BZT52BXX Series

ROHS

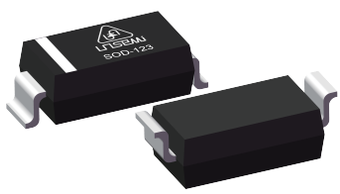
SOD-123 Plastic-Encapsulate Zener Diodes

www.unsemi.com.tw

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

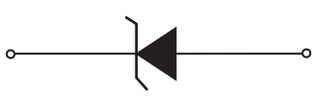
SOD-123



Mechanical Data

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

Functional Diagram



Maximum Ratings(Ta=25℃ 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	$R_{\theta JA}$	357	℃/W
Operating Junction Temperature Range	TJ	-55 ~ +150	℃
Storage Temperature Range	Tstg	-55 ~ +150	℃

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

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficent @IZT		Test Current
		Vz@IZT			IZT	ZZT@IZT	ZZK@IZK	IZK	IR	VR	Min (mV/°C)	Max (mV/°C)	IZTC
		Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V			mA
BZT52B2V4	2WX	2.35	2.4	2.45	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52B2V7	2W1	2.65	2.7	2.75	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52B3V0	2W2	2.94	3.0	3.06	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52B3V3	2W3	3.23	3.3	3.37	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52B3V6	2W4	3.53	3.6	3.67	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52B3V9	2W5	3.82	3.9	3.98	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V3	2W6	4.21	4.3	4.39	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V7	2W7	4.61	4.7	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52B5V1	2W8	5.00	5.1	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52B5V6	2W9	5.49	5.6	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52B6V2	2WA	6.08	6.2	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52B6V8	2WB	6.66	6.8	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52B7V5	2WC	7.35	7.5	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52B8V2	2WD	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52B9V1	2WE	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Parameter	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficent @IZT		Test Current
		VZ@IZT			IZT	ZZT@IZT	ZZK@IZK	IZK	IR	VR	Min (mV/°C)	Max (mV/°C)	IZTC
		Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V			mA
BZT52B10	2WF	9.80	10	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52B11	2WG	10.78	11	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52B12	2WH	11.76	12	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52B13	2WI	12.74	13	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52B15	2WJ	14.70	15	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52B16	2WK	15.68	16	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52B18	2WL	17.64	18	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52B20	2WM	19.60	20	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52B22	2WN	21.56	22	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52B24	2WO	23.52	24	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52B27	2WP	26.46	27	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52B30	2WQ	29.40	30	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52B33	2WR	32.34	33	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52B36	2WS	35.28	36	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52B39	2WT	38.22	39	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52B43	2WU	41.16	43	43.84	2	130	350	0.5	0.1	29.4	36.4	45.2	2

Electrical Characteristics Curves

Fig. 1 Zener Characteristics(Vz 5.1V to 20V)

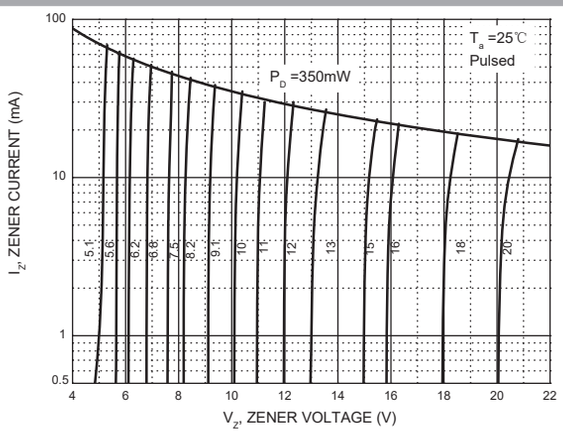


Fig. 2 Temperature Coefficients

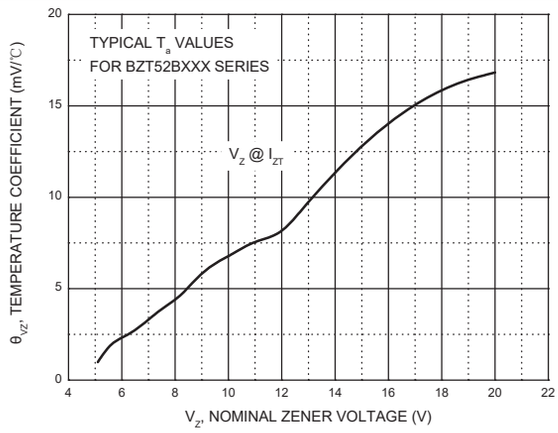


Fig. 3 Typical Leakage Current

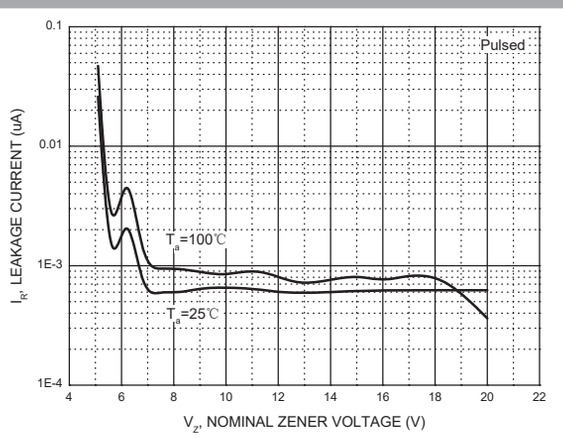


Fig. 4 Typical Capacitance

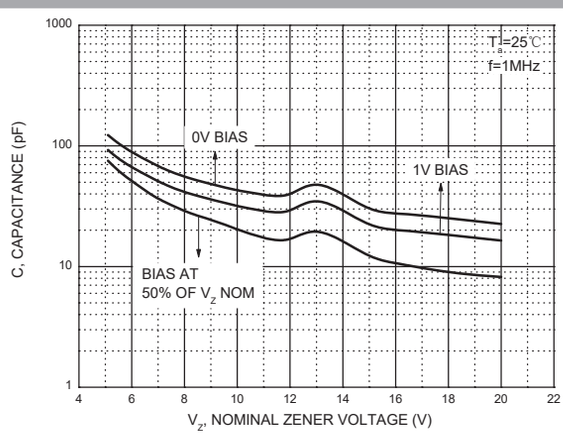


Fig. 5 Effect of Zener Voltage on Zener Impedance

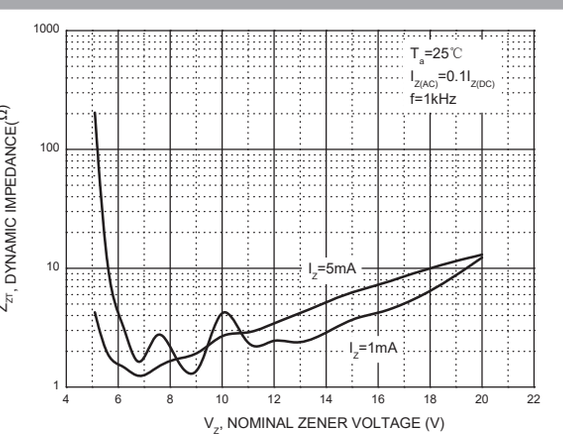
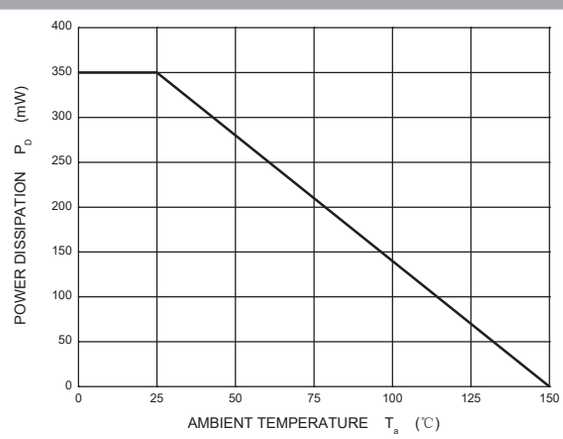
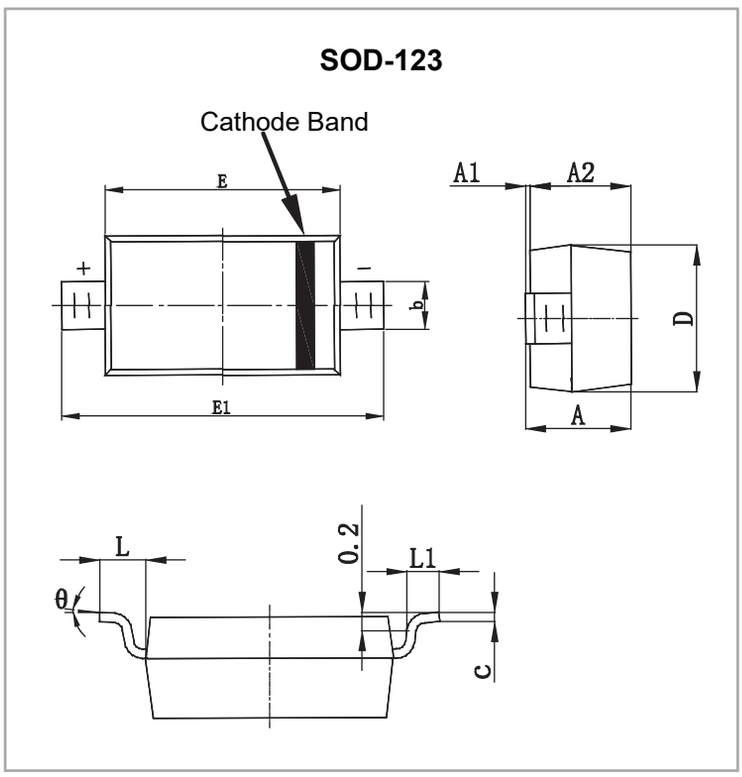


Fig. 6 Power Derating Curve



SOD-123 Package Outline & Dimensions



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°

優恩半導體 UNSEMI

ROHS

Disclaimer

UNSEMI RESERVES THE RIGHT TO MAKE CHANGE ON OUR PRODUTS , PRODUCTS SPECIFICATION AND DATA WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

UN SEMICONDUCTOR LIMITED its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “UNSEMI”)does not give any representations or warranties for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

In no event shall UNSEMI be liable for any indirect, incidental, punitive, special or consequential damages (including any and all implied warranties, warranties of fitness for particular purpose, non-infringement and merchantability.) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Statements regarding the suitability of products for certain types of applications are based on UNSEMI knowledge of typical requirements that are often placed on UNSEMI products in generic applications. Such statements are not binding, statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify UNSEMI's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Unless otherwise agreed in writing, UNSEMI product is not designed, authorized or warranted to be suitable for use in medical life-saving, or life-sustaining application , nor in applications where failure or malfunction of a UNSEMI product can reasonably be expected to result in personal injury, death or severe property or environmental damage. UNSEMI and its suppliers accept no liability for inclusion or use of UNSEMI products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

All referenced brands, product names, service names and trademarks are the property of their respective owners.