

Surface Mount Zener Diodes

**FEATURES**

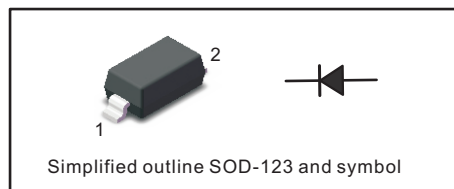
- Total power dissipation: Max. 500mW.
- Wide zener reverse voltage range 2.0 V to 51V.
- Small plastic package suitable for surface mounted design.

**MECHANICAL DATA**

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 16mg 0.00056oz

**PINNING**

PIN	DESCRIPTION
1	Cathode
2	Anode

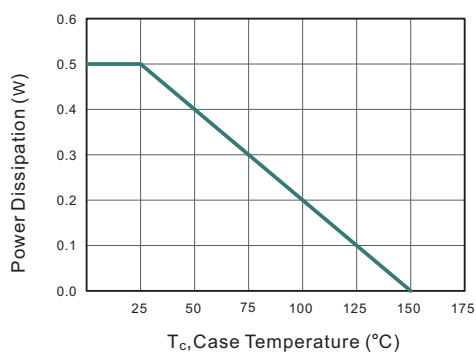


**Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )**

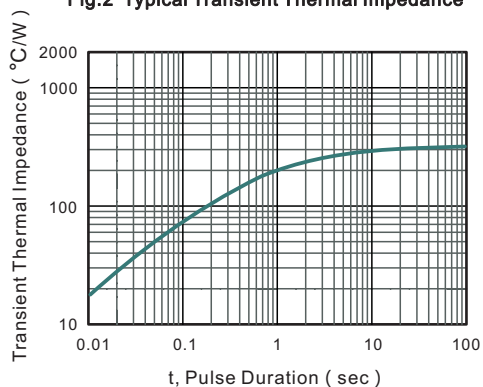
Parameter	Symbol	Value	Unit
Power Dissipation	$P_D$	500	mW
Forward Voltage at $I_F = 10$ mA	$V_F$	0.9	V
Typical thermal resistance junction to ambient <sup>(1)</sup>	$R_{\theta JA}$	305	°C/W
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150	°C

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 7.6mm X 9.4mm X 0.87mm copper areas pads.

**Fig.1 Maximum Continuous Power Derating**



**Fig.2 Typical Transient Thermal Impedance**





Characteristics at Ta = 25°C

Type	Marking	Zener Voltage Range (2)				Maximum Zener (3) Impedance				Reverse Current (2)	
		V <sub>ZT</sub> ( at I <sub>ZT</sub> )			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	@V <sub>R</sub>
		Min ( V )	Nom ( V )	Max ( V )							
BZT52C2V0	WY	1.91	2.0	2.09	5	100	5	600	1	150	1.0
BZT52C2V4	WX	2.2	2.4	2.6	5	100	5	600	1	50	1.0
BZT52C2V7	W1	2.5	2.7	2.9	5	100	5	600	1	20	1.0
BZT52C3V0	W2	2.8	3.0	3.2	5	95	5	600	1	10	1.0
BZT52C3V3	W3	3.1	3.3	3.5	5	95	5	600	1	5.0	1.0
BZT52C3V6	W4	3.4	3.6	3.8	5	90	5	600	1	5.0	1.0
BZT52C3V9	W5	3.7	3.9	4.1	5	90	5	600	1	3.0	1.0
BZT52C4V3	W6	4	4.3	4.6	5	90	5	600	1	3.0	1.0
BZT52C4V7	W7	4.4	4.7	5	5	80	5	500	1	3.0	2.0
BZT52C5V1	W8	4.8	5.1	5.4	5	60	5	480	1	2.0	2.0
BZT52C5V6	W9	5.2	5.6	6	5	40	5	400	1	1.0	2.0
BZT52C6V2	WA	5.8	6.2	6.6	5	10	5	150	1	3.0	4.0
BZT52C6V8	WB	6.4	6.8	7.2	5	15	5	80	1	2.0	4.0
BZT52C7V5	WC	7	7.5	7.9	5	15	5	80	1	1.0	5.0
BZT52C8V2	WD	7.7	8.2	8.7	5	15	5	80	1	0.7	5.0
BZT52C9V1	WE	8.5	9.1	9.6	5	15	5	100	1	0.5	6.0
BZT52C10	WF	9.4	10	10.6	5	20	5	150	1	0.2	7.0
BZT52C11	WG	10.4	11	11.6	5	20	5	150	1	0.1	8.0
BZT52C12	WH	11.4	12	12.7	5	25	5	150	1	0.1	8.0
BZT52C13	WI	12.4	13	14.1	5	30	5	170	1	0.1	8.0
BZT52C15	WJ	13.8	15	15.6	5	30	5	200	1	0.1	10.5
BZT52C16	WK	15.3	16	17.1	5	40	5	200	1	0.1	11.2
BZT52C18	WL	16.8	18	19.1	5	45	5	225	1	0.1	12.6
BZT52C20	WM	18.8	20	21.2	5	55	5	225	1	0.1	14.0
BZT52C22	WN	20.8	22	23.3	5	55	5	250	1	0.1	15.4
BZT52C24	WO	22.8	24	25.6	5	70	5	250	1	0.1	16.8
BZT52C27	WP	25.1	27	28.9	2	80	2	300	0.5	0.1	18.9
BZT52C30	WQ	28	30	32	2	80	2	300	0.5	0.1	21.0
BZT52C33	WR	31	33	35	2	80	2	325	0.5	0.1	23.1
BZT52C36	WS	34	36	38	2	90	2	350	0.5	0.1	25.2
BZT52C39	WT	37	39	41	2	130	2	350	0.5	0.1	27.3
BZT52C43	WU	40	43	46	2.5	130	2	500	1	2	33
BZT52C47	WV	44	47	50	2.5	150	2	500	1	2	36
BZT52C51	WW	48	51	54	2.5	180	2	500	1	1	37

NOTES: ( 1 ) f=1KHz

( 2 ) Short duration test pulse used to minimize self-heating effect.

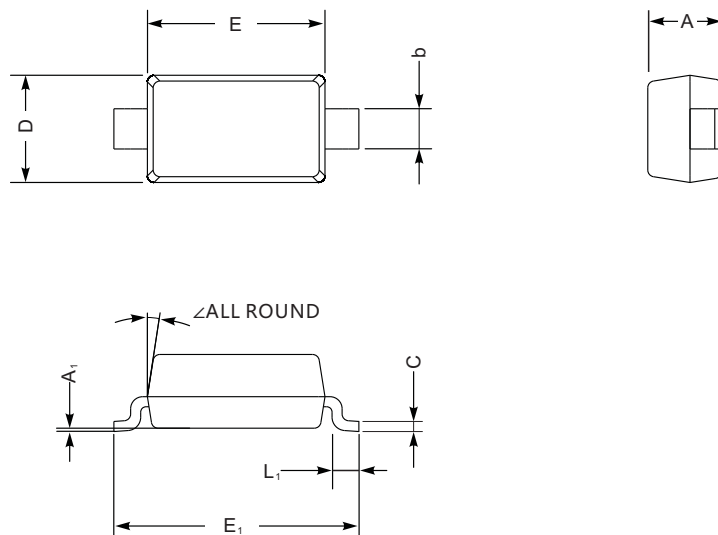
( 3 ) V<sub>ZT</sub> is tested with pulses 20ms.



**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SOD-123



SOD-123 mechanical data

UNIT		A	C	D	E	E <sub>1</sub>	L <sub>1</sub>	b	A <sub>1</sub>	∠
mm	max	1.3	0.22	1.8	2.8	3.9	0.45	0.7	0.2	9°
	min	0.9	0.09	1.5	2.5	3.6	0.25	0.5	—	
mil	max	51	8.7	71	110	154	18	28	8	
	min	35	3.5	59	98	142	10	20	—	

**The recommended mounting pad size**

