FUXINSEMI
INNOVATOR IN SEMICONDUCTOR

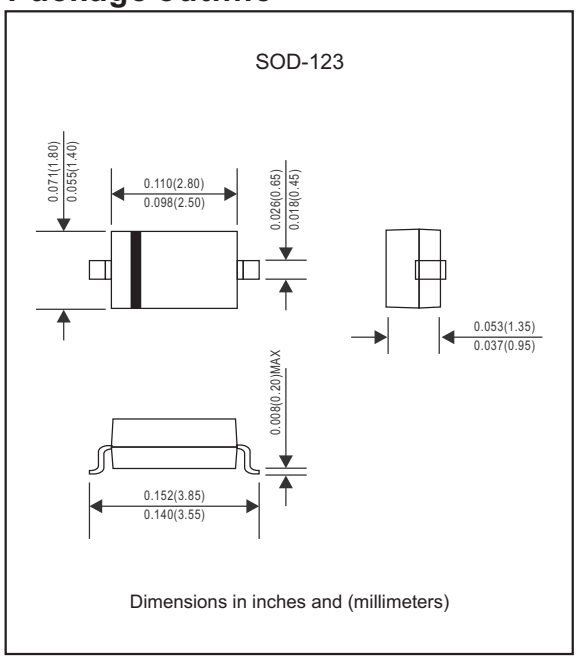
BZT52Bxxx Series

500mW Surface Mount Zener Diodes - 2.0V-75V

Features

- Silicon epitaxial planar chip structure.
- Zener Breakdown Voltage Range, 2.0V to 75V ex.BZT52B2V4
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Pb-Free package is available.
- Compliant to Halogen-free

Package outline



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Maximum ratings (at T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	@IF = 10mA	V_F			0.9	V
Total power dissipation	at T_A=25°C Mounted on FR-5 board, note1	P_D			500	mW
Thermal resistance	Junction to ambient, note1 Junction to case, note1	$R_{\theta JA}$ $R_{\theta JC}$		305 200		°C/W °C/W
Operating junction temperature range		T_J	-55		+150	°C
Storage temperature range		T_{STG}	-55		+150	°C

Note1.Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad area 25mm²

Fig.1 Maximum Continuous Power Derating

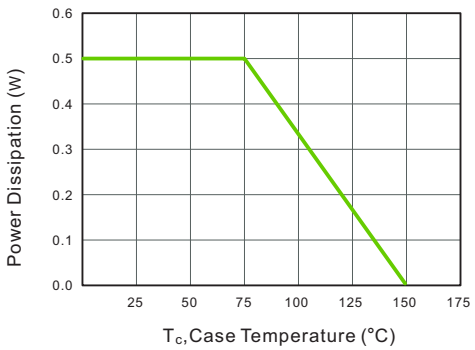
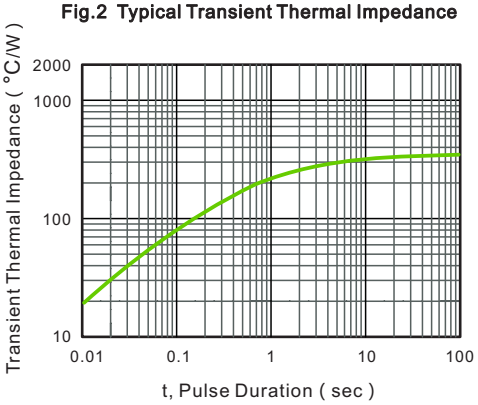


Fig.2 Typical Transient Thermal Impedance



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Characteristics at Ta = 25°C

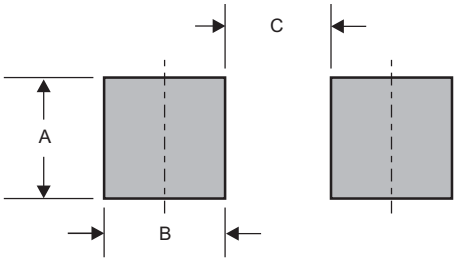
Type	Marking		Zener Voltage Range (1)			I_{ZT}	Dynamic Impedance	Reverse Current	
			V_{ZT} (at I_{ZT})				Z_{ZT} (at I_{ZT})	I_R	at V_R
	L1	L2	Min (V)	Nom (V)	Max (V)	(mA)	Max (Ω)	Max (μA)	(V)
BZT52B2V0	A4	2WY	1.96	2	2.04	5	100	120	0.5
BZT52B2V2	B4		2.16	2.2	2.24	5	100	120	0.7
BZT52B2V4	C4	2WX	2.35	2.4	2.45	5	100	120	1
BZT52B2V7	D4	2W1	2.65	2.7	2.75	5	110	120	1
BZT52B3V0	E4	2W2	2.94	3	3.06	5	120	50	1
BZT52B3V3	F4	2W3	3.23	3.3	3.37	5	130	20	1
BZT52B3V6	H4	2W4	3.53	3.6	3.67	5	130	10	1
BZT52B3V9	J4	2W5	3.82	3.9	3.98	5	130	5	1
BZT52B4V3	K4	2W6	4.21	4.3	4.39	5	130	5	1
BZT52B4V7	M4	2W7	4.61	4.7	4.79	5	130	2	1
BZT52B5V1	N4	2W8	5	5.1	5.20	5	130	2	1.5
BZT52B5V6	P4	2W9	5.49	5.6	5.71	5	80	1	2.5
BZT52B6V2	R4	2WA	6.08	6.2	6.32	5	50	1	3
BZT52B6V8	X4	2WB	6.66	6.8	6.94	5	30	0.5	3.5
BZT52B7V5	Y4	2WC	7.35	7.5	7.65	5	30	0.5	4
BZT52B8V2	Z4	2WD	8.04	8.2	8.36	5	30	0.5	5
BZT52B9V1	A5	2WE	8.92	9.1	9.28	5	30	0.5	6
BZT52B10	B5	2WF	9.8	10	10.2	5	30	0.1	7
BZT52B11	C5	2WG	10.78	11	11.22	5	30	0.1	8
BZT52B12	D5	2WH	11.76	12	12.24	5	35	0.1	9
BZT52B13	E5	2WI	12.74	13	13.26	5	35	0.1	10
BZT52B15	F5	2WJ	14.7	15	15.3	5	40	0.1	11
BZT52B16	H5	2WK	15.68	16	16.32	5	40	0.1	12
BZT52B18	J5	2WL	17.64	18	18.36	5	45	0.1	13
BZT52B20	K5	2WM	19.6	20	20.4	5	50	0.1	15
BZT52B22	M5	2WN	21.56	22	22.44	5	55	0.1	17
BZT52B24	N5	2WO	23.52	24	24.48	5	60	0.1	19
BZT52B27	P5	2WP	26.46	27	27.54	5	70	0.1	21
BZT52B30	R5	2WQ	29.4	30	30.6	5	80	0.1	23
BZT52B33	X5	2WR	32.34	33	33.66	5	80	0.1	25
BZT52B36	Y5	2WS	35.28	36	36.72	5	90	0.1	27
BZT52B39	Z5	2WT	38.22	39	39.78	2.5	100	2	30
BZT52B43	A6	2WU	42.14	43	43.86	2.5	130	2	33
BZT52B47	B6	2WV	46.06	47	47.94	2.5	150	2	36
BZT52B51	C6	2WW	49.98	51	52.02	2.5	180	1	39
BZT52B56	D6		54.88	56	57.12	2.5	180	1	43
BZT52B62	E6		60.76	62	63.24	2.5	200	0.2	47
BZT52B68	F6		66.64	68	69.36	2.5	250	0.2	52
BZT52B75	H6		73.5	75	76.5	2.5	300	0.2	57

(1) V_{ZT} is tested with pulses (20 ms)

Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Suggested solder pad layout

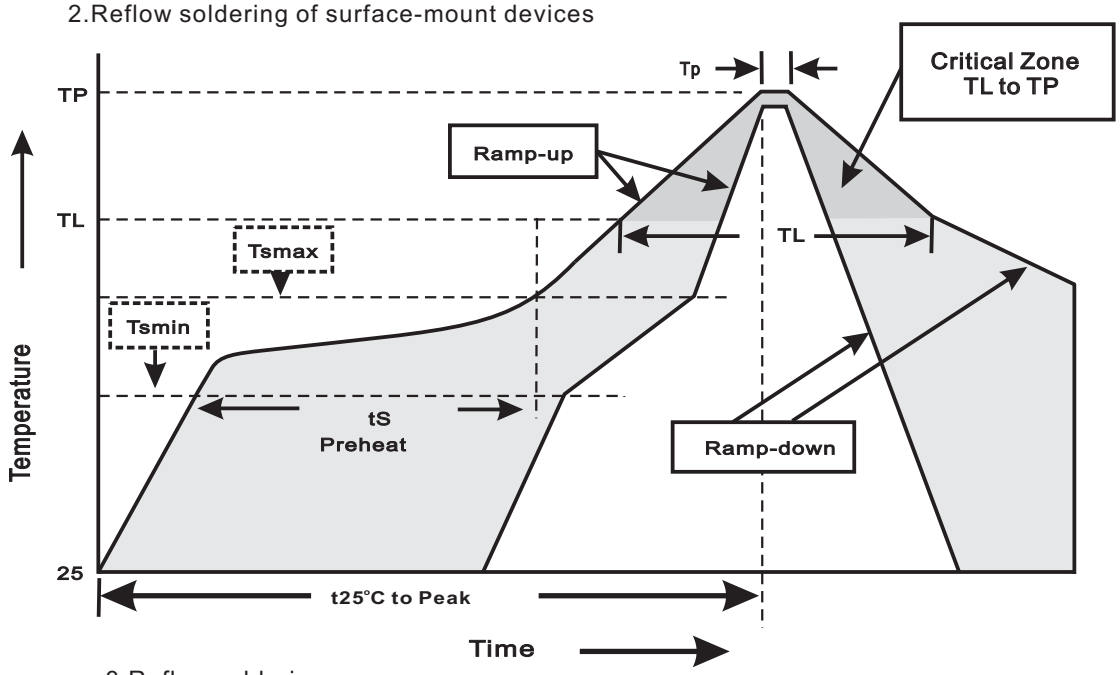


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123	0.048 (1.22)	0.036 (0.91)	0.093 (2.36)

Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	 217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes