

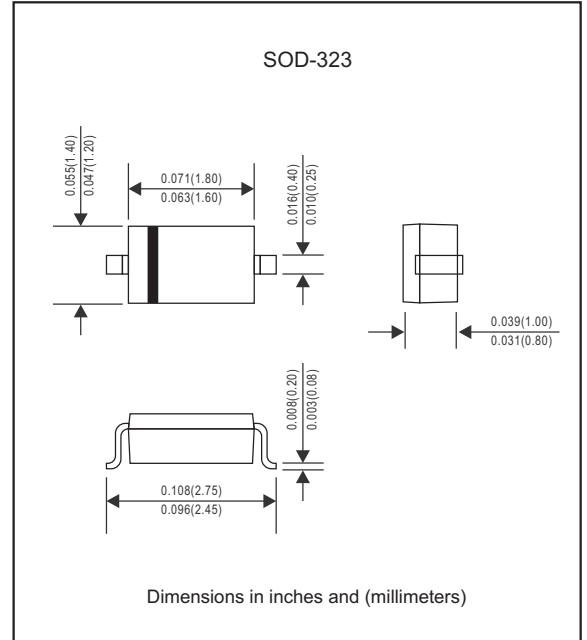
Features

- Silicon epitaxial planar chip structure.
- Wide zener reverse voltage range 2.4V to 51V.
- 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-323
- 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	$I_F = 10 \text{ mA}$	V_F			0.9	V
Power dissipation	$T_A=25^\circ\text{C}$ (note 1)	P_D			200	mW
Thermal resistance	Junction to ambient (note 1)	$R_{\theta JA}$		625		$^\circ\text{C}/\text{W}$
	Junction to case (note 1)	$R_{\theta JC}$		350		$^\circ\text{C}/\text{W}$
Operating junction temperature range		T_J	-55		+150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55		+150	$^\circ\text{C}$

Note 1: Mounted on FR-4 minimum pad

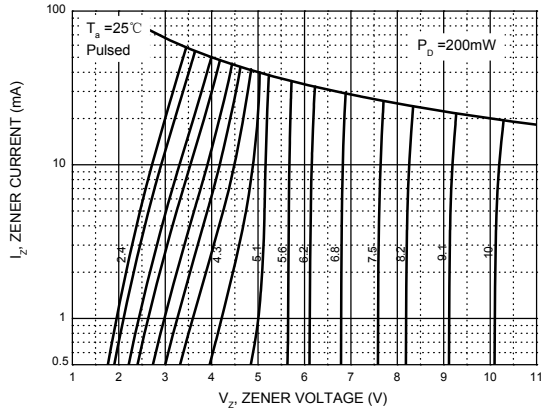
Electrical characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

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)
BZT52B2V0S	B0		1.96	2.0	2.04	5	100	120	0.5
BZT52B2V2S	C0		2.16	2.2	2.24	5	100	120	0.7
BZT52B2V4S	C1	2WX	2.35	2.4	2.45	5	100	120	1
BZT52B2V7S	D1	2W1	2.65	2.7	2.75	5	110	120	1
BZT52B3V0S	E1	2W2	2.94	3.0	3.06	5	120	50	1
BZT52B3V3S	F1	2W3	3.23	3.3	3.37	5	130	20	1
BZT52B3V6S	H1	2W4	3.53	3.6	3.67	5	130	10	1
BZT52B3V9S	J1	2W5	3.82	3.9	3.98	5	130	5	1
BZT52B4V3S	K1	2W6	4.21	4.3	4.39	5	130	5	1
BZT52B4V7S	M1	2W7	4.61	4.7	4.79	5	130	2	1
BZT52B5V1S	N1	2W8	5	5.1	5.2	5	130	2	1.5
BZT52B5V6S	P1	2W9	5.49	5.6	5.71	5	80	1	2.5
BZT52B6V2S	R1	2WA	6.08	6.2	6.32	5	50	1	3
BZT52B6V8S	X1	2WB	6.66	6.8	6.94	5	30	0.5	3.5
BZT52B7V5S	Y1	2WC	7.35	7.5	7.65	5	30	0.5	4
BZT52B8V2S	Z1	2WD	8.04	8.2	8.36	5	30	0.5	5
BZT52B9V1S	A2	2WE	8.92	9.1	9.28	5	30	0.5	6
BZT52B10S	B2	2WF	9.8	10	10.2	5	30	0.1	7
BZT52B11S	C2	2WG	10.78	11	11.22	5	30	0.1	8
BZT52B12S	D2	2WH	11.76	12	12.24	5	35	0.1	9
BZT52B13S	E2	2WI	12.74	13	13.26	5	35	0.1	10
BZT52B15S	F2	2WJ	14.7	15	15.3	5	40	0.1	11
BZT52B16S	H2	2WK	15.68	16	16.32	5	40	0.1	12
BZT52B18S	J2	2WL	17.64	18	18.36	5	45	0.1	13
BZT52B20S	K2	2WM	19.6	20	20.4	5	50	0.1	15
BZT52B22S	M2	2WN	21.56	22	22.44	5	55	0.1	17
BZT52B24S	N2	2WO	23.52	24	24.48	5	60	0.1	19
BZT52B27S	P2	2WP	26.46	27	27.54	2	70	0.1	21
BZT52B30S	R2	2WQ	29.4	30	30.60	2	80	0.1	23
BZT52B33S	X2	2WR	32.34	33	33.66	2	80	0.1	25
BZT52B36S	Y2	2WS	35.28	36	36.72	2	90	0.1	27
BZT52B39S	Z2	2WT	38.22	39	39.78	2	100	0.1	30
BZT52B43S	A3	2WU	42.14	43	43.86	2	130	0.1	33
BZT52B47S	3B		46.06	47	47.94	2	150	0.1	36
BZT52B51S	3C		49.98	51	52.02	2	180	0.1	39
BZT52B56S	3D		54.88	56	57.12	2	200	0.1	43
BZT52B62S	3E		60.76	62	63.24	2	215	0.1	47
BZT52B68S	3F		66.64	68	69.36	2	240	0.1	52
BZT52B75S	3H		73.5	75	76.5	2	265	0.1	56

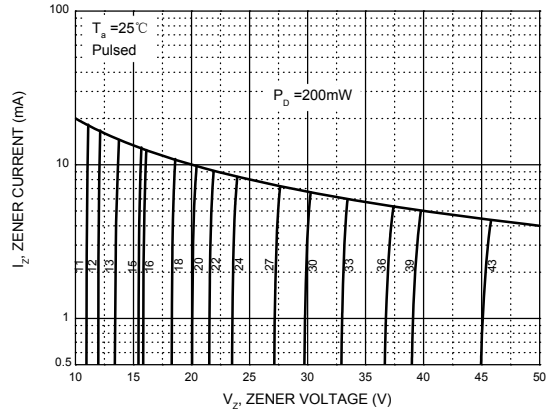
(1) V_{ZT} is tested with pulses (20 ms)

Rating and characteristic curves

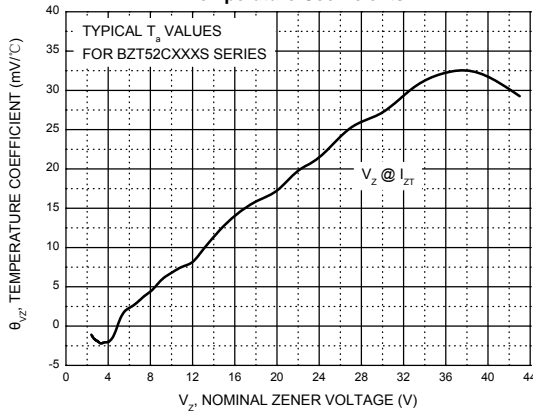
Zener Characteristics (V_z Up to 10 V)



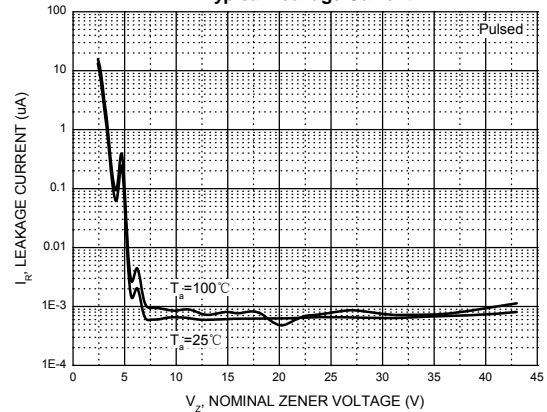
Zener Characteristics (11 V to 43 V)



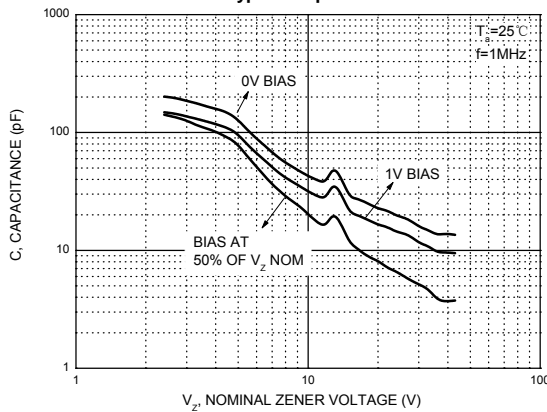
Temperature Coefficients



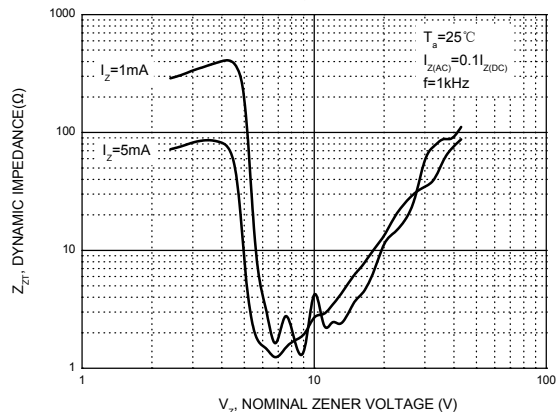
Typical Leakage Current



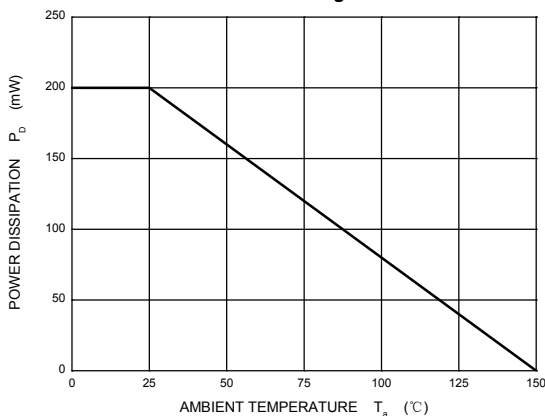
Typical Capacitance



Effect of Zener Voltage on Zener Impedance

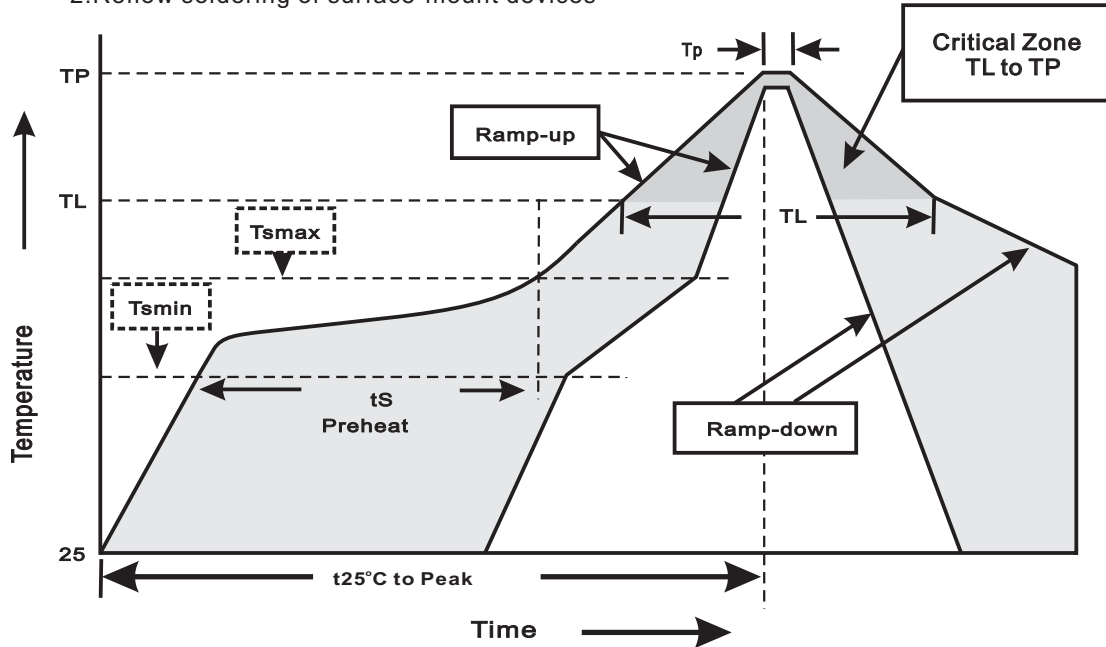


Power Derating Curve



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(T _{smin}) -Temperature Max(T _{smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smax} 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