

APPROVAL DATA SHEET

客戶承認書

CUSTOMER : Maritex

APPLICATION : _____

PRODUCT : NTC THERMISTOR

CUSTOMER NO.: _____

PART NO. : 11S0603103JC

PROJECT NO. : _____

DATE : 2015/2/23

VERSION : Ver.1

R 25	:	<u>10,000</u>	ohms ±	<u>5.0%</u>
B 25 - 85	:	<u>3435</u>	°K ±	<u>3.0%</u>

PLEASE SIGN BACK ONE COPY OF THIS SPECIFICATION AFTER COMPLETION OF APPROVAL

APPROVAL BY: _____

DATE: _____



宏碩科技股份有限公司

Hyper- Sense Technology Co., Ltd.

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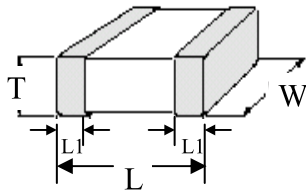
HST	SPECIFICATION	NTC THERMISTOR
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PART NO. : 11S0603103JC

1. APPEARANCE

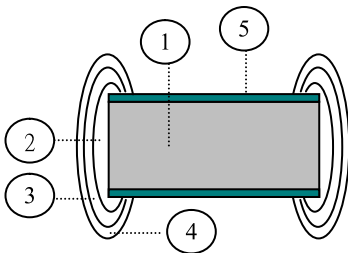
1-1 DIMENSIONS

unit : mm



Symbol	Min.	Nor.	Max.
L	1.45	1.60	1.75
W	0.65	0.80	0.95
T	-	-	0.95
L1	0.20	-	0.50

1-2 CONSTRUCTION & MATERIAL

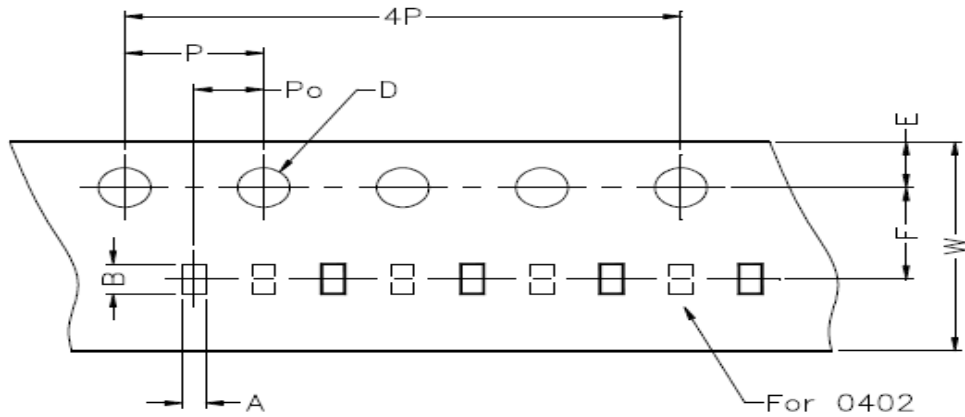


No.	Part Name	Materials	Remark
1	Element	Metal Oxide	
2	End Termination	Ag	
3	Ni plated	Ni	
4	Solder plated	Sn	Lead Free
5	Coating	Glass	

2. ELECTRICAL RATING

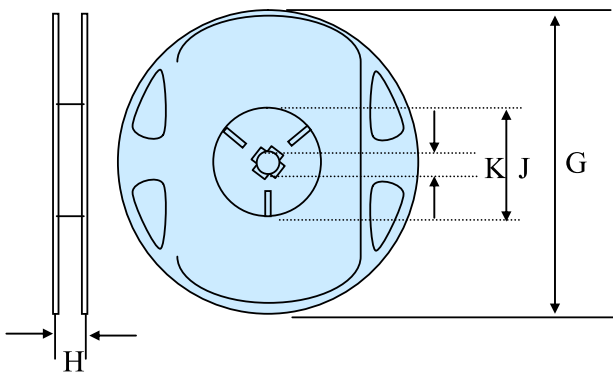
No.	Item	Symbol	Conditions	Min.	Nor.	Max.	Unit
1	Resistance at Ta	R ₂₅	Ta : 25 ±0.1°C	9,500	10,000	10,500	ohms
2	B Constant	B	4099 Log(R ₂₅ /R ₈₅)	3332	3435	3538	° K
3	Dissipation Constant	C	Ta : 25	-	3.5	-	mW/°C
4	Thermal Time Constant	t	Ta : 25	-	5	-	sec
5	Max. Rated Power	P _{max.}	Ta : 25	-	-	350	mW
6	Operating Temperature	T		-40	-	125	°C

3. TAPING DIMENSIONS



unit : mm

Symbol	0402		0603		0805		1206	
	Value	Tolerance	Value	Tolerance	Value	Tolerance	Value	Tolerance
A	0.66	±0.03	1.08	±0.05	1.50	±0.05	2.00	±0.05
B	1.15	±0.03	1.85	±0.05	2.30	±0.05	3.57	±0.05
W	8.00	±0.05	8.00	±0.05	8.00	±0.05	8.00	±0.02
D	1.50	±0.10	1.50	±0.10	1.50	±0.10	1.55	±0.05
E	1.75	±0.05	1.75	±0.05	1.75	±0.05	1.75	±0.10
F	3.50	±0.05	3.50	±0.05	3.50	±0.05	3.50	±0.05
P	4.00	±0.05	4.00	±0.05	4.00	±0.05	4.00	±0.10
P0	2.00	±0.05	2.00	±0.05	2.00	±0.05	2.00	±0.05
4P	16.00	±0.05	16.00	±0.05	16.00	±0.05	16.00	±0.05



Symbol	Dimensios	
G	178	±2.0
J	60	±1.5
H	9	±0.3
K	13	±0.2

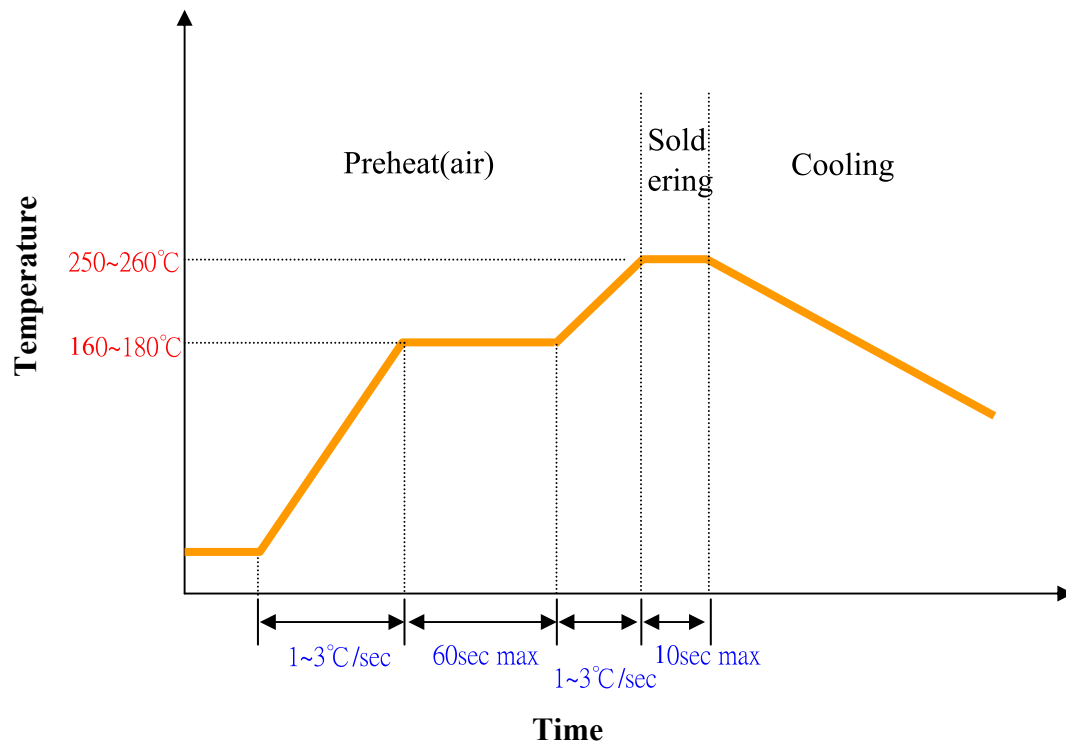
unit : mm

4,000 pcs/Reel

HST	SPECIFICATION	NTC THERMISTOR	
PART NO. : <u>11S0603103JC</u>			
3. ENVIRONMENTAL RATING			
No.	Item	Condition and Test Method	Rated Value
1	Life	125°C x 1000Hrs, NTCWV intermittent MIL-STD-202F, Method 108A	Within ±5%
2	Humidity (Steady State)	40°C, 95%R.H. x 1000Hrs MIL-STD-202F, Method 103B	Within ±5%
3	Temperature Cycle	(-40°C -> 125°C) x 10 cycle MIL-STD-202F, Method 107	Within ±5%
4	Solderability	230°C for 5 sec. MIL-STD-202F, Method 208	95% min. coverage
5	Resistance to Soldering Heat	Soldered to test board at 260°C for 10 sec. MIL-R-55342D, Para 4.7.7	Within ±5%
6	Bending Strength	Pressurizing rod at a rate 1mm/sec. for 1mm. JIS C 5202 5.7	No break out and damage
7	Resistance to Flexure of Substrate	Pressurizing force shall be 3kg (min.) JIS C 5202 5.7	Within ±5%

PART NO. : 11S0603103JC

4. REFLOW SOLDERING PROFILE



HST	SPECIFICATION	NTC THERMISTOR
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RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: 11S0603103JC

R	10,000	ohms ±	5%
B	3435	°K ±	3%

Temperature (°C)	Resistance (Ω)			Temperature Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-40	214196	248277	287061	-6.32	-13.73	15.62	-2.47	2.17
-39	201514	233136	269047	-6.27	-13.56	15.40	-2.46	2.16
-38	189681	219036	252302	-6.21	-13.40	15.19	-2.44	2.16
-37	178634	205897	236728	-6.16	-13.24	14.97	-2.43	2.15
-36	168316	193648	222235	-6.11	-13.08	14.76	-2.42	2.14
-35	158673	182221	208740	-6.06	-12.92	14.55	-2.40	2.13
-34	149657	171555	196167	-6.01	-12.76	14.35	-2.39	2.13
-33	141221	161595	184447	-5.96	-12.61	14.14	-2.37	2.12
-32	133325	152289	173515	-5.91	-12.45	13.94	-2.36	2.11
-31	125931	143589	163314	-5.86	-12.30	13.74	-2.34	2.10
-30	119002	135452	153790	-5.81	-12.14	13.54	-2.33	2.09
-29	112507	127836	144892	-5.76	-11.99	13.34	-2.32	2.08
-28	106415	120706	136575	-5.72	-11.84	13.15	-2.30	2.07
-27	100698	114027	128797	-5.67	-11.69	12.95	-2.28	2.06
-26	95331	107767	121520	-5.62	-11.54	12.76	-2.27	2.05
-25	90290	101897	114708	-5.58	-11.39	12.57	-2.25	2.04
-24	85553	96390	108328	-5.53	-11.24	12.39	-2.24	2.03
-23	81099	91221	102350	-5.49	-11.10	12.20	-2.22	2.02
-22	76910	86367	96745	-5.45	-10.95	12.02	-2.21	2.01
-21	72968	81807	91488	-5.40	-10.81	11.83	-2.19	2.00
-20	69257	77521	86555	-5.36	-10.66	11.65	-2.17	1.99
-19	65761	73491	81924	-5.32	-10.52	11.47	-2.16	1.98
-18	62468	69699	77574	-5.28	-10.38	11.30	-2.14	1.97
-17	59363	66131	73486	-5.24	-10.23	11.12	-2.12	1.95
-16	56435	62770	69643	-5.19	-10.09	10.95	-2.11	1.94
-15	53672	59605	66028	-5.15	-9.95	10.78	-2.09	1.93
-14	51064	56622	62627	-5.11	-9.82	10.61	-2.07	1.92
-13	48602	53809	59425	-5.08	-9.68	10.44	-2.06	1.91
-12	46276	51156	56409	-5.04	-9.54	10.27	-2.04	1.89
-11	44077	48652	53568	-5.00	-9.40	10.10	-2.02	1.88
-10	41999	46289	50890	-4.96	-9.27	9.94	-2.00	1.87
-9	40033	44057	48365	-4.92	-9.13	9.78	-1.99	1.86
-8	38173	41949	45982	-4.89	-9.00	9.62	-1.97	1.84
-7	36413	39956	43734	-4.85	-8.87	9.46	-1.95	1.83
-6	34746	38071	41611	-4.81	-8.73	9.30	-1.93	1.81
-5	33167	36289	39605	-4.78	-8.60	9.14	-1.91	1.80
-4	31670	34602	37711	-4.74	-8.47	8.98	-1.89	1.79
-3	30252	33005	35920	-4.71	-8.34	8.83	-1.88	1.77
-2	28907	31493	34226	-4.67	-8.21	8.68	-1.86	1.76
-1	27630	30061	32624	-4.64	-8.09	8.52	-1.84	1.74
0	26419	28704	31107	-4.60	-7.96	8.37	-1.82	1.73
1	25270	27417	29672	-4.57	-7.83	8.23	-1.80	1.71

HST	SPECIFICATION	NTC THERMISTOR
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RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: 11S0603103JC

R	10,000	ohms ±	5%
B	3435	°K ±	3%

Temperature (°C)	Resistance (Ω)			Temperature Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
2	24178	26196	28312	-4.54	-7.71	8.08	-1.78	1.70
3	23140	25038	27024	-4.50	-7.58	7.93	-1.76	1.68
4	22155	23939	25803	-4.47	-7.46	7.79	-1.74	1.67
5	21217	22896	24646	-4.44	-7.33	7.64	-1.72	1.65
6	20326	21905	23548	-4.41	-7.21	7.50	-1.70	1.64
7	19478	20964	22506	-4.38	-7.09	7.36	-1.68	1.62
8	18672	20069	21518	-4.35	-6.96	7.22	-1.66	1.60
9	17904	19219	20579	-4.31	-6.84	7.08	-1.64	1.59
10	17172	18410	19688	-4.28	-6.72	6.94	-1.62	1.57
11	16476	17641	18841	-4.25	-6.60	6.80	-1.60	1.55
12	15812	16908	18036	-4.22	-6.49	6.67	-1.58	1.54
13	15179	16211	17270	-4.19	-6.37	6.53	-1.56	1.52
14	14576	15548	16543	-4.17	-6.25	6.40	-1.54	1.50
15	14001	14915	15850	-4.14	-6.13	6.27	-1.51	1.48
16	13452	14313	15191	-4.11	-6.02	6.14	-1.49	1.46
17	12928	13739	14564	-4.08	-5.90	6.01	-1.47	1.45
18	12428	13191	13967	-4.05	-5.79	5.88	-1.45	1.43
19	11951	12669	13398	-4.02	-5.67	5.75	-1.43	1.41
20	11495	12171	12855	-4.00	-5.56	5.62	-1.41	1.39
21	11059	11696	12339	-3.97	-5.45	5.49	-1.38	1.37
22	10643	11242	11846	-3.94	-5.33	5.37	-1.36	1.35
23	10245	10809	11376	-3.92	-5.22	5.25	-1.34	1.33
24	9864	10395	10928	-3.89	-5.11	5.12	-1.32	1.31
25	9500	10000	10500	-3.86	-5.00	5.00	-1.29	1.29
26	9131	9622	10115	-3.84	-5.11	5.12	-1.33	1.33
27	8778	9261	9747	-3.81	-5.22	5.24	-1.37	1.37
28	8441	8916	9394	-3.79	-5.33	5.36	-1.42	1.41
29	8119	8585	9056	-3.76	-5.43	5.48	-1.46	1.44
30	7811	8269	8733	-3.74	-5.54	5.60	-1.50	1.48
31	7517	7967	8423	-3.71	-5.65	5.72	-1.54	1.52
32	7236	7678	8126	-3.69	-5.75	5.84	-1.58	1.56
33	6967	7400	7841	-3.66	-5.85	5.95	-1.62	1.60
34	6710	7135	7568	-3.64	-5.96	6.07	-1.67	1.64
35	6464	6881	7306	-3.62	-6.06	6.18	-1.71	1.68
36	6228	6637	7055	-3.59	-6.16	6.30	-1.75	1.71
37	6003	6404	6814	-3.57	-6.26	6.41	-1.80	1.75
38	5786	6180	6583	-3.55	-6.36	6.53	-1.84	1.79
39	5580	5965	6361	-3.53	-6.46	6.64	-1.88	1.83
40	5381	5759	6148	-3.50	-6.56	6.75	-1.93	1.87
41	5191	5561	5943	-3.48	-6.66	6.86	-1.97	1.91
42	5009	5372	5746	-3.46	-6.75	6.98	-2.02	1.95
43	4834	5190	5557	-3.44	-6.85	7.09	-2.06	1.99

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RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: 11S0603103JC

R	10,000	ohms ±	5%
B	3435	°K ±	3%

Temperature (°C)	Resistance (Ω)			Temperature Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
44	4667	5015	5376	-3.41	-6.95	7.20	-2.11	2.03
45	4506	4847	5201	-3.39	-7.04	7.31	-2.15	2.08
46	4352	4686	5033	-3.37	-7.14	7.42	-2.20	2.12
47	4203	4531	4872	-3.35	-7.23	7.52	-2.25	2.16
48	4061	4382	4717	-3.33	-7.32	7.63	-2.29	2.20
49	3925	4239	4567	-3.31	-7.41	7.74	-2.34	2.24
50	3794	4101	4423	-3.29	-7.51	7.85	-2.39	2.28
51	3668	3969	4285	-3.27	-7.60	7.95	-2.43	2.32
52	3547	3842	4151	-3.25	-7.69	8.06	-2.48	2.37
53	3430	3719	4023	-3.23	-7.78	8.16	-2.53	2.41
54	3318	3602	3899	-3.21	-7.87	8.27	-2.58	2.45
55	3211	3488	3780	-3.19	-7.95	8.37	-2.62	2.49
56	3107	3379	3665	-3.17	-8.04	8.47	-2.67	2.54
57	3008	3274	3555	-3.15	-8.13	8.58	-2.72	2.58
58	2912	3173	3448	-3.13	-8.22	8.68	-2.77	2.62
59	2820	3075	3345	-3.11	-8.30	8.78	-2.82	2.67
60	2731	2981	3246	-3.09	-8.39	8.88	-2.87	2.71
61	2646	2891	3150	-3.08	-8.47	8.98	-2.92	2.75
62	2563	2803	3058	-3.06	-8.56	9.08	-2.97	2.80
63	2484	2719	2969	-3.04	-8.64	9.18	-3.02	2.84
64	2408	2638	2883	-3.02	-8.72	9.28	-3.07	2.89
65	2334	2560	2800	-3.00	-8.81	9.38	-3.12	2.93
66	2263	2484	2720	-2.99	-8.89	9.48	-3.17	2.98
67	2195	2411	2642	-2.97	-8.97	9.58	-3.23	3.02
68	2129	2341	2567	-2.95	-9.05	9.67	-3.28	3.07
69	2066	2273	2495	-2.93	-9.13	9.77	-3.33	3.11
70	2004	2208	2425	-2.92	-9.21	9.87	-3.38	3.16
71	1945	2144	2358	-2.90	-9.29	9.96	-3.44	3.20
72	1888	2083	2293	-2.88	-9.37	10.06	-3.49	3.25
73	1833	2024	2230	-2.87	-9.45	10.15	-3.54	3.30
74	1780	1967	2169	-2.85	-9.52	10.25	-3.60	3.34
75	1728	1912	2110	-2.83	-9.60	10.34	-3.65	3.39
76	1679	1859	2053	-2.82	-9.68	10.44	-3.70	3.43
77	1631	1807	1998	-2.80	-9.75	10.53	-3.76	3.48
78	1585	1757	1944	-2.79	-9.83	10.62	-3.81	3.53
79	1540	1709	1892	-2.77	-9.90	10.71	-3.87	3.58
80	1497	1663	1842	-2.75	-9.98	10.81	-3.92	3.62
81	1455	1618	1794	-2.74	-10.05	10.90	-3.98	3.67
82	1415	1574	1747	-2.72	-10.13	10.99	-4.04	3.72
83	1376	1532	1702	-2.71	-10.20	11.08	-4.09	3.77
84	1338	1491	1658	-2.69	-10.27	11.17	-4.15	3.82
85	1302	1452	1615	-2.68	-10.34	11.26	-4.21	3.86

HST	SPECIFICATION	NTC THERMISTOR
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RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: 11S0603103JC

R	10,000	ohms ±	5%
B	3435	°K ±	3%

Temperature (°C)	Resistance (Ω)			Temperture Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
86	1266	1413	1574	-2.66	-10.42	11.35	-4.26	3.91
87	1232	1376	1534	-2.65	-10.49	11.44	-4.32	3.96
88	1199	1341	1495	-2.63	-10.56	11.52	-4.38	4.01
89	1167	1306	1457	-2.62	-10.63	11.61	-4.43	4.06
90	1136	1272	1421	-2.60	-10.70	11.70	-4.49	4.11
91	1106	1240	1386	-2.59	-10.77	11.79	-4.55	4.16
92	1077	1208	1351	-2.58	-10.84	11.87	-4.61	4.21
93	1049	1177	1318	-2.56	-10.91	11.96	-4.67	4.26
94	1022	1148	1286	-2.55	-10.97	12.05	-4.73	4.31
95	995	1119	1255	-2.53	-11.04	12.13	-4.79	4.36
96	970	1091	1224	-2.52	-11.11	12.22	-4.85	4.41
97	945	1064	1195	-2.51	-11.18	12.30	-4.91	4.46
98	921	1038	1166	-2.49	-11.24	12.39	-4.97	4.51
99	898	1012	1138	-2.48	-11.31	12.47	-5.03	4.56
100	875	987	1111	-2.47	-11.37	12.55	-5.09	4.61
101	853	963	1085	-2.45	-11.44	12.64	-5.15	4.66
102	832	940	1060	-2.44	-11.51	12.72	-5.21	4.71
103	811	917	1035	-2.43	-11.57	12.80	-5.27	4.77
104	791	896	1011	-2.41	-11.63	12.88	-5.34	4.82
105	772	874	988	-2.40	-11.70	12.96	-5.40	4.87
106	753	854	965	-2.39	-11.76	13.05	-5.46	4.92
107	735	833	943	-2.38	-11.82	13.13	-5.52	4.98
108	717	814	921	-2.36	-11.89	13.21	-5.59	5.03
109	700	795	901	-2.35	-11.95	13.29	-5.65	5.08
110	683	777	880	-2.34	-12.01	13.37	-5.71	5.13
111	667	759	861	-2.33	-12.07	13.45	-5.78	5.19
112	651	741	841	-2.31	-12.13	13.52	-5.84	5.24
113	636	724	823	-2.30	-12.19	13.60	-5.91	5.30
114	621	708	805	-2.29	-12.26	13.68	-5.97	5.35
115	607	692	787	-2.28	-12.32	13.76	-6.04	5.40
116	593	676	770	-2.27	-12.38	13.84	-6.10	5.46
117	579	661	753	-2.26	-12.43	13.91	-6.17	5.51
118	566	646	737	-2.24	-12.49	13.99	-6.23	5.57
119	553	632	721	-2.23	-12.55	14.07	-6.30	5.62
120	540	618	706	-2.22	-12.61	14.14	-6.37	5.68
121	528	605	691	-2.21	-12.67	14.22	-6.43	5.73
122	516	591	676	-2.20	-12.73	14.30	-6.50	5.79
123	505	579	662	-2.19	-12.78	14.37	-6.57	5.84
124	493	566	648	-2.18	-12.84	14.45	-6.64	5.90
125	483	554	634	-2.17	-12.90	14.52	-6.70	5.95