

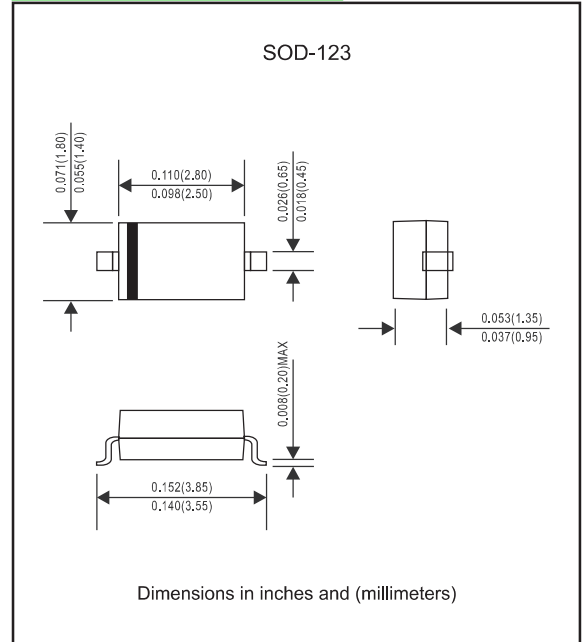
Features

- Silicon epitaxial planar chip structure.
- Wide zener reverse voltage range 2.4V to 75V.
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Pb-free package is available
- We declare that the material of product compliance with RoHS requirements.
- Compliant to Halogen-free

Mechanical data

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

Package outline



Maximum ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	@IF = 10mA	V_F			0.9	V
Total power dissipation	at $T_A=25^\circ\text{C}$ Mounted on FR-5 board, note 1	P_D			500	mW
Thermal resistance	Junction to ambient, note 1	$R_{\theta JA}$		305		$^\circ\text{C/W}$
	Junction to case, note 1	$R_{\theta JC}$		200		$^\circ\text{C/W}$
Operating junction temperature range		T_J	-55		+150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55		+150	$^\circ\text{C}$

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

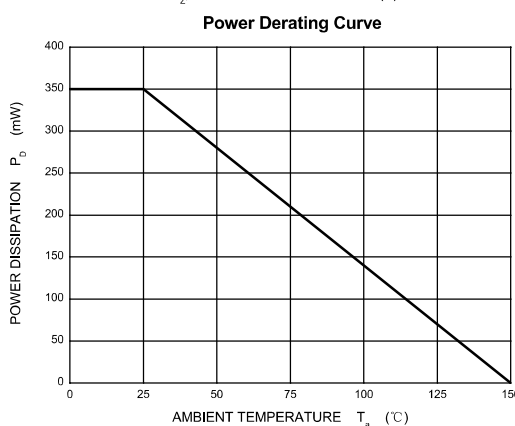
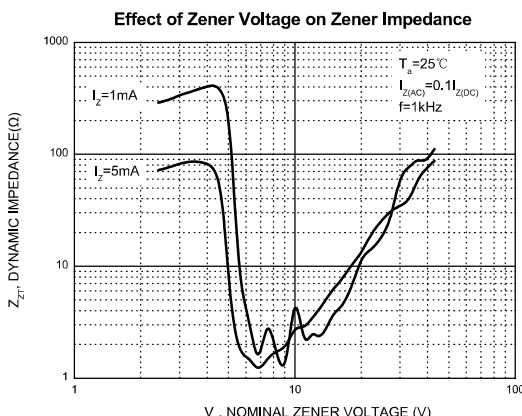
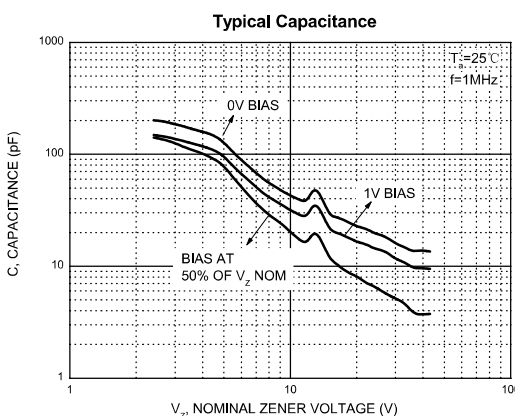
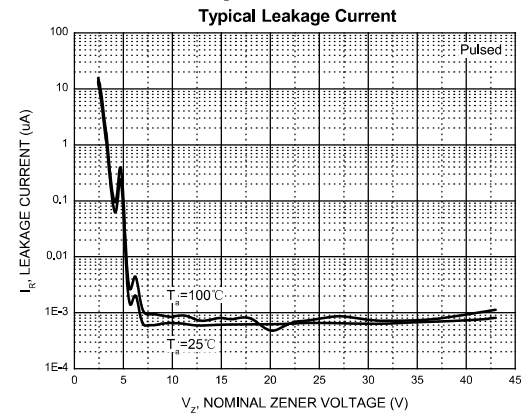
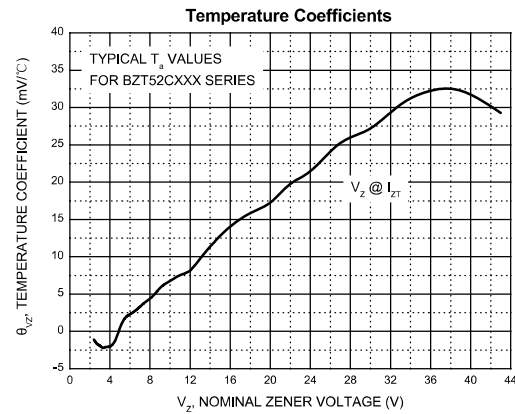
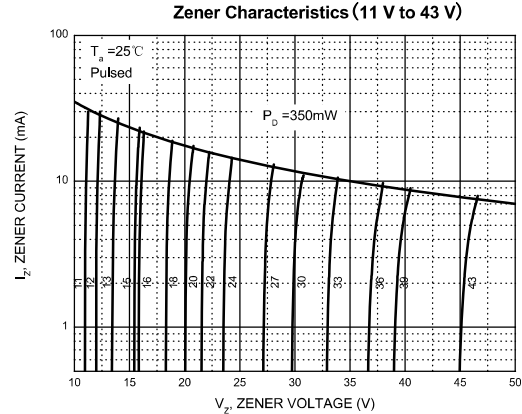
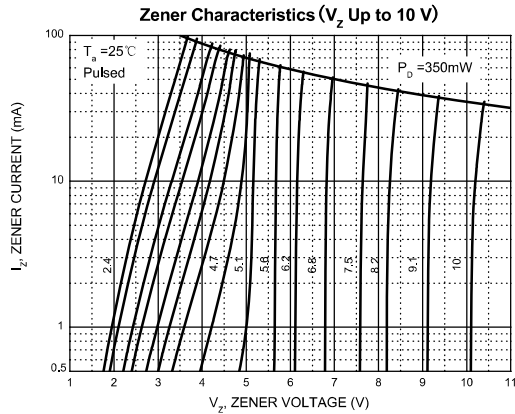
Electrical characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current	
		$V_Z @ I_{ZT}$				I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	I_R
		Min.(V)	Nom.(V)	Max.(V)	mA	(Ω)Max	(Ω)Max	mA	(μA)Max	Volts
BZT52C2V4	WX	2.2	2.4	2.6	5	100	600	1.0	50.0	1.0
BZT52C2V7	W1	2.5	2.7	2.9	5	100	600	1.0	20.0	1.0
BZT52C3V0	W2	2.8	3.0	3.2	5	95	600	1.0	10.0	1.0
BZT52C3V3	W3	3.1	3.3	3.5	5	95	600	1.0	5.0	1.0
BZT52C3V6	W4	3.4	3.6	3.8	5	90	600	1.0	5.0	1.0
BZT52C3V9	W5	3.7	3.9	4.1	5	90	600	1.0	3.0	1.0
BZT52C4V3	W6	4.0	4.3	4.6	5	90	600	1.0	3.0	1.0
BZT52C4V7	W7	4.4	4.7	5.0	5	80	500	1.0	3.0	2.0
BZT52C5V1	W8	4.8	5.1	5.4	5	60	480	1.0	2.0	2.0
BZT52C5V6	W9	5.2	5.6	6.0	5	40	400	1.0	1.0	2.0
BZT52C6V2	WA	5.8	6.2	6.6	5	10	150	1.0	3.0	4.0
BZT52C6V8	WB	6.4	6.8	7.2	5	15	80	1.0	2.0	4.0
BZT52C7V5	WC	7.0	7.5	7.9	5	15	80	1.0	1.0	5.0
BZT52C8V2	WD	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0
BZT52C9V1	WE	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0
BZT52C10	WF	9.4	10	10.6	5	20	150	1.0	0.2	7.0
BZT52C11	WG	10.4	11	11.6	5	20	150	1.0	0.1	8.0
BZT52C12	WH	11.4	12	12.7	5	25	150	1.0	0.1	8.0
BZT52C13	WI	12.4	13	14.1	5	30	170	1.0	0.1	8.0
BZT52C15	WJ	13.8	15	15.8	5	30	200	1.0	0.1	10.5
BZT52C16	WK	15.3	16	17.1	5	40	200	1.0	0.1	11.2
BZT52C18	WL	16.8	18	19.1	5	45	225	1.0	0.1	12.6
BZT52C20	WM	18.8	20	21.2	5	55	225	1.0	0.1	14.0
BZT52C22	WN	20.8	22	23.3	5	55	250	1.0	0.1	15.4
BZT52C24	WO	22.8	24	25.6	5	70	250	1.0	0.1	16.8
BZT52C27	WP	25.1	27	28.9	2	80	300	0.5	0.1	18.9
BZT52C30	WQ	28.0	30	32.0	2	80	300	0.5	0.1	21.0
BZT52C33	WR	31.0	33	35.0	2	80	325	0.5	0.1	23.1
BZT52C36	WS	34.0	36	38.0	2	90	350	0.5	0.1	25.2
BZT52C39	WT	37.0	39	41.0	2	130	350	0.5	0.1	27.3
BZT52C43	WU	40.0	43	46.0	2	150	375	0.5	0.1	32.0
BZT52C47	WV	44.6	47	49.4	2	170	1000	0.25	0.1	35.0
BZT52C51	X1	48.4	51	53.6	2	180	1300	0.25	0.1	38.0
BZT52C56	X2 / 6D	52.0	56	60.0	2.5	200	1400	0.25	1	43.0
BZT52C62	X3 / 6E	58.0	62	66.0	2.5	225	1400	0.25	0.2	47.0
BZT52C68	X4 / 6F	64.0	68	72.0	2.5	250	1600	0.25	0.2	52.0
BZT52C75	X5 / 6H	70.0	75	79.0	2.5	300	1700	0.25	0.2	57.0

Note:

1. Tested with pulses, period = 5ms, pulse width = 300us.
2. When provided, otherwise, parts are provided with date code only, and type number identifications appears on reel only.
3. f=1KHz.

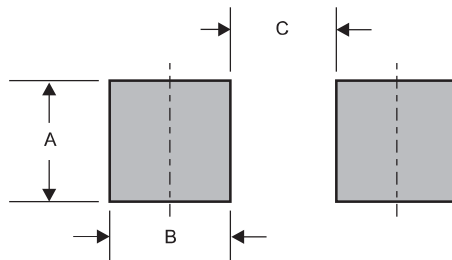
Rating and characteristic curves



Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Suggested solder pad layout

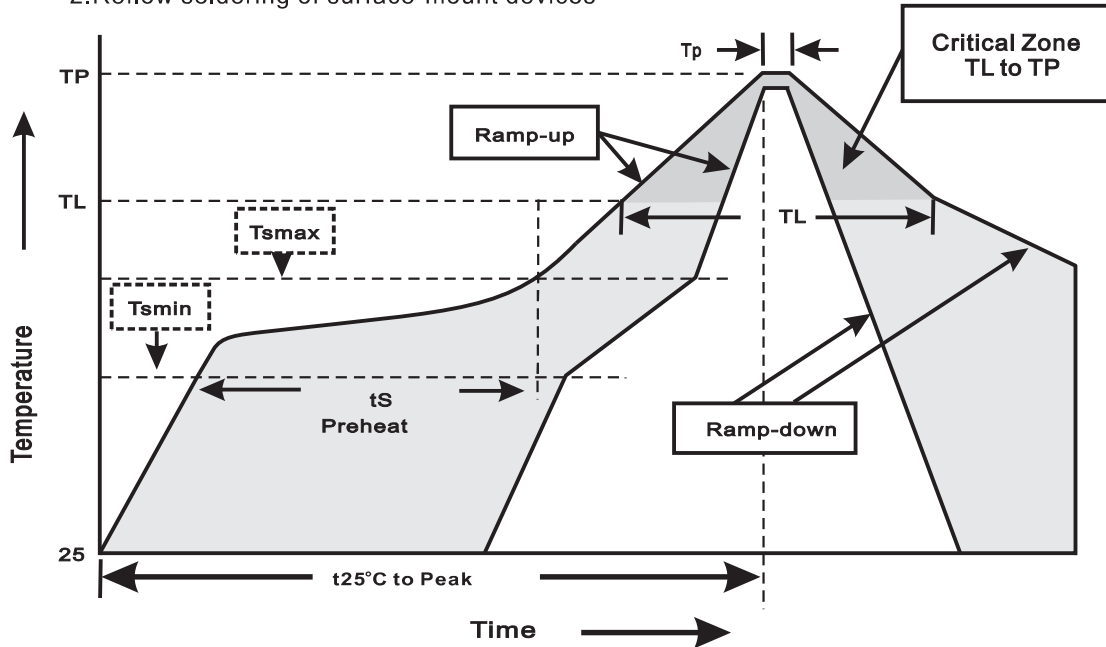


Dimensions in inches and (millimeters)

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(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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