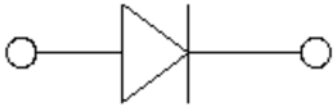
Zener Diodes



Features

- Moisture sensitivity level 1
- Zener voltage 2.4V~75V

Application

- Linear voltage regulator
- DC regulator
- Small-signal surge protection

Mechanical data

- **Package**: SOD-123
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Parameter	Symbol	Unit	Value
Forward voltage @ I_F=10mA	V_F	V	0.9
Power dissipation	P_D	mW	500
Maximum regulator current	I_{ZM}	mA	P_D/ V_Z
Junction temperature	T_J	℃	-55 to +150
Storage temperature	T_{STG}	℃	-55 to +150

BZT52C2V4 THRU BZT52C75

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Type number	Device marking	V_Z @ I_{ZT} (V)			Z_{ZT}(Ω)		Z_{ZK}(Ω)		I_R(μA) @V_R		Typical temperature coefficient @ I_{ZTC} mV/℃		Test Current I_{ZTC}
		min.	typ.	max.	I_{ZT}(mA)	max.	I_{ZK}(mA)	max.	max	V_R(V)	Min	Max	mA
BZT52C2V4	WX	2.28	2.4	2.52	5	100	1.0	600	50	1.0	-3.5	0	5
BZT52C2V7	W1	2.57	2.7	2.84	5	100	1.0	600	20	1.0	-3.5	0	5
BZT52C3V0	W2	2.85	3.0	3.15	5	95	1.0	600	10	1.0	-3.5	0	5
BZT52C3V3	W3	3.14	3.3	3.47	5	95	1.0	600	5	1.0	-3.5	0	5
BZT52C3V6	W4	3.42	3.6	3.78	5	90	1.0	600	5	1.0	-3.5	0	5
BZT52C3V9	W5	3.71	3.9	4.1	5	90	1.0	600	3	1.0	-3.5	0	5
BZT52C4V3	W6	4.09	4.3	4.52	5	90	1.0	600	3	1.0	-3.5	0	5
BZT52C4V7	W7	4.47	4.7	4.94	5	80	1.0	500	3	2.0	-3.5	0	5
BZT52C5V1	W8	4.85	5.1	5.36	5	60	1.0	480	2	2.0	-2.7	1.2	5
BZT52C5V6	W9	5.32	5.6	5.88	5	40	1.0	400	1	2.0	-2	2.5	5
BZT52C6V2	WA	5.8	6.2	6.6	5	10	1.0	150	3	4.0	0.4	3.7	5
BZT52C6V8	WB	6.4	6.8	7.2	5	15	1.0	80	2	4.0	1.2	4.5	5
BZT52C7V5	WC	7.0	7.5	7.9	5	15	1.0	80	1	5.0	2.5	5.3	5
BZT52C8V2	WD	7.7	8.2	8.7	5	15	1.0	80	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE	8.5	9.1	9.6	5	15	1.0	100	0.5	6.0	3.8	7.0	5
BZT52C10	WF	9.4	10	10.6	5	20	1.0	150	0.2	7.0	4.5	8.0	5
BZT52C11	WG	10.4	11	11.6	5	20	1.0	150	0.1	8.0	5.4	9.0	5
BZT52C12	WH	11.4	12	12.7	5	25	1.0	150	0.1	8.0	6.0	10.0	5
BZT52C13	WI	12.4	13	14.1	5	30	1.0	170	0.1	8.0	7.0	11.0	5
BZT52C15	WJ	14.25	15	15.6	5	30	1.0	200	0.1	10.5	9.2	13.0	5
BZT52C16	WK	15.3	16	17.1	5	40	1.0	200	0.1	11.2	10.4	14.0	5
BZT52C18	WL	16.8	18	19.1	5	45	1.0	225	0.1	12.6	12.4	16.0	5
BZT52C20	WM	18.8	20	21.2	5	55	1.0	225	0.1	14.0	14.4	18.0	5
BZT52C22	WN	20.8	22	23.3	5	55	1.0	250	0.1	15.4	16.4	20.0	5
BZT52C24	WO	22.8	24	25.6	5	70	1.0	250	0.1	16.8	18.4	22.0	5
BZT52C27	WP	25.1	27	28.9	2	80	0.5	300	0.1	18.9	21.4	25.3	2

BZT52C2V4 THRU BZT52C75

Type number	Device marking	V_Z @ I_{ZT} (V)			Z_{ZT}(Ω)		Z_{ZK}(Ω)		I_R(μA) @V_R		Typical temperature coefficient @ I_{ZTC} mV/℃		Test Current I_{ZTC}
		min.	typ.	max.	I_{ZT}(mA)	max.	I_{ZK}(mA)	max.	max	V_R(V)	Min	Max	mA
BZT52C30	WQ	28	30	32	2	80	0.5	300	0.1	21.0	24.4	29.4	2
BZT52C33	WR	31	33	35	2	80	0.5	325	0.1	23.1	27.4	33.4	2
BZT52C36	WS	34	36	38	2	90	0.5	350	0.1	25.2	30.4	37.4	2
BZT52C39	WT	37	39	41	2	130	0.5	350	0.1	27.3	33.4	41.2	2
BZT52C43	WU	40	43	46	5	100	1.0	750	0.1	32	37.6	46.6	2
BZT52C47	WV	44	47	50	5	100	1.0	750	0.1	35	42.0	51.8	2
BZT52C51	WW	48	51	54	2	180	0.5	400	0.05	35.7	46.6	57.2	2
BZT52C56	X1	53	56	59	2	200	1	1000	0.1	42	52.2	63.8	2
BZT52C62	5X2	58	62	66	2	215	0.5	450	0.05	43.4	58.8	71.6	2
BZT52C68	5X3	64	68	72	2	240	0.5	475	0.05	47.6	65.6	79.8	2
BZT52C75	5X4	70	75	79	2	255	0.5	500	0.05	52.5	73.4	88.6	2

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	250
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	200

Note:

（1）Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 8mm*9mm copper pad areas

■Characteristics

Fig 1：P_D-Ta Curve

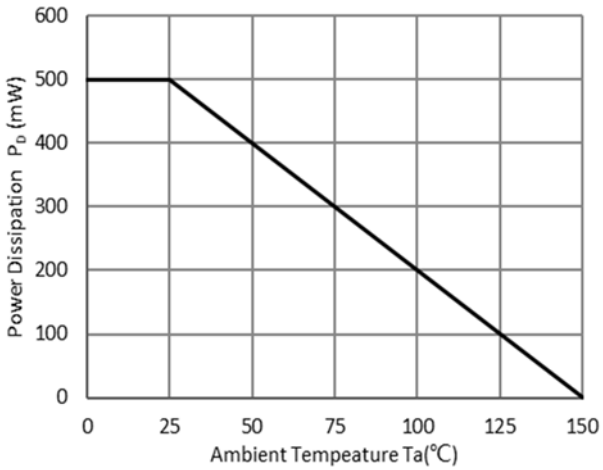


Fig 2：Zener Breakdown Characteristics

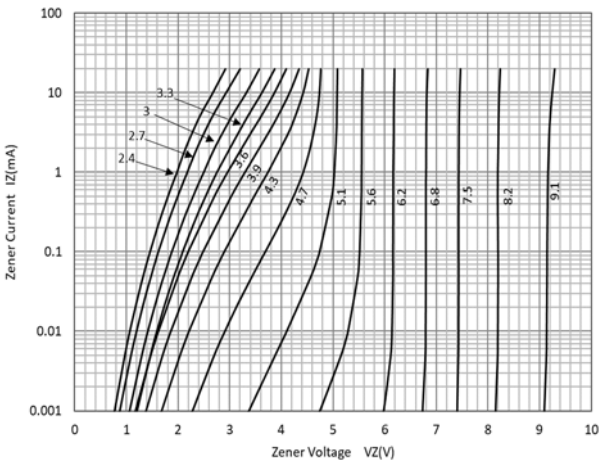


Fig 3：Zener Breakdown Characteristics

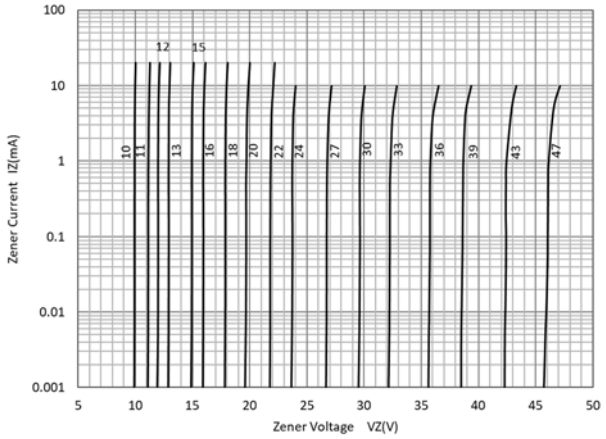


Fig 4：Zener Breakdown Characteristics

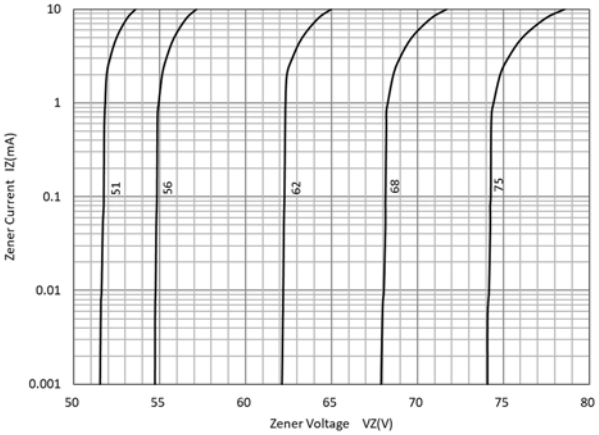


Fig 5：Typical Temperature Coeffient

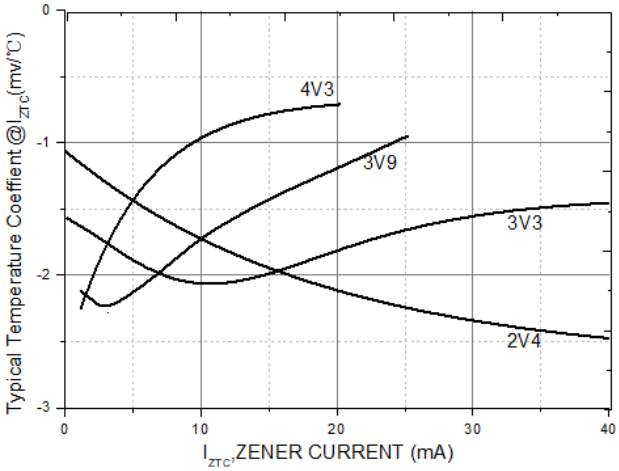
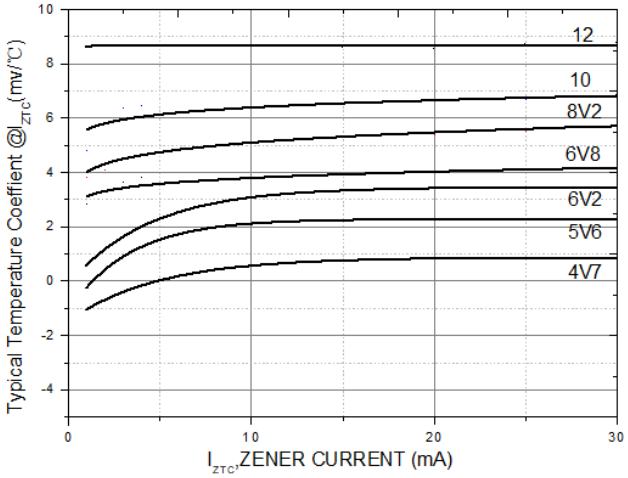


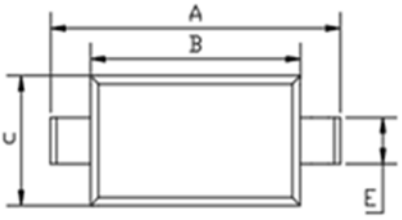
Fig 6：Typical Temperature Coeffient



■Ordering Information

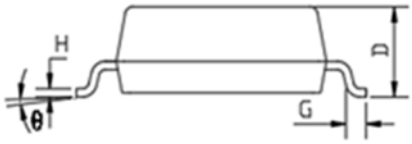
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BZT52C2V4 THRU BZT52C75	F2	Approximate 0.011	3000	30000	120000	7” reel
BZT52C2V4 THRU BZT52C75	F3	Approximate 0.011	10000	/	210000	13” reel

■ Outline Dimensions



TOP VIEW

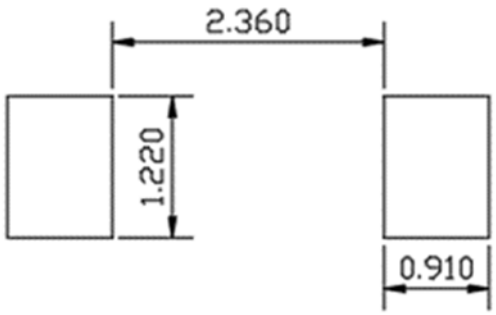
SIDE VIEW



SIDE VIEW

DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	0.140	0.152	3.550	3.850
B	0.100	0.112	2.550	2.850
C	0.055	0.071	1.400	1.800
D	0.037	0.053	0.950	1.350
E	0.020	0.028	0.510	0.710
G	0.006	0.018	0.150	0.450
H	0.003	0.010	0.080	0.250
J	0.000	0.006	0.000	0.150
θ	0	8°	0	8°

■ Suggested Pad Layout



UNIT: mm

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