

Approval

Manufacturer:

Mayloon Electronic Co., Ltd.,
Tel: 852-2408 9788 Fax: 852-2406 9982
<http://www.mayloon.com>

Customer:

Approved By:	Checked By:	Prepared By :

Approved By:	Examined By:	Tested By :

Company's Stamp	
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Company's Stamp	
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Approval No. : _____

Product : NTC THERMISTOR

Mayloon Part No. : SMD05-103 J 3900 H

Customer's Part No. : _____

Specifications : R₂₅ 10,000 Ω ± 5 %

B₂₅₋₈₅ 3900 °K ± 3 %

Date : _____

Specification of SMD Chips Thermistor

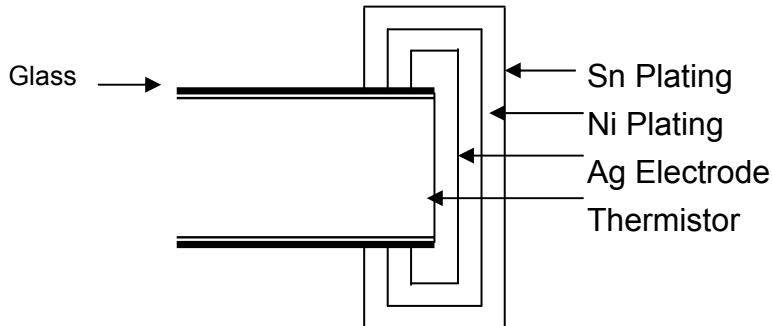
◆ **PART NO. : SMD05-103 J 3900 H**

◆ **CHIP DIMENSIONS**



Item	L(mm)	W(mm)	T(mm)	C(mm)
2125 (0805)	2.00 ±0.20	1.25 ±0.20	1.20±0.20	0.50±0.20

◆ **CHIP STRUCTURE**



◆ **ELECTRICAL CHARACTERISTICS**

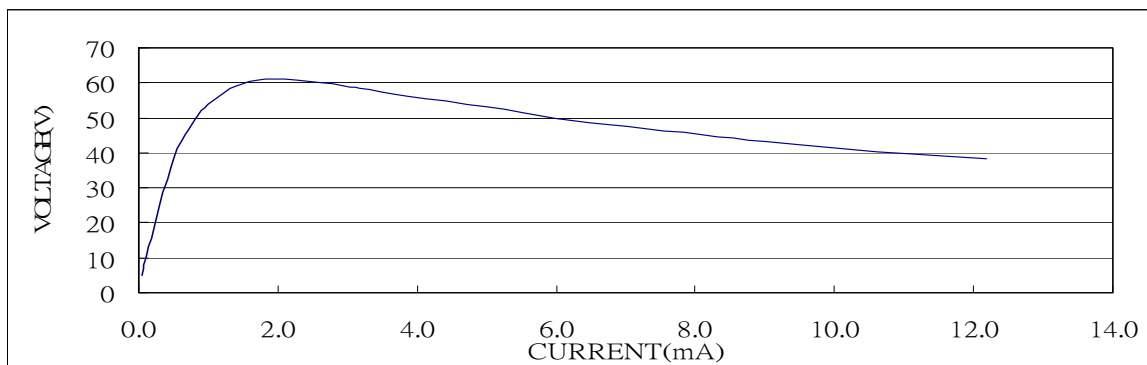
Style	Symbol	Condition	Specification
Resistance at 25°C	R ₂₅	T = 25 ± 0.1°C	10K Ω ± 5 %
B Constant	B	25°C to 85°C	3900 °K ± 3 %
Thermal Time Constant	T	T = 25 ± 0.1°C	Approx. 7.5 sec
Thermal Dissipation Constant	C	T = 25 ± 0.1°C	Approx. 4 mW/°C
Maximum Power Rating*	P _w	T = 25 ± 0.1°C	400 mW
Operation Temp. Range	--	--	-40°C ~ 125°C

*Maximum Power Rating = Thermal Dissipation Constant × (125°C-25°C)

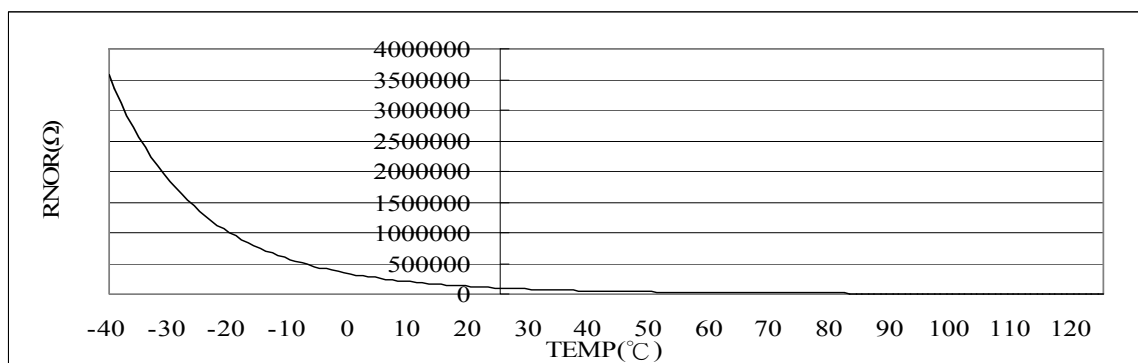
◆ RELIABILITY TEST

PERFORMANCE	TEST METHOD	APPRAISE
Life	MIL – STD – 202F , Method 108A 1000 hours at 125°C NTC WV intermittent	Within ±3 %
Humidity	MIL – STD – 202F , Method 103B 1000 hours at Temperature: 40°C Humidity: 95%	Within ±3 %
Thermal Shock	MIL – STD – 202F , Method 107 10 cycles, -40°C to +125°C	Within ±3 %
Solderability	MIL – STD – 202F , Method 208 235°C for 2 seconds	95% min. coverage
Resistance to Soldering Heat	MIL – R – 55342D , Para 4.7.7 Soldered to test board at 260°C for 10 seconds	Within ±3 %
Bending Strength	JIS C 5202 6.1.4 Pressurizing rod at a rate at 1mm/sec for 1mm	Within ±3 %
Resistance to flexure of Substrate	JIS C 5202 6.2.1 Pressurizing force shall be 3kg (min.)	Over 3 kg
Insulation Resistance	MIL – STD – 202F , Method 302 DC 250V For 10 seconds	Over 1000MΩ
Dielectric Withstand Voltage	MIL – STD – 202F , Method 301 DC 250V For 10 seconds	Not Short

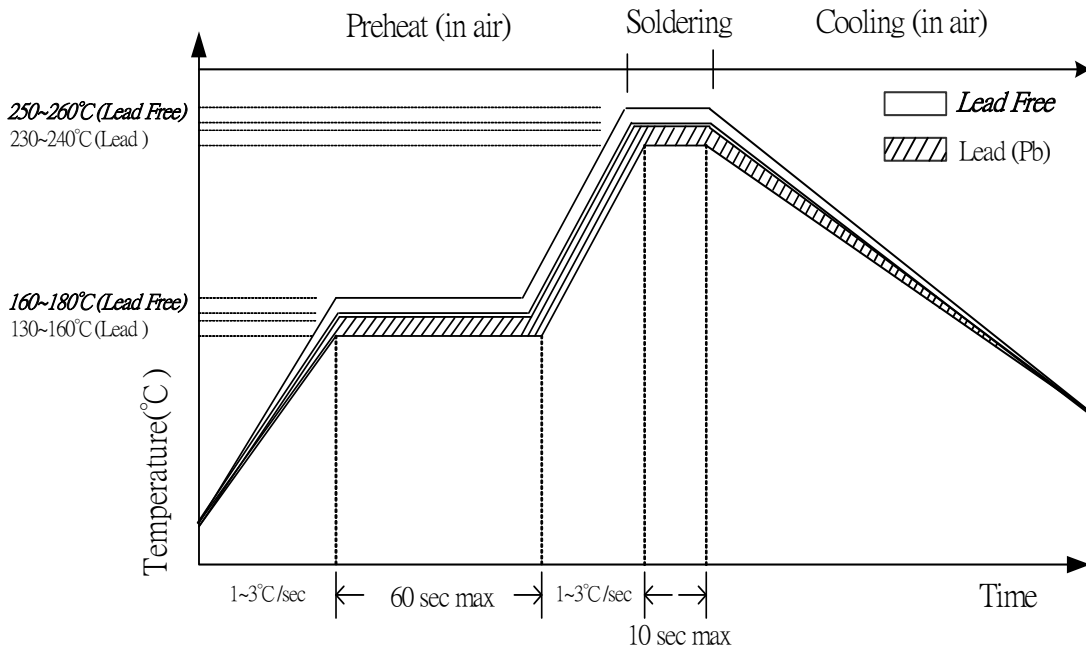
◆ VOLTAGE – CURRENT CURVE



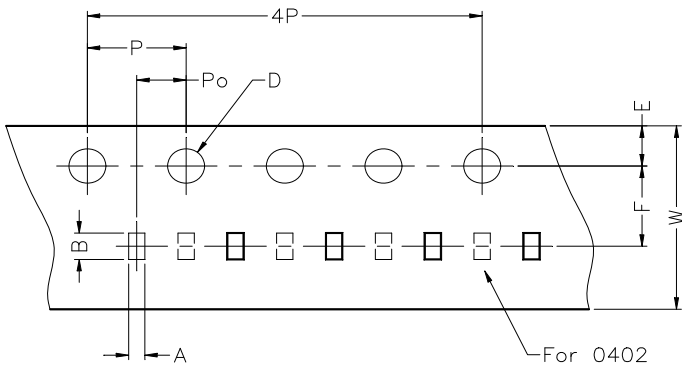
◆ RESISTANCE – TEMP CURVE



◆ REFLOW SOLDERING PROFILE



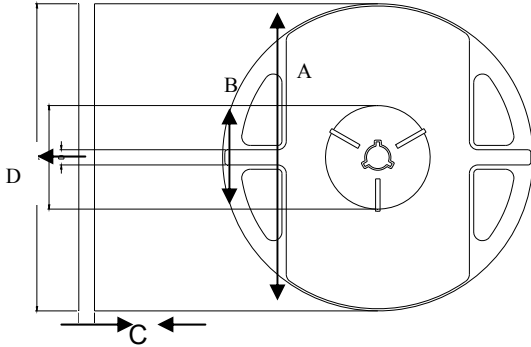
◆ TAPING DIMENSIONS



Unit: mm

Dimension	0805	0603	0402
A	1.50 ± 0.05	1.08 ± 0.05	0.66 ± 0.03
B	2.30 ± 0.05	1.85 ± 0.05	1.15 ± 0.03
W	8.00 ± 0.05	8.00 ± 0.05	8.00 ± 0.05
D	1.50 ± 0.10	1.50 ± 0.10	1.50 ± 0.10
E	1.75 ± 0.05	1.75 ± 0.05	1.75 ± 0.05
F	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
Po	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

◆ **REEL DIMENSIONS**



Unit: mm

Item	A	B	C	D
Dimension	178.0 ±1.0	60.0 ±1.0	9.0 ±0.1	13.0 ±0.1

◆ **ORDERING INFORMATION**

SMD 05 103 J 3900 H
 ① ② ③ ④ ⑤ ⑥

1. Series SMD Thermistor. (TH - Lead (Pb) ; TF – Lead Free)
2. Dimension : 05 (0805) , 03 (0603) , 02 (0402)
3. Resistance : 103 = $10 \times 10^3 = 10,000$ ohm
4. R Tolerance : F:±1% ; G:±2% ; H:±3% ; J:±5% ; K:±10%
5. B value : 3215, 3435, 3900, 3970, 4000, 4100,.....etc.
6. B Tolerance : F:±1% ; G:±2% ; H:±3%

● **ACCESSORY : RESISTANCE-TEMPERATURE CHARACTERISTICS**

RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: SMD05-103 J 3900 H

R : 10,000 ohms ± 3%

B : 3900 °K ± 5%

Temperature (°C)	Resistance (Ω)			Temperature Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-40.0	309994	383504	474019	-7.17	-19.17	23.60	-3.29	2.67
-39.0	289653	357062	439763	-7.11	-18.88	23.16	-3.26	2.65
-38.0	270804	332646	408243	-7.05	-18.59	22.73	-3.22	2.64
-37.0	253326	310085	379221	-6.99	-18.30	22.30	-3.19	2.62
-36.0	237109	289226	352482	-6.93	-18.02	21.87	-3.15	2.60
-35.0	222053	269928	327829	-6.88	-17.74	21.45	-3.12	2.58
-34.0	208068	252063	305085	-6.82	-17.45	21.04	-3.08	2.56
-33.0	195069	235514	284089	-6.76	-17.17	20.63	-3.05	2.54
-32.0	182980	220176	264695	-6.71	-16.89	20.22	-3.01	2.52
-31.0	171731	205951	246769	-6.65	-16.62	19.82	-2.98	2.50
-30.0	161258	192752	230189	-6.60	-16.34	19.42	-2.94	2.48
-29.0	151501	180496	214846	-6.54	-16.06	19.03	-2.91	2.46
-28.0	142407	169110	200639	-6.49	-15.79	18.64	-2.87	2.43
-27.0	133927	158526	187475	-6.44	-15.52	18.26	-2.84	2.41
-26.0	126014	148682	175271	-6.38	-15.25	17.88	-2.80	2.39
-25.0	118627	139522	163950	-6.33	-14.98	17.51	-2.76	2.36
-24.0	111727	130993	153443	-6.28	-14.71	17.14	-2.73	2.34
-23.0	105278	123047	143685	-6.23	-14.44	16.77	-2.69	2.32
-22.0	99249	115641	134618	-6.18	-14.17	16.41	-2.65	2.29
-21.0	93609	108734	126189	-6.13	-13.91	16.05	-2.62	2.27
-20.0	88331	102289	118348	-6.09	-13.65	15.70	-2.58	2.24
-19.0	83388	96273	111050	-6.04	-13.38	15.35	-2.54	2.22
-18.0	78757	90654	104254	-5.99	-13.12	15.00	-2.50	2.19
-17.0	74416	85402	97922	-5.94	-12.86	14.66	-2.47	2.16
-16.0	70346	80493	92020	-5.90	-12.61	14.32	-2.43	2.14
-15.0	66528	75900	86515	-5.85	-12.35	13.99	-2.39	2.11
-14.0	62943	71602	81378	-5.81	-12.09	13.65	-2.35	2.08
-13.0	59578	67577	76582	-5.76	-11.84	13.33	-2.31	2.05
-12.0	56415	63807	72103	-5.72	-11.58	13.00	-2.27	2.03
-11.0	53443	60274	67916	-5.67	-11.33	12.68	-2.23	2.00

-10.0	50649	56961	64002	-5.63	-11.08	12.36	-2.19	1.97
-9.0	48020	53853	60340	-5.59	-10.83	12.05	-2.16	1.94
-8.0	45546	50936	56914	-5.55	-10.58	11.73	-2.12	1.91
-7.0	43216	48198	53705	-5.51	-10.34	11.43	-2.08	1.88
-6.0	41022	45625	50699	-5.46	-10.09	11.12	-2.04	1.85
-5.0	38954	43208	47882	-5.42	-9.84	10.82	-1.99	1.81
-4.0	37005	40935	45241	-5.38	-9.60	10.52	-1.95	1.78
-3.0	35167	38797	42764	-5.34	-9.36	10.22	-1.91	1.75
-2.0	33432	36785	40439	-5.30	-9.12	9.93	-1.87	1.72
-1.0	31795	34892	38256	-5.27	-8.88	9.64	-1.83	1.69
0.0	30249	33109	36205	-5.23	-8.64	9.35	-1.79	1.65
1.0	28789	31428	34279	-5.19	-8.40	9.07	-1.75	1.62
2.0	27409	29845	32467	-5.15	-8.16	8.79	-1.71	1.58
3.0	26105	28352	30764	-5.11	-7.92	8.51	-1.66	1.55
4.0	24871	26943	29161	-5.08	-7.69	8.23	-1.62	1.51
5.0	23704	25614	27653	-5.04	-7.46	7.96	-1.58	1.48
6.0	22600	24359	26232	-5.00	-7.22	7.69	-1.54	1.44
7.0	21554	23174	24894	-4.97	-6.99	7.42	-1.49	1.41
8.0	20563	22055	23633	-4.93	-6.76	7.15	-1.45	1.37
9.0	19625	20997	22444	-4.90	-6.53	6.89	-1.41	1.33
10.0	18736	19996	21322	-4.86	-6.30	6.63	-1.36	1.30
11.0	17893	19050	20264	-4.83	-6.08	6.37	-1.32	1.26
12.0	17093	18155	19265	-4.80	-5.85	6.12	-1.28	1.22
13.0	16334	17307	18322	-4.76	-5.62	5.86	-1.23	1.18
14.0	15614	16505	17432	-4.73	-5.40	5.61	-1.19	1.14
15.0	14930	15745	16590	-4.70	-5.18	5.36	-1.14	1.10
16.0	14281	15025	15794	-4.66	-4.95	5.12	-1.10	1.06
17.0	13664	14343	15042	-4.63	-4.73	4.87	-1.05	1.02
18.0	13078	13696	14330	-4.60	-4.51	4.63	-1.01	0.98
19.0	12520	13082	13657	-4.57	-4.29	4.39	-0.96	0.94
20.0	11990	12500	13019	-4.54	-4.08	4.16	-0.92	0.90
21.0	11486	11947	12415	-4.51	-3.86	3.92	-0.87	0.86
22.0	11006	11422	11843	-4.48	-3.64	3.69	-0.82	0.81
23.0	10549	10924	11301	-4.45	-3.43	3.46	-0.78	0.77
24.0	10114	10450	10787	-4.42	-3.21	3.23	-0.73	0.73
25.0	9700	10000	10300	-4.39	-3.00	3.00	-0.68	0.68
26.0	9265	9572	9881	-4.36	-3.21	3.23	-0.74	0.74
27.0	8852	9165	9481	-4.33	-3.42	3.45	-0.80	0.79
28.0	8460	8778	9101	-4.30	-3.63	3.67	-0.85	0.84

29.0	8087	8410	8738	-4.27	-3.84	3.90	-0.91	0.90
30.0	7734	8059	8391	-4.24	-4.04	4.12	-0.97	0.95
31.0	7398	7726	8061	-4.22	-4.24	4.34	-1.03	1.01
32.0	7078	7408	7745	-4.19	-4.44	4.56	-1.09	1.06
33.0	6775	7105	7444	-4.16	-4.64	4.78	-1.15	1.12
34.0	6486	6816	7157	-4.13	-4.84	4.99	-1.21	1.17
35.0	6212	6541	6882	-4.11	-5.04	5.21	-1.27	1.23
36.0	5950	6279	6619	-4.08	-5.23	5.43	-1.33	1.28
37.0	5701	6028	6368	-4.05	-5.42	5.64	-1.39	1.34
38.0	5465	5790	6129	-4.03	-5.61	5.85	-1.45	1.39
39.0	5239	5562	5899	-4.00	-5.80	6.07	-1.52	1.45
40.0	5024	5344	5680	-3.98	-5.99	6.28	-1.58	1.51
41.0	4819	5137	5470	-3.95	-6.18	6.49	-1.64	1.56
42.0	4624	4938	5269	-3.93	-6.36	6.70	-1.71	1.62
43.0	4438	4749	5077	-3.90	-6.55	6.91	-1.77	1.68
44.0	4260	4567	4892	-3.88	-6.73	7.12	-1.84	1.73
45.0	4091	4394	4716	-3.85	-6.91	7.32	-1.90	1.79
46.0	3929	4229	4547	-3.83	-7.09	7.53	-1.97	1.85
47.0	3775	4070	4385	-3.81	-7.26	7.73	-2.03	1.91
48.0	3627	3919	4230	-3.78	-7.44	7.94	-2.10	1.97
49.0	3487	3774	4081	-3.76	-7.61	8.14	-2.17	2.03
50.0	3352	3635	3938	-3.73	-7.79	8.35	-2.23	2.08
51.0	3224	3502	3802	-3.71	-7.96	8.55	-2.30	2.14
52.0	3101	3375	3670	-3.69	-8.13	8.75	-2.37	2.20
53.0	2983	3253	3544	-3.67	-8.30	8.95	-2.44	2.26
54.0	2871	3136	3423	-3.64	-8.46	9.15	-2.51	2.32
55.0	2763	3024	3307	-3.62	-8.63	9.35	-2.58	2.38
56.0	2661	2917	3196	-3.60	-8.79	9.54	-2.65	2.44
57.0	2562	2814	3088	-3.58	-8.96	9.74	-2.72	2.50
58.0	2468	2716	2986	-3.56	-9.12	9.94	-2.79	2.56
59.0	2378	2621	2887	-3.54	-9.28	10.13	-2.87	2.63
60.0	2291	2530	2792	-3.51	-9.44	10.33	-2.94	2.69
61.0	2209	2443	2700	-3.49	-9.60	10.52	-3.01	2.75
62.0	2129	2360	2612	-3.47	-9.76	10.71	-3.09	2.81
63.0	2053	2279	2528	-3.45	-9.91	10.90	-3.16	2.87
64.0	1981	2202	2447	-3.43	-10.07	11.09	-3.23	2.93
65.0	1911	2128	2368	-3.41	-10.22	11.29	-3.31	3.00
66.0	1844	2057	2293	-3.39	-10.37	11.47	-3.38	3.06
67.0	1779	1989	2221	-3.37	-10.53	11.66	-3.46	3.12

68.0	1718	1923	2151	-3.35	-10.68	11.85	-3.54	3.19
69.0	1658	1860	2084	-3.33	-10.82	12.04	-3.61	3.25
70.0	1602	1799	2019	-3.31	-10.97	12.22	-3.69	3.31
71.0	1547	1741	1957	-3.29	-11.12	12.41	-3.77	3.38
72.0	1495	1684	1896	-3.27	-11.27	12.59	-3.85	3.44
73.0	1444	1630	1839	-3.25	-11.41	12.78	-3.93	3.51
74.0	1396	1578	1783	-3.24	-11.55	12.96	-4.01	3.57
75.0	1349	1528	1729	-3.22	-11.70	13.14	-4.08	3.64
76.0	1305	1480	1677	-3.20	-11.84	13.33	-4.17	3.70
77.0	1262	1433	1627	-3.18	-11.98	13.51	-4.25	3.77
78.0	1220	1389	1579	-3.16	-12.12	13.69	-4.33	3.83
79.0	1181	1345	1532	-3.14	-12.26	13.87	-4.41	3.90
80.0	1142	1304	1487	-3.13	-12.39	14.04	-4.49	3.96
81.0	1106	1264	1444	-3.11	-12.53	14.22	-4.57	4.03
82.0	1070	1225	1402	-3.09	-12.67	14.40	-4.66	4.10
83.0	1036	1188	1361	-3.07	-12.80	14.58	-4.74	4.16
84.0	1003	1152	1322	-3.06	-12.93	14.75	-4.82	4.23
85.0	972	1118	1284	-3.04	-13.07	14.93	-4.91	4.30
86.0	941	1084	1248	-3.02	-13.20	15.10	-4.99	4.37
87.0	912	1052	1213	-3.01	-13.33	15.28	-5.08	4.43
88.0	884	1021	1179	-2.99	-13.46	15.45	-5.17	4.50
89.0	856	991	1146	-2.97	-13.59	15.62	-5.25	4.57
90.0	830	962	1114	-2.96	-13.72	15.79	-5.34	4.64
91.0	805	934	1083	-2.94	-13.84	15.96	-5.43	4.71
92.0	780	907	1053	-2.92	-13.97	16.13	-5.52	4.78
93.0	757	881	1025	-2.91	-14.09	16.30	-5.60	4.85
94.0	734	856	997	-2.89	-14.22	16.47	-5.69	4.91
95.0	712	831	970	-2.88	-14.34	16.64	-5.78	4.98
96.0	691	808	944	-2.86	-14.47	16.81	-5.87	5.05
97.0	671	785	918	-2.85	-14.59	16.97	-5.96	5.12
98.0	651	763	894	-2.83	-14.71	17.14	-6.05	5.20
99.0	632	742	870	-2.82	-14.83	17.31	-6.15	5.27
100.0	614	721	847	-2.80	-14.95	17.47	-6.24	5.34
101.0	596	702	825	-2.79	-15.07	17.63	-6.33	5.41
102.0	579	682	804	-2.77	-15.19	17.80	-6.42	5.48
103.0	562	664	783	-2.76	-15.30	17.96	-6.52	5.55
104.0	546	646	763	-2.74	-15.42	18.12	-6.61	5.62
105.0	531	628	743	-2.73	-15.53	18.28	-6.70	5.70
106.0	516	611	724	-2.71	-15.65	18.45	-6.80	5.77

107.0	501	595	706	-2.70	-15.76	18.61	-6.89	5.84
108.0	487	579	688	-2.68	-15.88	18.77	-6.99	5.91
109.0	474	564	671	-2.67	-15.99	18.92	-7.09	5.99
110.0	461	549	654	-2.66	-16.10	19.08	-7.18	6.06
111.0	448	535	638	-2.64	-16.21	19.24	-7.28	6.13
112.0	436	521	622	-2.63	-16.32	19.40	-7.38	6.21
113.0	424	507	607	-2.62	-16.43	19.56	-7.48	6.28
114.0	413	494	592	-2.60	-16.54	19.71	-7.58	6.36
115.0	402	482	577	-2.59	-16.65	19.87	-7.67	6.43
116.0	391	469	563	-2.58	-16.76	20.02	-7.77	6.51
117.0	380	458	550	-2.56	-16.86	20.18	-7.87	6.58
118.0	370	446	537	-2.55	-16.97	20.33	-7.98	6.66
119.0	361	435	524	-2.54	-17.08	20.48	-8.08	6.73
120.0	351	424	511	-2.52	-17.18	20.63	-8.18	6.81
121.0	342	413	499	-2.51	-17.28	20.79	-8.28	6.88
122.0	333	403	488	-2.50	-17.39	20.94	-8.38	6.96
123.0	324	393	476	-2.49	-17.49	21.09	-8.49	7.04
124.0	316	384	465	-2.47	-17.59	21.24	-8.59	7.11
125.0	308	374	454	-2.46	-17.69	21.39	-8.69	7.19

