

BZT52CXX Series

SOD-123 Plastic-Encapsulate Zener Diodes

ROHS

Features

- ◆ Planar Die Construction
- ◆ 350mW Power Dissipation on Ceramic PCB
- ◆ General Purpose, Medium Current
- ◆ Ideally Suited for Automated Assembly Processes
- ◆ Available in Lead Free Version

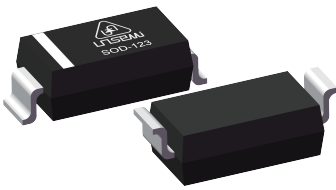
Mechanical Data

- ◆ Case: SOD-123
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Lead Finish : Lead Free



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SOD-123



Functional Diagram



Maximum Ratings(Ta=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Forward Voltage @ IF=10mA	VF	0.9	V
Power Dissipation ⁽¹⁾	PD	350	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	357	°C/W
Operating Junction Temperature Range	TJ	-55 ~ +150	°C
Storage Temperature Range	Tstg	-55 ~ +150	°C

Notes: (1) Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient @I _{ZT}		Test Current
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R	V _R	Min (mV/°C)	Max (mV/°C)	I _{ZTC}
		Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V			mA
BZT52C2V0	WY	1.8	2.0	2.15	5	150	600	1.0	100	1.0	-3.5	0	5
BZT52C2V4	WX	2.2	2.4	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7	W1	2.5	2.7	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0	W2	2.8	3.0	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3	W3	3.1	3.3	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C3V6	W4	3.4	3.6	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C3V9	W5	3.7	3.9	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V3	W6	4.0	4.3	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C4V7	W7	4.4	4.7	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C5V1	W8	4.8	5.1	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52C5V6	W9	5.2	5.6	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52C6V2	WA	5.8	6.2	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52C6V8	WB	6.4	6.8	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52C7V5	WC	7.0	7.5	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52C8V2	WD	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11	WG	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12	WH	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5

Electrical Characteristics (Ta=25°C unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient @I _{ZT}		Test Current
		V _Z @I _{ZT}			I _{ZT}	Z _{zT} @I _{ZT}	Z _{zK} @I _{ZK}	I _{ZK}	I _R	V _R	Min (mV/°C)	Max (mV/°C)	I _{ZTC}
		Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V			mA
BZT52C13	WI	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15	WJ	13.8	15	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16	WK	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18	WL	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20	WM	18.8	20	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22	WN	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24	WO	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27	WP	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30	WQ	28.0	30	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33	WR	31.0	33	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36	WS	34.0	36	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39	WT	37.0	39	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52C43	WU	40.0	43	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0	5

Electrical Characteristics Curves

Fig. 1 Zener Characteristics(V_z Up to 10V)

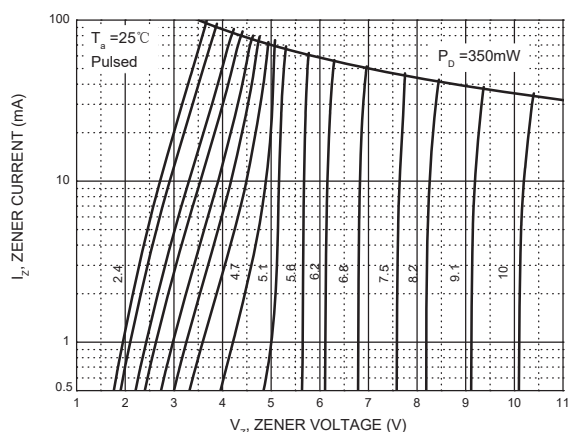


Fig. 2 Zener Characteristics(V_z 11V to 43V)

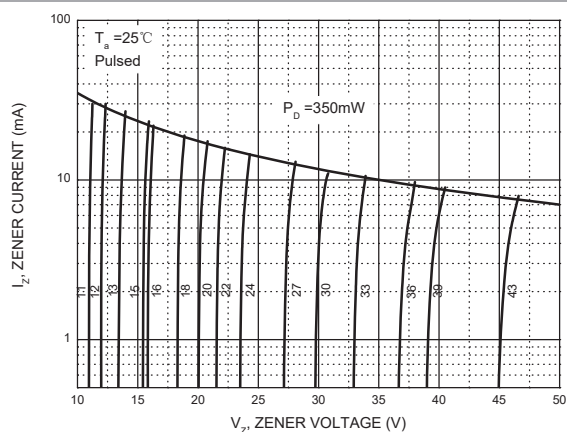


Fig. 3 Temperature Coefficients

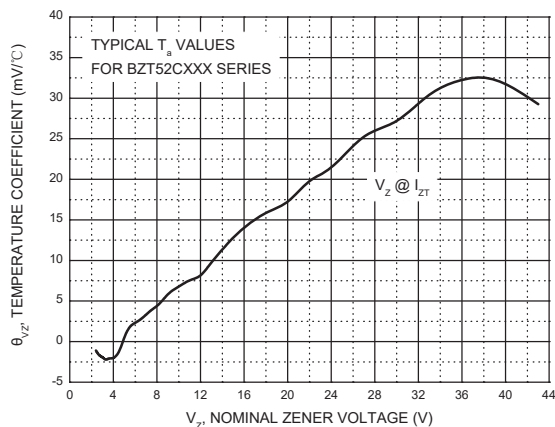


Fig. 4 Typical Leakage Current

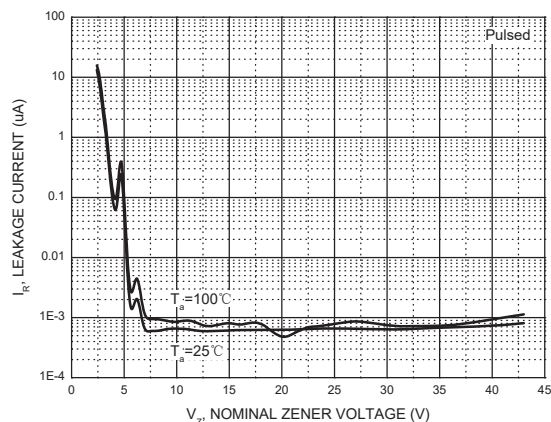


Fig. 5 Typical Capacitance

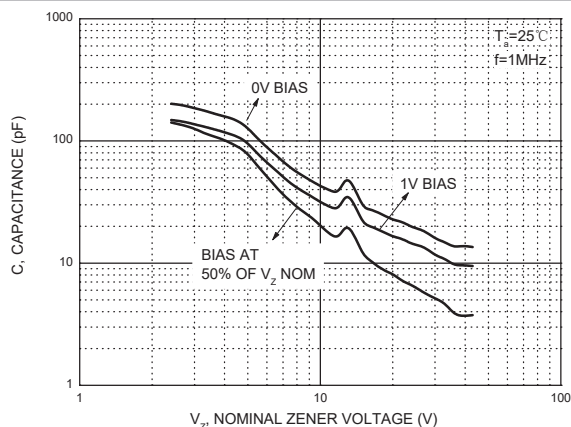
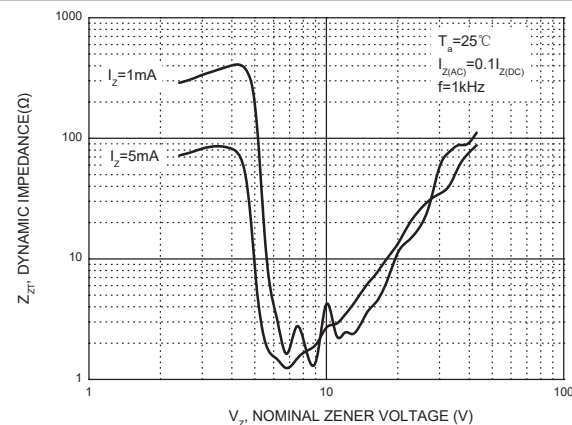
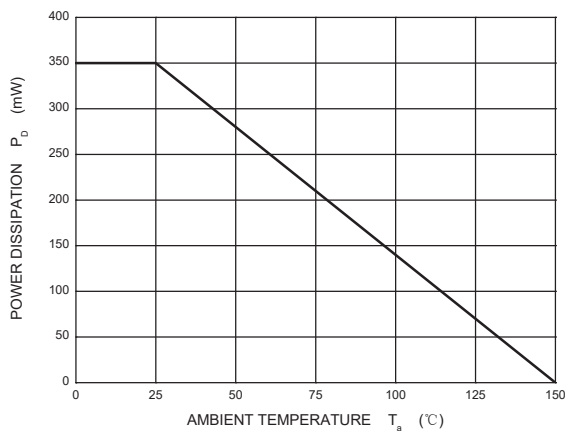


Fig. 6 Effect of Zener Voltage on Zener Impedance



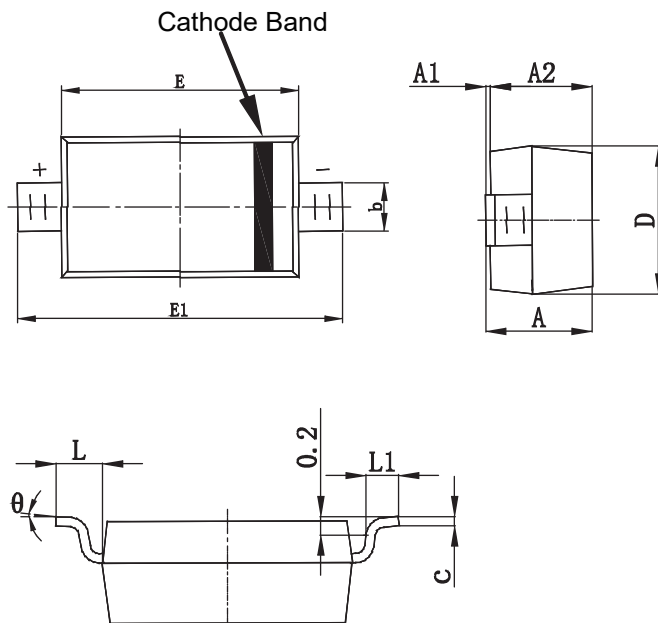
Electrical Characteristics Curves

Fig. 7 Power Derating Curve



SOD-123 Package Outline & Dimensions

SOD-123



Dimensions	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.041	0.049	1.050	1.250
A1	0	0.004	0	0.100
A2	0.041	0.045	1.050	1.150
b	0.018	0.026	0.450	0.650
c	0.003	0.006	0.080	0.150
D	0.059	0.067	1.500	1.700
E	0.102	0.110	2.600	2.800
E1	0.140	0.152	3.550	3.850
L	0.020REF		0.500 REF	
L1	0.010	0.018	0.250	0.450
θ	0°	8°	0°	8°

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