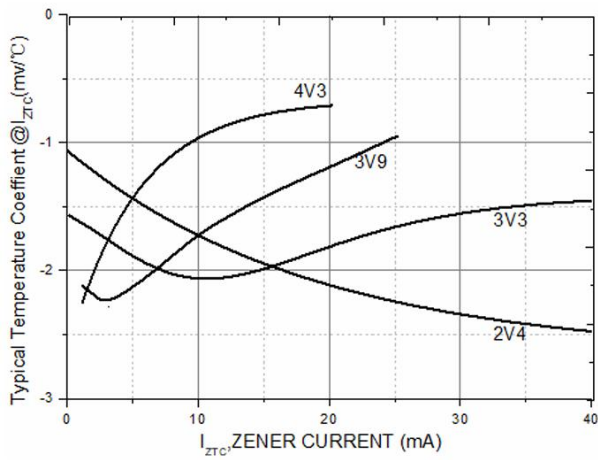


Fig 6: Typical Temperature Coefficient

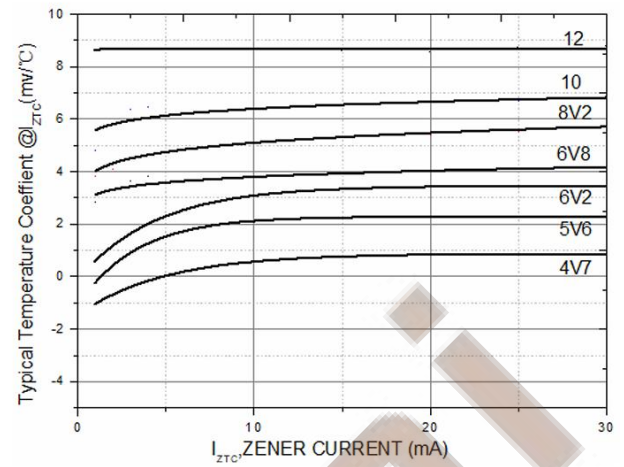
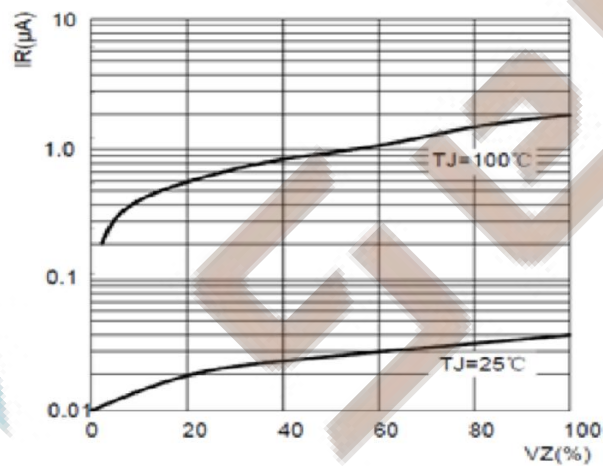
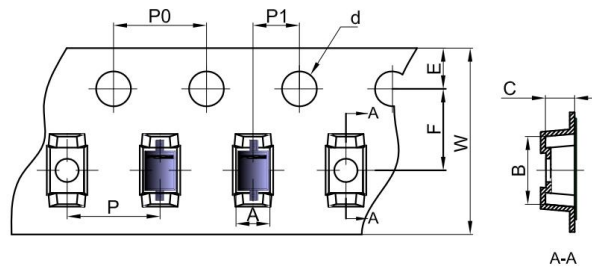


Fig 7: Typical reverse characteristics



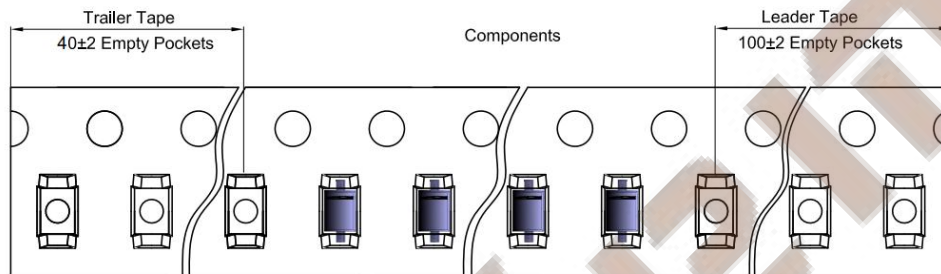
Package Information

Carrier Dimension(mm)

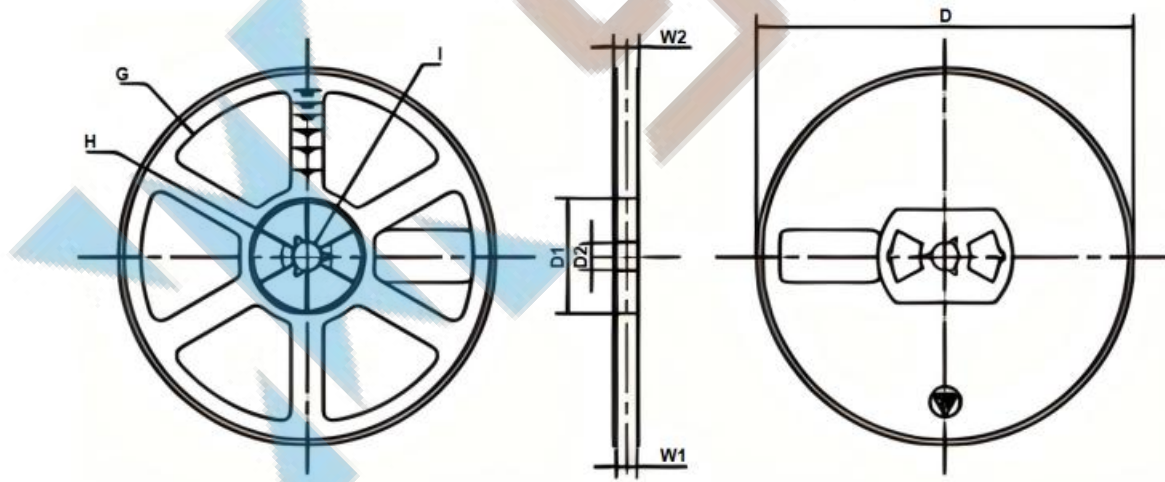


Dimensions are in millimeter

Pkg Type	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.46	2.90	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
(Tolerance)	±0.05	±0.05	±0.05	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.06/-0.1



Reel Dimension(mm)



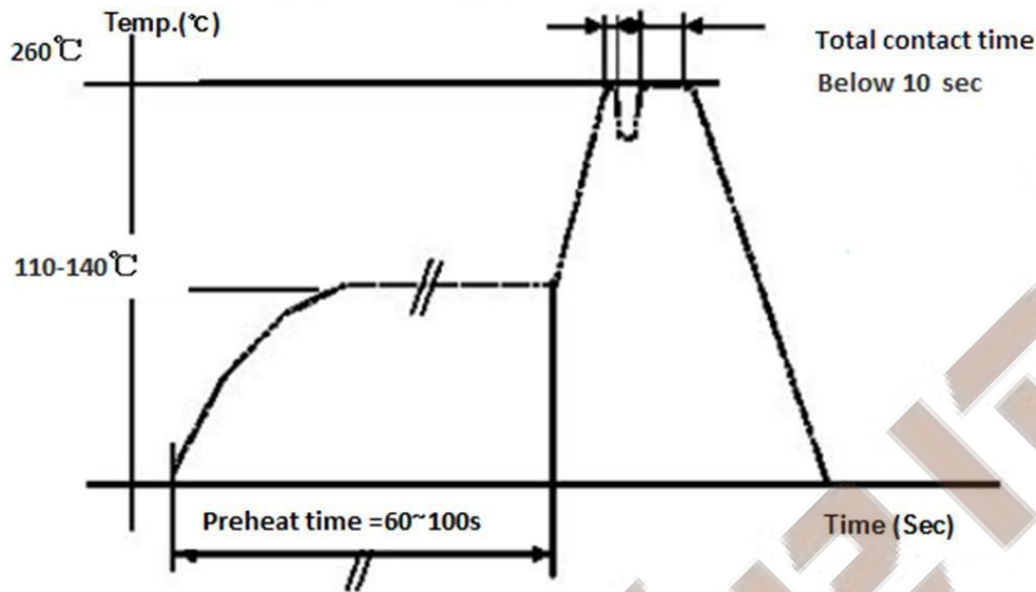
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

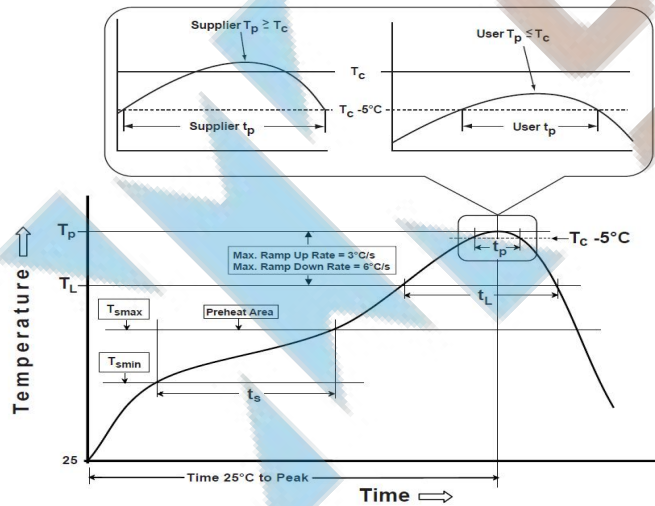
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOD-323	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

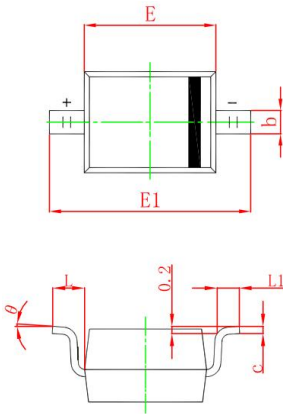
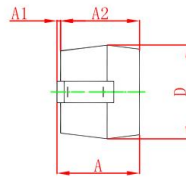


Preheat/Soak Temperature Min (Tsmin) Temperature Max (Tsmax) Time (ts) from (Tsmin to Tsmax)	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

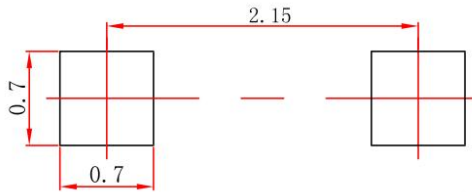
When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475 REF.		0.019 REF.	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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