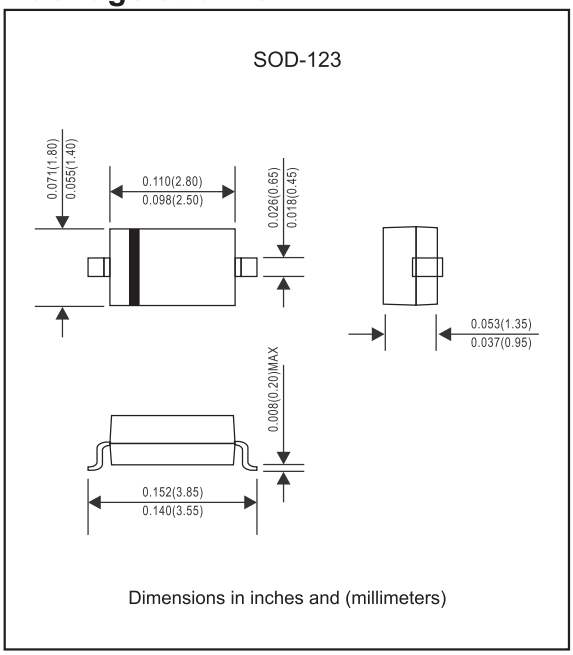
BZT52C Series

350mW Surface Mount Zener Diodes - 2.4V-51V

Features

- Silicon epitaxial planar chip structure.
- Zener breakdown voltage range, 2.4V to 51V ex.BZT52C2V4
- 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
- Weight : Approximated 0.010 gram

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			350	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 25mm^2

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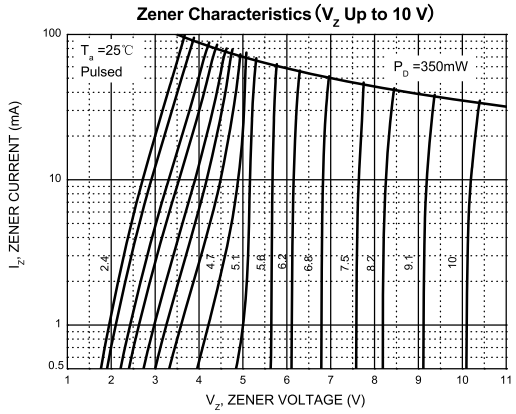
Electrical characteristics (at T_A=25°C unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current		Typical Temperature Typical Coefficent	
		V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R	V_R	@ I_{ZT} (mV/°C)	
		Min.(V)	Nom.(V)	Max.(V)	mA	(Ω)Max	(Ω)Max	mA	(uA)Max	Volts		
BZT52C2V4	WX	2.2	2.4	2.6	5	100	600	1.0	50.0	1.0	-3.5	0
BZT52C2V7	W1	2.5	2.7	2.9	5	100	600	1.0	20.0	1.0	-3.5	0
BZT52C3V0	W2	2.8	3.0	3.2	5	95	600	1.0	10.0	1.0	-3.5	0
BZT52C3V3	W3	3.1	3.3	3.5	5	95	600	1.0	5.0	1.0	-3.5	0
BZT52C3V6	W4	3.4	3.6	3.8	5	90	600	1.0	5.0	1.0	-3.5	0
BZT52C3V9	W5	3.7	3.9	4.1	5	90	600	1.0	3.0	1.0	-3.5	0
BZT52C4V3	W6	4.0	4.3	4.6	5	90	600	1.0	3.0	1.0	-3.5	0
BZT52C4V7	W7	4.4	4.7	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2
BZT52C5V1	W8	4.8	5.1	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2
BZT52C5V6	W9	5.2	5.6	6.0	5	40	400	1.0	1.0	2.0	-2.0	2.5
BZT52C6V2	WA	5.8	6.2	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7
BZT52C6V8	WB	6.4	6.8	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5
BZT52C7V5	WC	7.0	7.5	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3
BZT52C8V2	WD	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZT52C9V1	WE	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZT52C10	WF	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZT52C11	WG	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZT52C12	WH	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZT52C13	WI	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZT52C15	WJ	13.8	15	15.8	5	30	200	1.0	0.1	10.5	9.2	13.0
BZT52C16	WK	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZT52C18	WL	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZT52C20	WM	18.8	20	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZT52C22	WN	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZT52C24	WO	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZT52C27	WP	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZT52C30	WQ	28.0	30	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZT52C33	WR	31.0	33	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZT52C36	WS	34.0	36	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZT52C39	WT	37.0	39	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BZT52C43	WU	40.0	43	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0
BZT52C47	WV	44.0	47	50.0	2	100	750	1.0	0.1	35.0	10.0	12.0
BZT52C51	WW	48.0	51	54.0	2	100	750	1.0	0.1	38.0	10.0	12.0

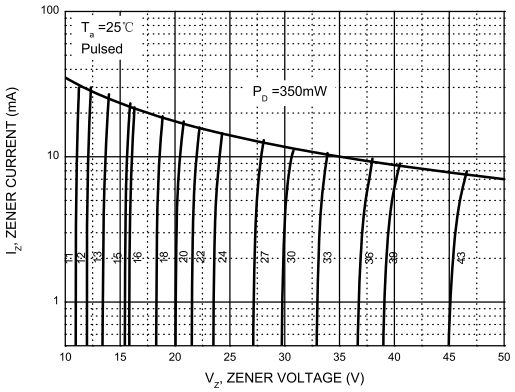
Note:
1. Tested with pulses, period = 5ms, pulse width = 300us.
2. When provided, otherwise, parts are provided with date code only, and type number identifications appears on reel only.
3. f=1KHz.

Rating and characteristic curves (BZT52C Series)

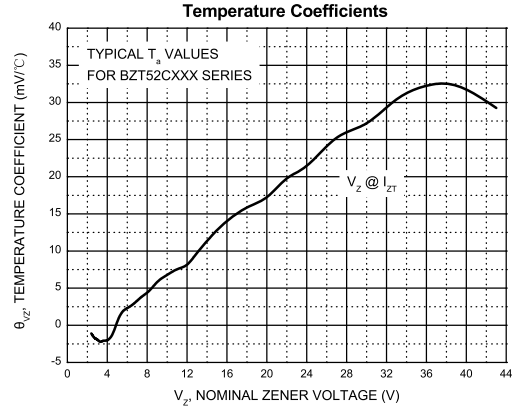
Zener Characteristics (V_Z Up to 10 V)



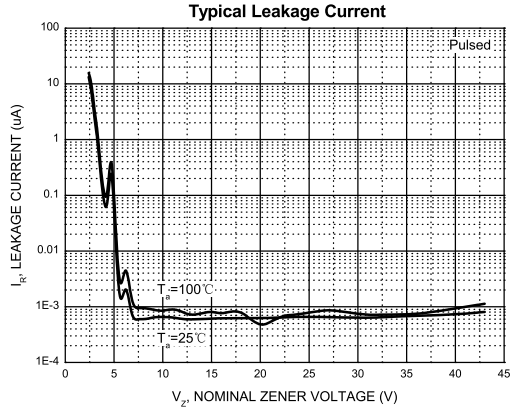
Zener Characteristics (11 V to 43 V)



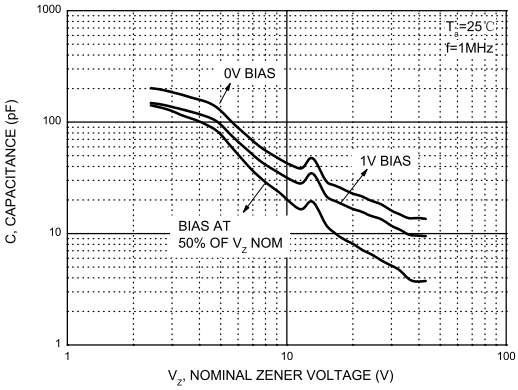
Temperature Coefficients



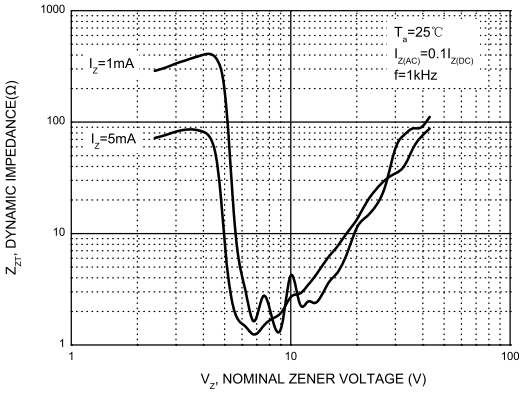
Typical Leakage Current



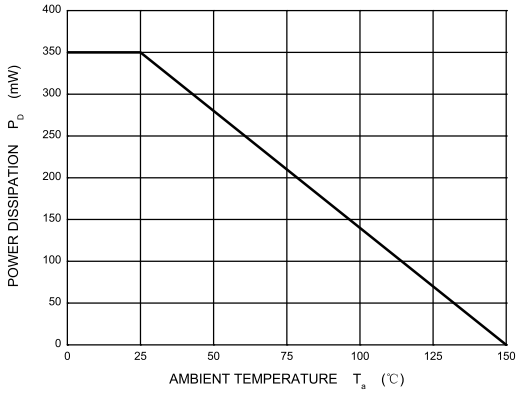
Typical Capacitance



Effect of Zener Voltage on Zener Impedance



Power Derating Curve



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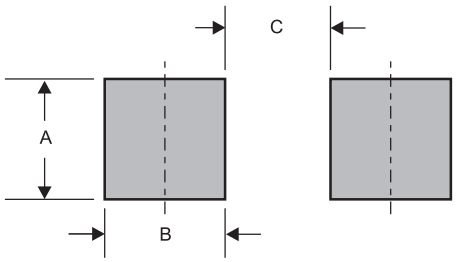
Pinning information

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)