

BZT52C2V4-BZT52C51

Features

Low Zener Impedance

Power Dissipation of 500mW

High Stability and High Reliability

Mechanical Data

Cases :SOD-123 Small Outline Plastic Package

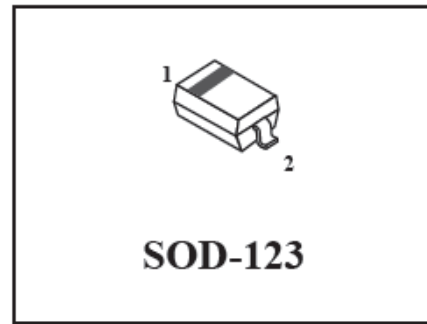
Polarity: Color band denotes cathode end

Epoxy UL: 94V-0

Mounting Position: Any

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)



Equivalent Circuit Diagram



Parameters	Symbol	Value	Unit
Power Dissipation	P_d	500 1)	mW
Forward Voltage @ $I_F=10mA$	V_f	0.9 2)	V
Storage temperature range	T_s	-65 to +150	°C

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

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

3) $f=1KHz$

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

Device	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature Coefficient @ $I_{ZTC}=mV/°C$		Test Current I_{ZTC}
		V_z @ I_{zt}			I_{zt}	Z_{zt} @ I_{zt}	Z_{zk} @ I_{zk}	I_{zk}	I_R	V_R	Min	Max	
		Nom(V)	Min(V)	Max(V)	mA	Ω	mA	μA	V			mA	
BZT52C 2V4	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C 2V7	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C 3V0	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C 3V3	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0	5
BZT52C 3V6	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0	5
BZT52C 3V9	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C 4V3	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0	5
BZT52C 4V7	W7	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2	5
BZT52C 5V1	W8	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2	5
BZT52C 5V6	W9	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5	5
BZT52C 6V2	WA	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7	5
BZT52C 6V8	WB	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5	5

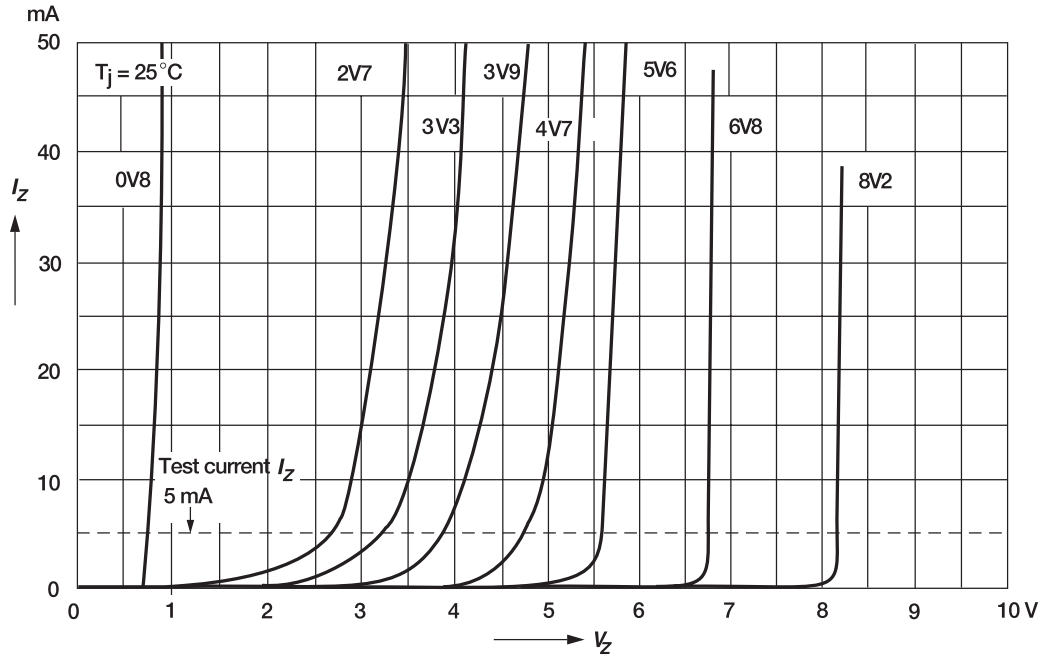
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Device	Marking	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical Temperature coefficient @I _{ZTC} =mV/°C		Test Current I _{ZTC} mA
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R	V _R	Min	Max	
		Nom(V)	Min(V)	Max(V)	mA	Ω	mA	uA	V				
BZT52C 7V5	WC	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3	5
BZT52C 8V2	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C 9V1	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C 11	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C 12	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C 13	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C 15	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C 16	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C 18	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C 20	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C 22	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C 24	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C 27	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C 30	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C 33	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C 36	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C 39	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZT52C 43	WU	43	40.0	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0	5
BZT52C 47	WV	47	44.0	50.0	2	100	750	1.0	0.1	35.0	10.0	12.0	5
BZT52C 51	WW	51	48.0	54.0	2	100	750	1.0	0.1	38.0	10.0	12.0	5

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

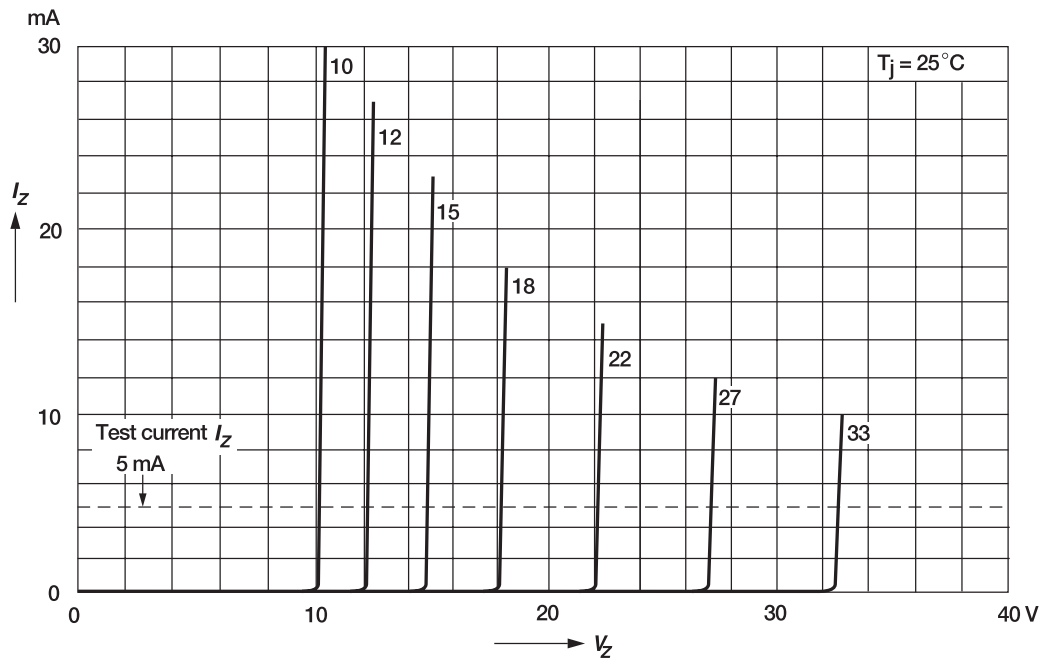
Breakdown characteristics

at $T_j = \text{constant}$ (pulsed)



Breakdown characteristics

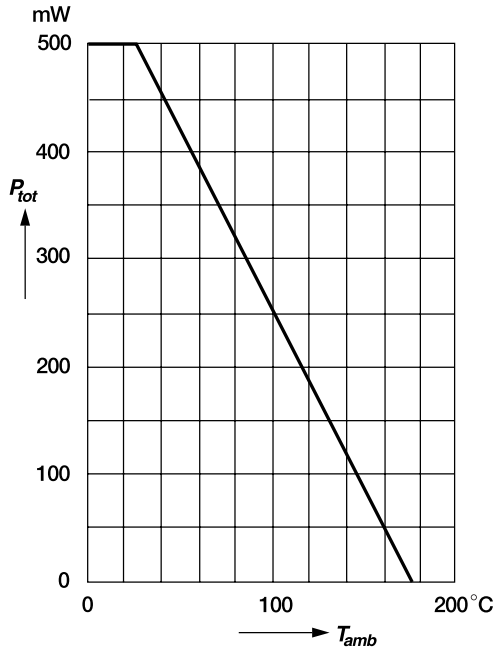
at $T_j = \text{constant}$ (pulsed)



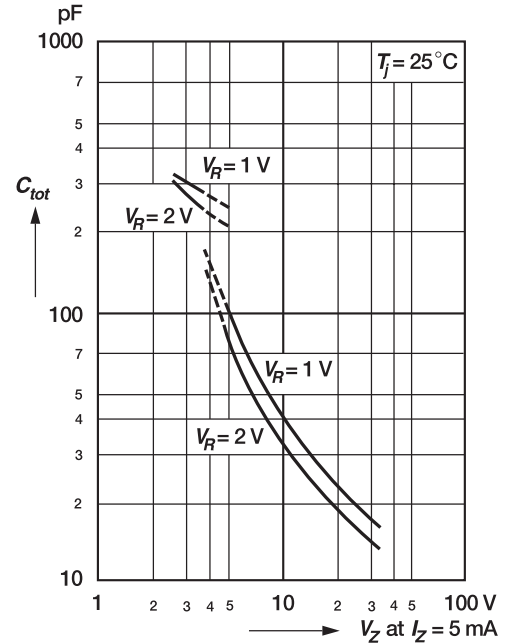
Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Admissible power dissipation versus ambient temperature

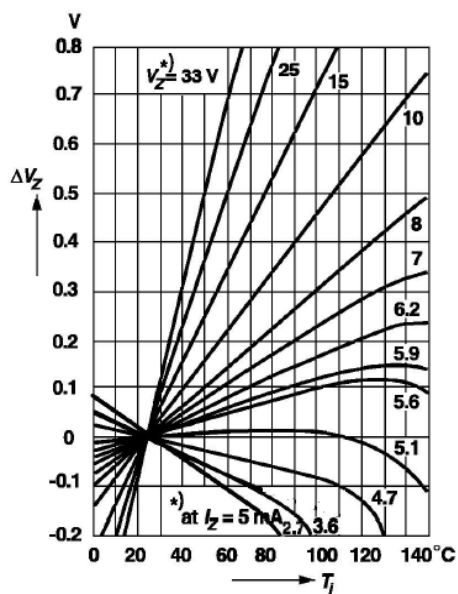
Valid provided that leads are kept ambient temperature at a distance of 8 mm from case.



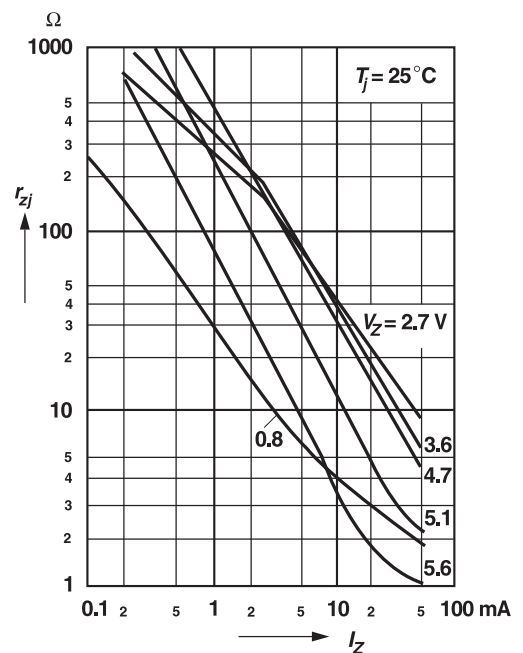
Capacitance versus Zener voltage



Change of Zener voltage versus junction temperature

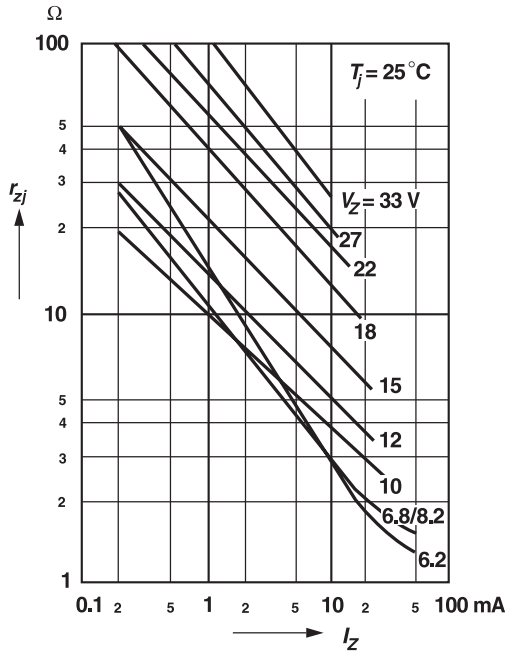


Dynamic resistance versus Zener current



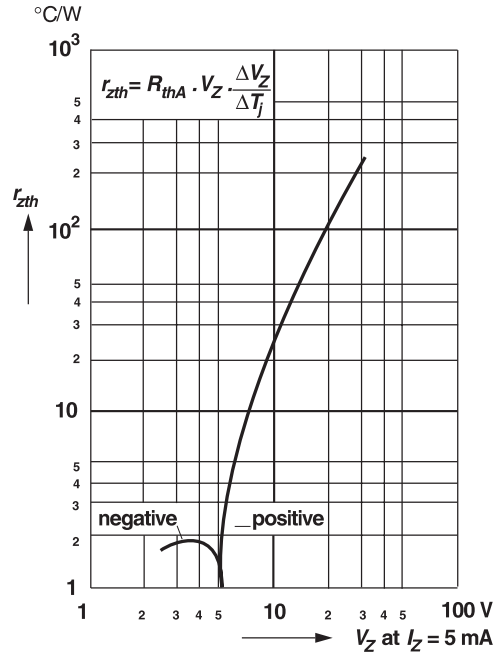
Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Dynamic resistance versus Zener current

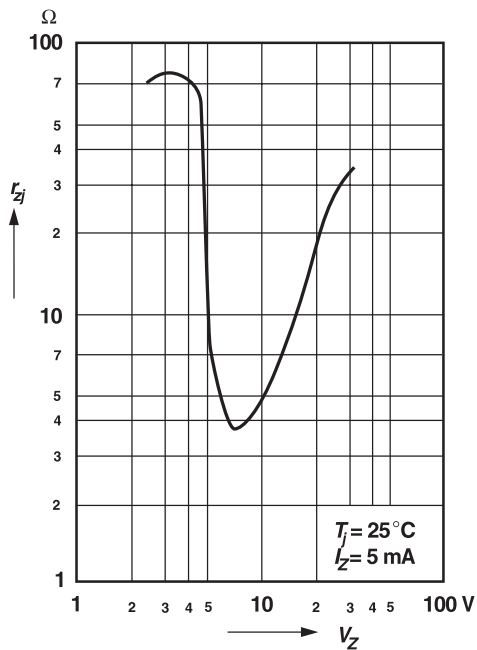


Thermal differential resistance versus Zener voltage

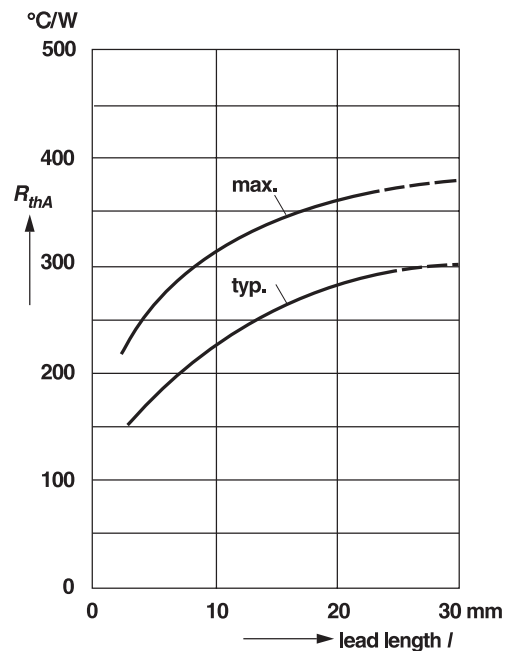
Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener voltage

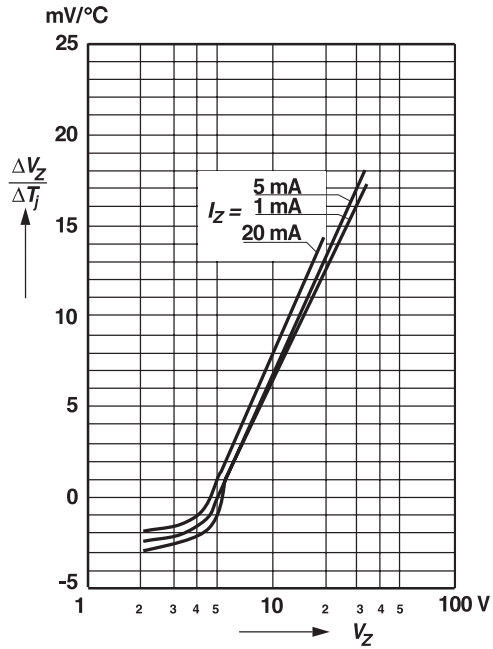


Thermal resistance versus lead length

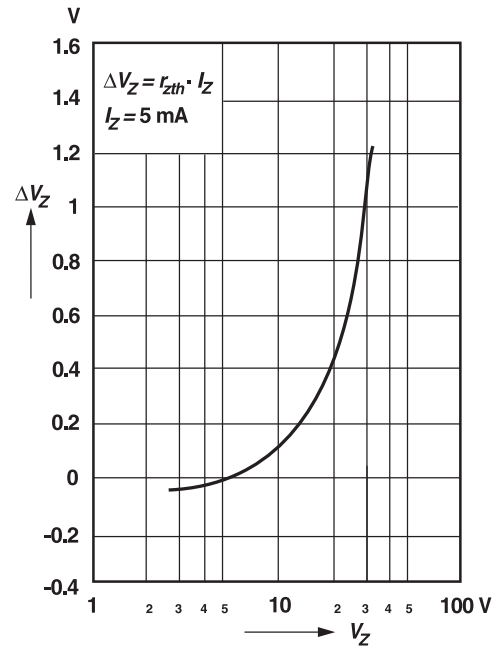


Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Temperature dependence of Zener voltage versus Zener voltage

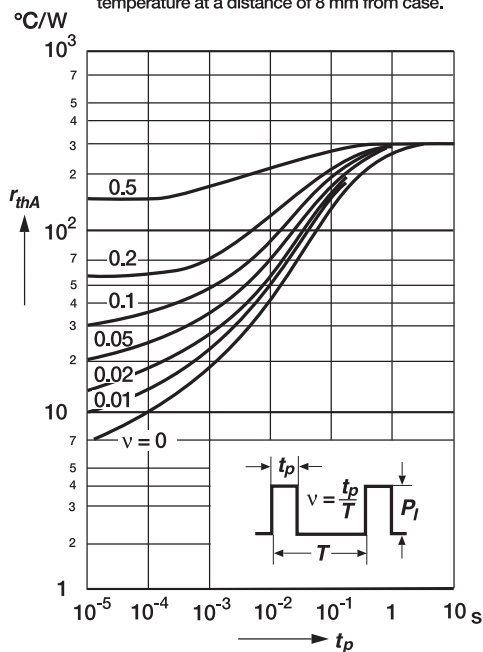


Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



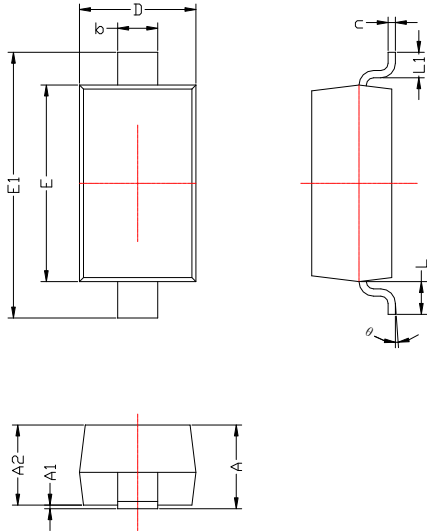
Pulse thermal resistance versus pulse duration

Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



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SOD-123 PACKAGE OUTLINE Plastic surface mounted package



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.950	1.350
A1	0.000	0.100
A2	0.950	1.250
b	0.450	0.650
c	0.080	0.150
D	1.500	1.700
E	2.500	2.800
E1	3.550	3.850
L	0.500REF	
L1	0.250	0.450
θ	0°	8°