

FEATURES

- | Planar Die Construction
- | 350mW Power Dissipation on Ceramic PCB
- | General Purpose, Medium Current
- | Ideally Suited for Automated Assembly Processes
- | Polarity: Color band denotes cathode end
- | Mounting Position: Any
- | Epoxy UL:94V-0
- | Meet AEC-Q101 Requirements



SOD-123



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	350 ¹⁾	mW
Forward Voltage@ $I_F=10\text{mA}$	V_F	0.9 ²⁾	V
Storage temperature range	T_S	-65 to +165	$^{\circ}\text{C}$

Note:

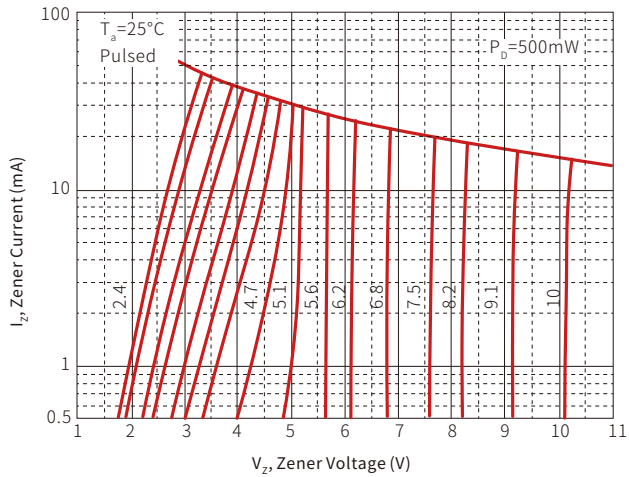
- 1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²
- 2) Short duration test pulse used to minimize self-heating effect

ELECTRICAL CHARACTERISTICS

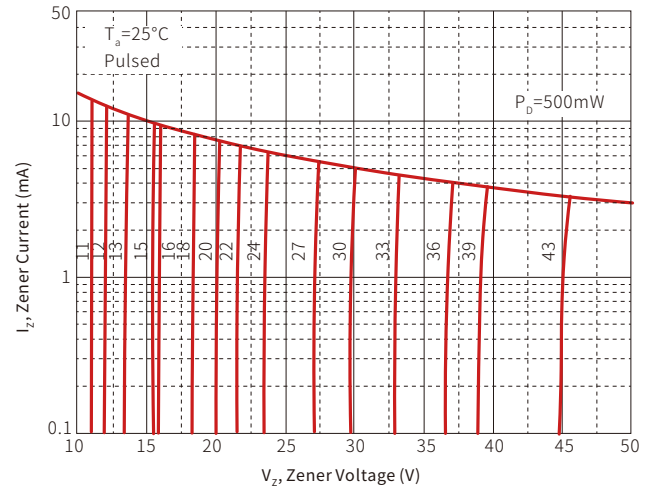
Part Number	Device Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Temperature Coefficient of Zener voltage @Izt=5mA mV/°C		Test Current I _{ZTC}
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R	V _R	Min.	Max.	mA
		Nom.(V)	Min.(V)	Max.(V)	mA	Ω	Ω	mA	uA	V			
BZT52C2V4Q	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7Q	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0Q	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3Q	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C3V6Q	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C3V9Q	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V3Q	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V7Q	W7	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C5V1Q	W8	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52C5V6Q	W9	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52C6V2Q	WA	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52C6V8Q	WB	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52C7V5Q	WC	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52C8V2Q	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1Q	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10Q	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11Q	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12Q	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13Q	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15Q	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16Q	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18Q	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20Q	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22Q	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24Q	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27Q	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30Q	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33Q	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36Q	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39Q	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52C43Q	WU	43	40.0	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0	5
BZT52C47Q	WV	47	44.0	50.0	2	100	750	1.0	0.1	35.0	10.0	12.0	5
BZT52C51Q	WW	51	48.0	54.0	2	100	750	1.0	0.1	38.0	10.0	12.0	5

CHARACTERISTIC CURVES

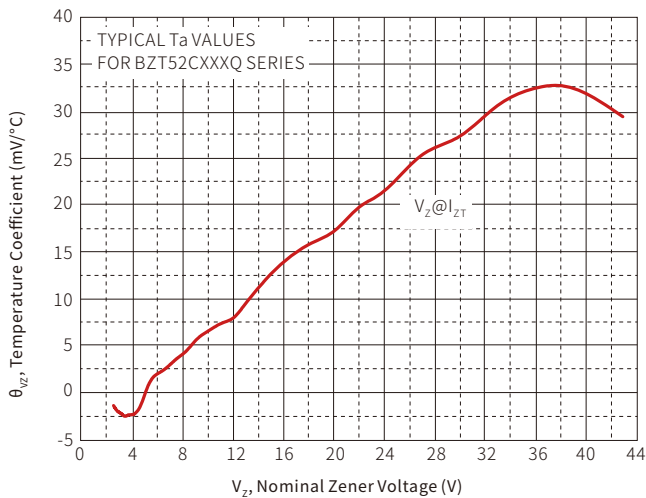
Zener Characteristics (V_Z Up to 10 V)



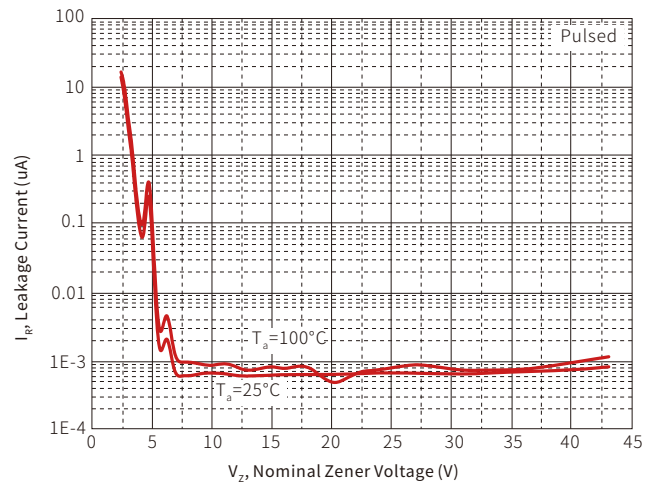
Zener Characteristics (11 V to 43 V)

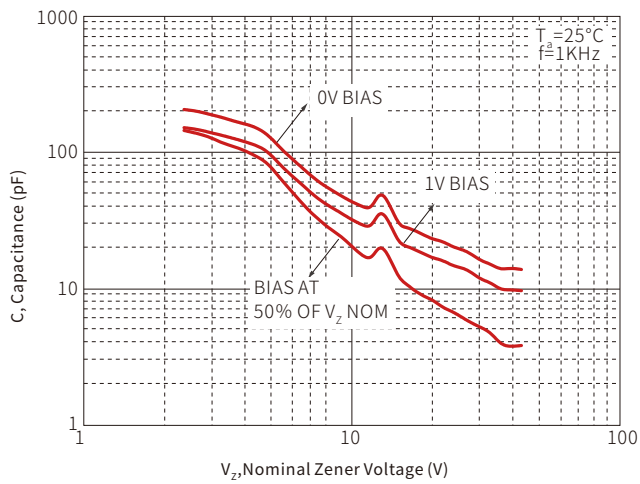
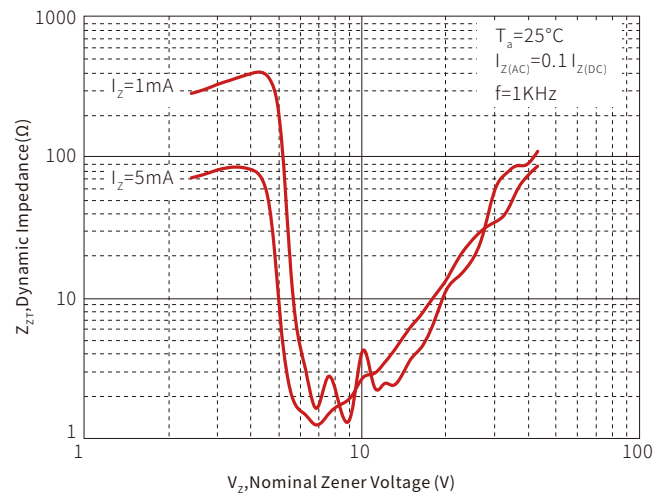
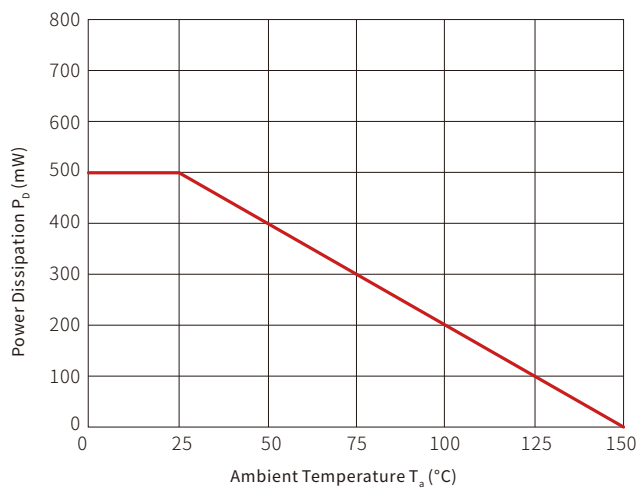


Temperature Coefficients



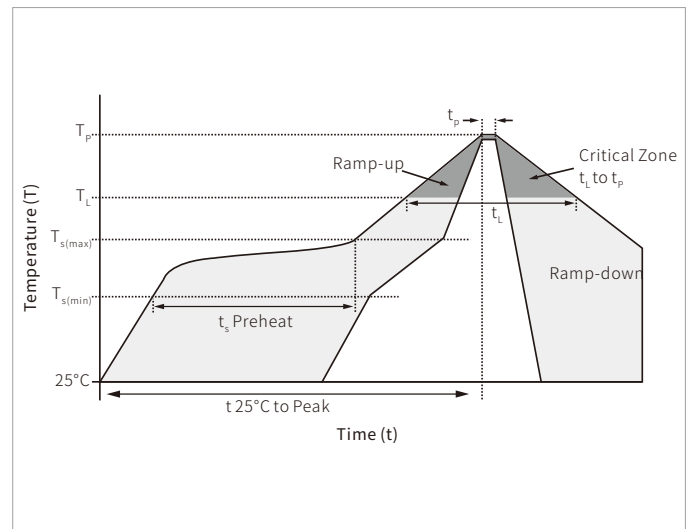
Typical Leakage Current



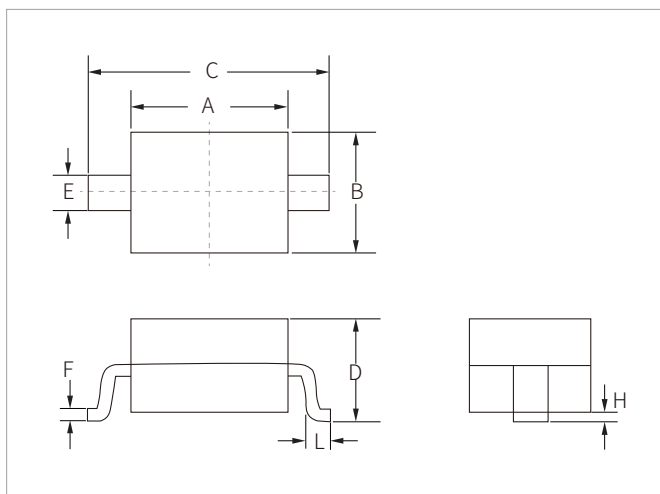
Typical Capacitance

Effect of Zener Voltage on Zener Impedance

Power Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

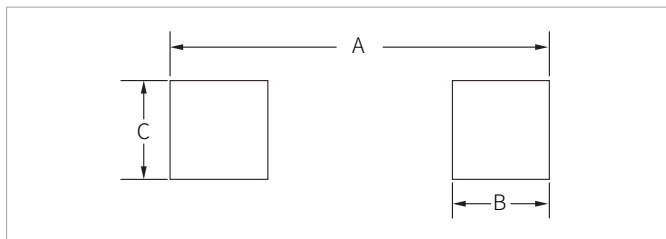


SOD-123 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	2.80	0.102	0.110
B	1.50	1.70	0.059	0.067
C	3.55	3.85	0.140	0.152
D	1.05	1.25	0.041	0.049
E	0.45	0.65	0.018	0.026
F	0.08	0.15	0.003	0.006
H	0.00	0.10	0.000	0.004
L	0.25	0.45	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.00	4.30	0.157	0.169
B	0.75	0.85	0.030	0.033
C	0.95	1.05	0.037	0.041

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BZT52CxxxQ	SOD-123	3000PCS	7"

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