

410mW 2% Zener Diodes

FEATURES

- Wide zener voltage range selection: 2.4V to 75V
- V_Z Tolerance Selection of $\pm 2\%$
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOD-123
- Molding compound: UL flammability classification rating 94V-0
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 10.54mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	2.4-75	V
Test current I_{ZT}	5-2	mA
P_{tot}	410	mW
V_F at $I_F=10mA$	0.9	V
T_J Max.	150	$^{\circ}C$
Package	SOD-123	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}C$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Forward voltage @ $I_F=10mA$	V_F	0.9	V
Total power dissipation	P_{tot}	410	mW
Junction temperature range	T_J	-55 to +150	$^{\circ}C$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}C$

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	357	$^{\circ}C/W$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PART NUMBER	MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT		TYPICAL TEMPERATURE COEFFICIENT		TEST CURRENT
		$V_Z @ I_{ZT}$			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	$I_R @ V_R$		@ I_{ZTC}		I_{ZTC}
		V			mA	Ω	Ω	mA	μA	V	mV/ $^\circ\text{C}$		mA
		Min.	Nom.	Max.		Max.	Max.		Max.		Min.	Max.	
BZT52B2V4-G	2WX	2.35	2.4	2.45	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52B2V7-G	2W1	2.65	2.7	2.75	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52B3V0-G	2W2	2.94	3.0	3.06	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52B3V3-G	2W3	3.23	3.3	3.37	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52B3V6-G	2W4	3.53	3.6	3.67	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52B3V9-G	2W5	3.82	3.9	3.98	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V3-G	2W6	4.21	4.3	4.39	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52B4V7-G	2W7	4.61	4.7	4.79	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52B5V1-G	2W8	5.00	5.1	5.20	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52B5V6-G	2W9	5.49	5.6	5.71	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52B6V2-G	2WA	6.08	6.2	6.32	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52B6V8-G	2WB	6.66	6.8	6.94	5	15	80	1.0	2	4.0	1.2	4.5	5
BZT52B7V5-G	2WC	7.35	7.5	7.65	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52B8V2-G	2WD	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52B9V1-G	2WE	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52B10-G	2WF	9.80	10	10.20	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52B11-G	2WG	10.78	11	11.22	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52B12-G	2WH	11.76	12	12.24	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52B13-G	2WI	12.74	13	13.26	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52B15-G	2WJ	14.70	15	15.30	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52B16-G	2WK	15.68	16	16.32	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52B18-G	2WL	17.64	18	18.36	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52B20-G	2WM	19.60	20	20.40	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52B22-G	2WN	21.56	22	22.44	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52B24-G	2WO	23.52	24	24.48	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52B27-G	2WP	26.46	27	27.54	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52B30-G	2WQ	29.40	30	30.60	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52B33-G	2WR	32.34	33	33.66	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52B36-G	2WS	35.28	36	36.72	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52B39-G	2WT	38.22	39	39.78	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52B43-G	2WU	42.14	43	43.86	2	130	350	0.5	0.1	29.4	36.4	45.2	2
BZT52B47-G	2WV	46.06	47	47.94	2	100	750	1.0	0.1	35.0	10.0	12.0	5
BZT52B51-G	X1.	49.98	51	52.02	2	100	750	1.0	0.045	35.7	10.0	12.0	5
BZT52B56-G	X2.	54.88	56	57.12	2	200	400	0.5	0.045	39.2	10.0	12.0	5
BZT52B62-G	X3.	60.76	62	63.24	2	215	423	0.5	0.045	43.4	10.0	12.0	5

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)													
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		$V_Z @ I_{ZT}$			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	$I_R @ V_R$		@ I_{ZTC}		I_{ZTC}
		V			mA	Ω	Ω	mA	μA	V	mV/ $^\circ\text{C}$		mA
		Min.	Nom.	Max.		Max.	Max.		Max.		Min.	Max.	
BZT52B68-G	X4.	66.64	68	69.36	2	240	447	0.5	0.045	47.6	10.0	12.0	5
BZT52B75-G	X5.	73.5	75	76.5	2	255	470	0.5	0.045	52.5	10.0	12.0	5

ORDERING INFORMATION		
ORDERING CODE (Note 1)	PACKAGE	PACKING
BZT52Bxxx-G RHG	SOD-123	3K / 7" Reel

Note:

- "xxx" defines voltage from 2.4V (BZT52B2V4-G) to 75V (BZT52B75-G)

CHARACTERISTICS CURVES

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

Fig.1 Power Dissipation Curve

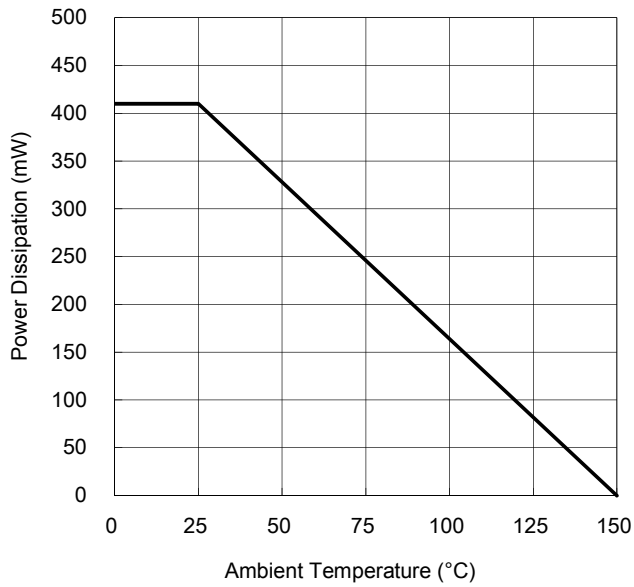


Fig.2 Zener Breakdown Characteristics

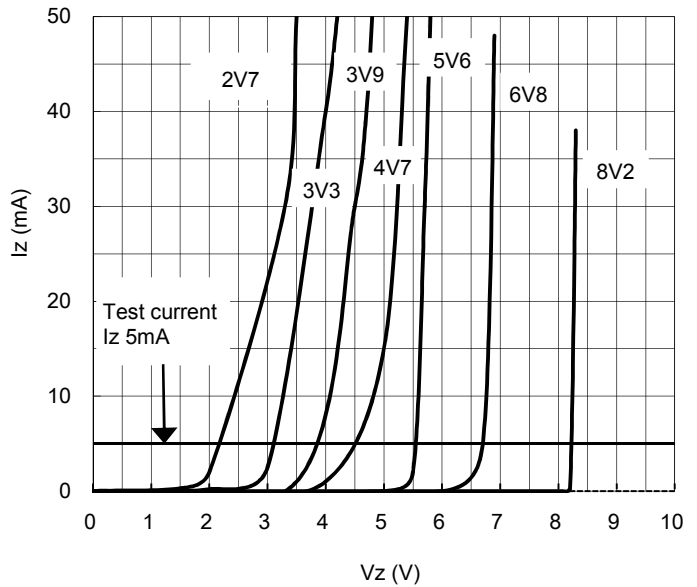
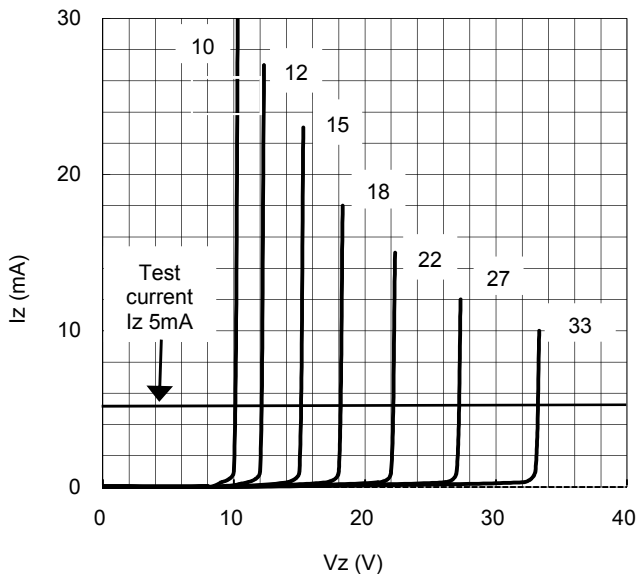
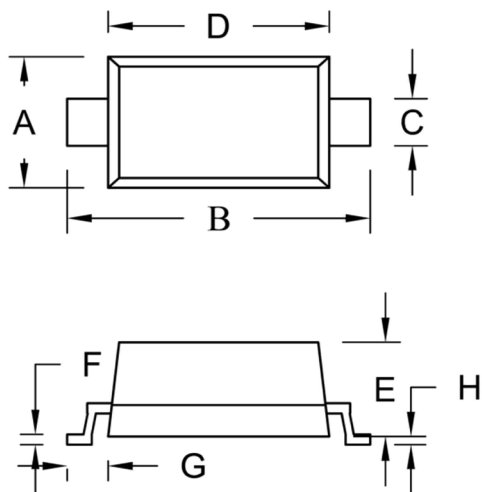


Fig.3 Zener Breakdown Characteristics

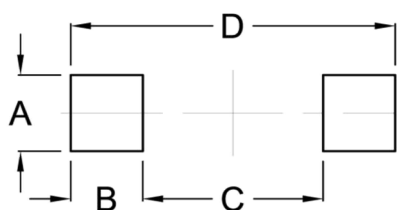


PACKAGE OUTLINE DIMENSION

SOD-123



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.40	1.80	0.055	0.071
B	3.55	3.85	0.140	0.152
C	0.45	0.70	0.018	0.028
D	2.55	2.85	0.100	0.112
E	0.95	1.35	0.037	0.053
F	0.05	0.15	0.002	0.006
G	0.50 (REF)		0.020 (REF)	
H	-	0.10	-	0.004

SUGGEST PAD LAYOUT


Symbol	Unit (mm)	Unit (inch)
A	0.95	0.037
B	0.90	0.035
C	2.25	0.089
D	4.05	0.159

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