

Approval

Manufacturer:

Customer:

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

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. : SMD03-202 F4100F

Customer's Part No. : _____

Specifications : R25 2,000 Ω ± 1 %

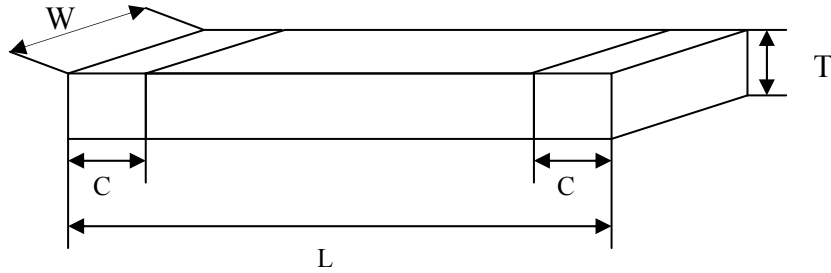
B25-85 4100 °K ± 1 %

Date : _____

Specification of SMD Chips Thermistor

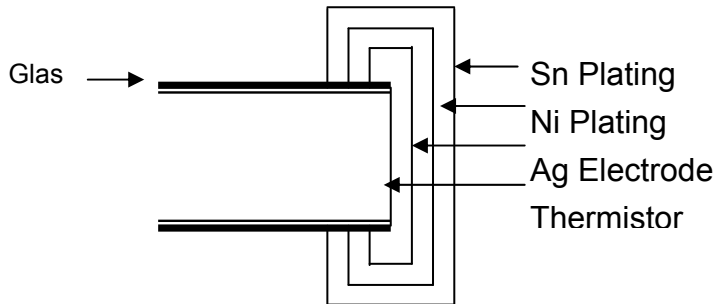
◆ **PART NO. : SMD03-202 F 4100 F**

◆ **CHIP DIMENSIONS**



Item	L(mm)	W(mm)	T(mm)	C(mm)
1608 (0603)	1.60 ±0.05	0.80 ±0.05	0.95 ±0.10	0.40±0.20

◆ **CHIP STRUCTURE**



◆ **ELECTRICAL CHARACTERISTICS**

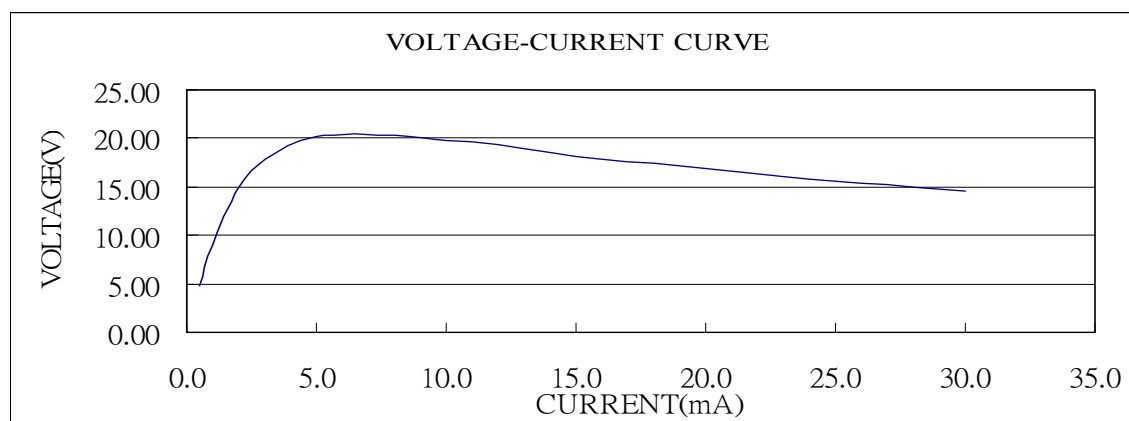
Style	Symbol	Condition	Specification
Resistance at 25°C	R ₂₅	T = 25 ± 0.1°C	2 K Ω ± 1 %
B Constant	B	25°C to 85°C	4100 °K ± 1 %
Thermal Time Constant	T	T = 25 ± 0.1°C	Approx. 5 sec
Thermal Dissipation Constant	C	T = 25 ± 0.1°C	Approx. 3.5 mW/°C
Maximum Power Rating*	P _w	T = 25 ± 0.1°C	350 mW
Operation Temp. Range	--	--	-40°C ~ 125°C

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

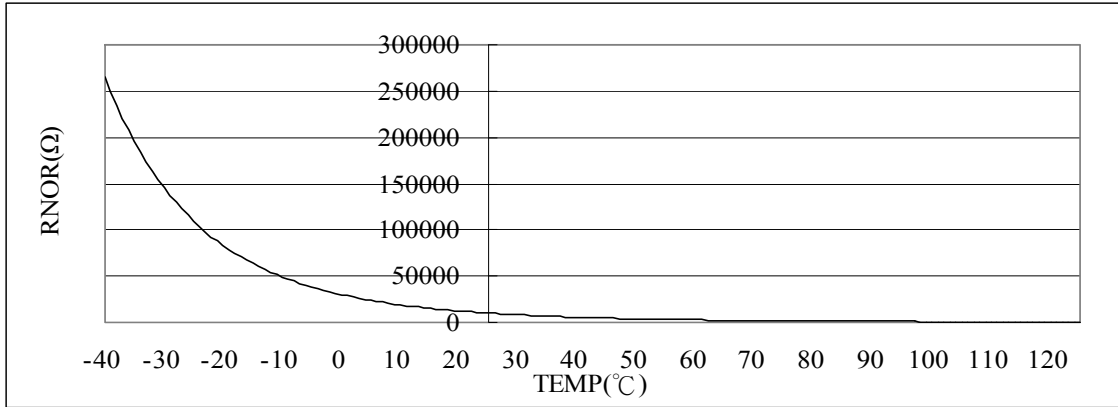
◆ RELIABILITY TEST

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

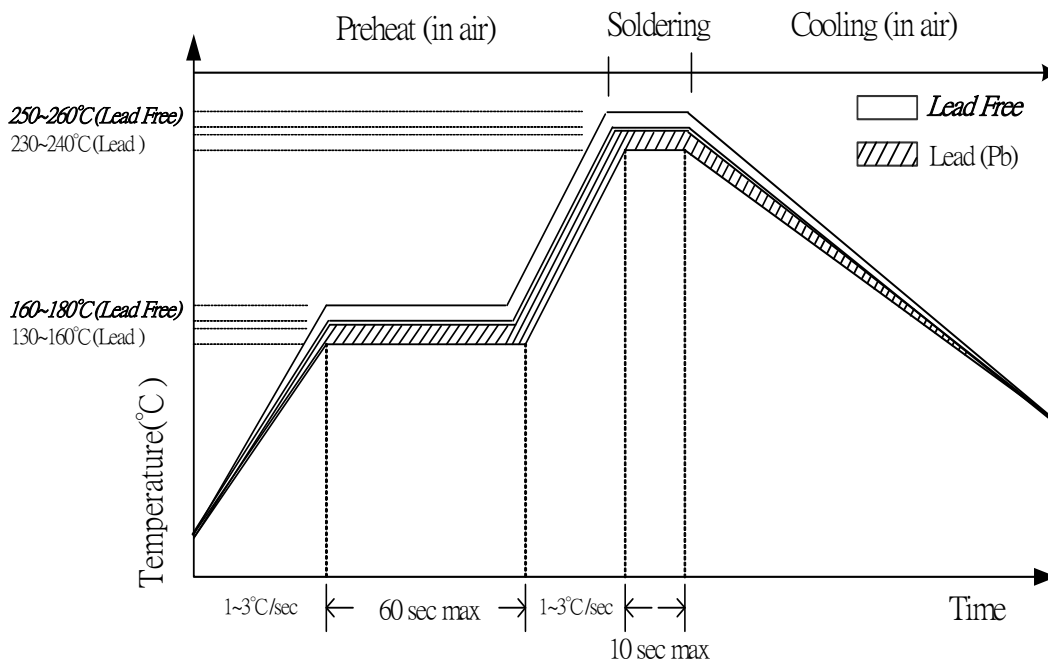
◆ VOLTAGE – CURRENT CURVE



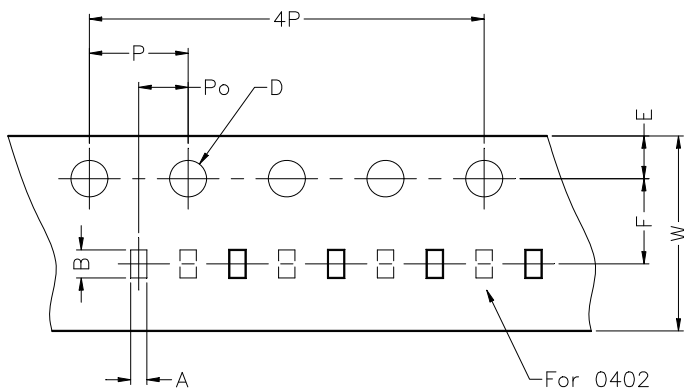
◆ RESISTANCE – TEMP CURVE



◆ REFLOW SOLDERING PROFILE



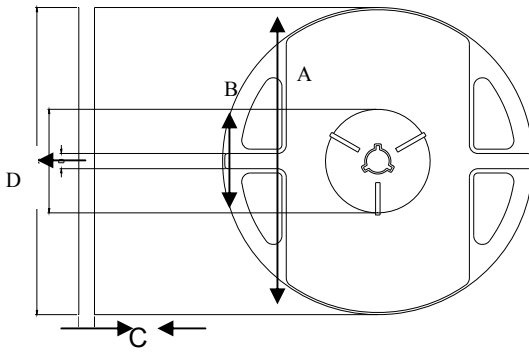
◆ TAPING DIMENSIONS



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
P ₀	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 03 202 F 4100 F
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 : 202 = $20 \times 10^2 = 2,000$ ohm
4. R Tolerance : F:±1% ; G:±2% ; H:±3% ; J:±5% ; K:±10%
5. B value : 2950, 3125, 3435 , 3550, 3700, 4100,etc.
6. B Tolerance : F:±1% ; G:±2% ; H:±3%

● ACCESSORY : RESISTANCE-TEMPERATURE CHARACTERISTICS

RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: **SMD03-202 F 4100 F**

R : 2,000 ohms ± 1%

B : 4100 °K ± 1%

Temperature (°C)	Resistance (Ω)			Temperature Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-40.0	88106	92474	97049	-7.54	-4.72	4.95	-0.66	0.63
-39.0	81793	85783	89960	-7.48	-4.65	4.87	-0.65	0.62
-38.0	75980	79627	83442	-7.41	-4.58	4.79	-0.65	0.62
-37.0	70624	73960	77446	-7.35	-4.51	4.71	-0.64	0.61
-36.0	65687	68739	71926	-7.29	-4.44	4.64	-0.64	0.61
-35.0	61131	63926	66841	-7.23	-4.37	4.56	-0.63	0.60
-34.0	56926	59485	62154	-7.17	-4.30	4.49	-0.63	0.60
-33.0	53042	55387	57830	-7.11	-4.23	4.41	-0.62	0.60
-32.0	49451	51601	53839	-7.05	-4.17	4.34	-0.62	0.59
-31.0	46131	48102	50153	-6.99	-4.10	4.26	-0.61	0.59
-30.0	43058	44867	46747	-6.93	-4.03	4.19	-0.60	0.58
-29.0	40212	41873	43598	-6.88	-3.97	4.12	-0.60	0.58
-28.0	37576	39100	40683	-6.82	-3.90	4.05	-0.59	0.57
-27.0	35131	36532	37985	-6.77	-3.83	3.98	-0.59	0.57
-26.0	32864	34151	35485	-6.71	-3.77	3.91	-0.58	0.56
-25.0	30759	31943	33169	-6.66	-3.71	3.84	-0.58	0.56
-24.0	28805	29893	31020	-6.60	-3.64	3.77	-0.57	0.55
-23.0	26988	27990	29026	-6.55	-3.58	3.70	-0.56	0.55
-22.0	25300	26222	27174	-6.50	-3.52	3.63	-0.56	0.54
-21.0	23729	24578	25454	-6.45	-3.45	3.57	-0.55	0.54
-20.0	22267	23049	23855	-6.40	-3.39	3.50	-0.55	0.53
-19.0	20906	21626	22368	-6.35	-3.33	3.43	-0.54	0.52
-18.0	19637	20301	20985	-6.30	-3.27	3.37	-0.53	0.52
-17.0	18455	19066	19696	-6.25	-3.21	3.30	-0.53	0.51
-16.0	17352	17916	18496	-6.20	-3.15	3.24	-0.52	0.51
-15.0	16323	16843	17378	-6.15	-3.09	3.18	-0.52	0.50
-14.0	15362	15841	16334	-6.10	-3.03	3.11	-0.51	0.50
-13.0	14464	14907	15361	-6.06	-2.97	3.05	-0.50	0.49
-12.0	13625	14034	14453	-6.01	-2.91	2.99	-0.50	0.48
-11.0	12841	13218	13605	-5.97	-2.85	2.93	-0.49	0.48

-10.0	12107	12455	12812	-5.92	-2.79	2.86	-0.48	0.47
-9.0	11421	11742	12071	-5.88	-2.74	2.80	-0.48	0.47
-8.0	10777	11074	11378	-5.83	-2.68	2.74	-0.47	0.46
-7.0	10175	10449	10730	-5.79	-2.62	2.68	-0.46	0.45
-6.0	9610	9864	10123	-5.74	-2.57	2.62	-0.46	0.45
-5.0	9081	9315	9554	-5.70	-2.51	2.57	-0.45	0.44
-4.0	8584	8801	9021	-5.66	-2.46	2.51	-0.44	0.43
-3.0	8118	8318	8522	-5.62	-2.40	2.45	-0.44	0.43
-2.0	7681	7865	8053	-5.58	-2.35	2.39	-0.43	0.42
-1.0	7270	7440	7614	-5.54	-2.29	2.34	-0.42	0.41
0.0	6883	7041	7201	-5.50	-2.24	2.28	-0.41	0.41
1.0	6520	6666	6814	-5.46	-2.18	2.22	-0.41	0.40
2.0	6179	6313	6450	-5.42	-2.13	2.17	-0.40	0.39
3.0	5857	5982	6108	-5.38	-2.08	2.11	-0.39	0.39
4.0	5555	5670	5786	-5.34	-2.03	2.06	-0.39	0.38
5.0	5270	5376	5484	-5.30	-1.97	2.00	-0.38	0.37
6.0	5001	5099	5199	-5.26	-1.92	1.95	-0.37	0.37
7.0	4748	4839	4931	-5.22	-1.87	1.90	-0.36	0.36
8.0	4510	4594	4678	-5.19	-1.82	1.84	-0.36	0.35
9.0	4285	4362	4440	-5.15	-1.77	1.79	-0.35	0.34
10.0	4073	4144	4216	-5.11	-1.72	1.74	-0.34	0.34
11.0	3872	3938	4004	-5.08	-1.67	1.69	-0.33	0.33
12.0	3683	3744	3805	-5.04	-1.62	1.64	-0.32	0.32
13.0	3504	3560	3617	-5.01	-1.57	1.58	-0.32	0.31
14.0	3335	3387	3439	-4.97	-1.52	1.53	-0.31	0.31
15.0	3176	3223	3271	-4.94	-1.47	1.48	-0.30	0.30
16.0	3025	3068	3112	-4.90	-1.42	1.43	-0.29	0.29
17.0	2882	2922	2963	-4.87	-1.37	1.38	-0.28	0.28
18.0	2747	2784	2821	-4.84	-1.33	1.33	-0.28	0.27
19.0	2619	2653	2687	-4.80	-1.28	1.29	-0.27	0.27
20.0	2498	2529	2560	-4.77	-1.23	1.24	-0.26	0.26
21.0	2383	2411	2440	-4.74	-1.18	1.19	-0.25	0.25
22.0	2274	2300	2326	-4.71	-1.14	1.14	-0.24	0.24
23.0	2171	2195	2219	-4.67	-1.09	1.09	-0.23	0.23
24.0	2073	2095	2117	-4.64	-1.05	1.05	-0.23	0.23
25.0	1980	2000	2020	-4.61	-1.00	1.00	-0.22	0.22
26.0	1890	1910	1930	-4.58	-1.05	1.05	-0.23	0.23
27.0	1805	1825	1845	-4.55	-1.09	1.09	-0.24	0.24
28.0	1724	1744	1764	-4.52	-1.14	1.14	-0.25	0.25

29.0	1647	1667	1687	-4.49	-1.18	1.18	-0.26	0.26
30.0	1575	1594	1614	-4.46	-1.22	1.23	-0.28	0.27
31.0	1505	1525	1544	-4.43	-1.27	1.27	-0.29	0.29
32.0	1440	1459	1478	-4.40	-1.31	1.32	-0.30	0.30
33.0	1377	1396	1415	-4.37	-1.36	1.36	-0.31	0.31
34.0	1318	1337	1356	-4.35	-1.40	1.41	-0.32	0.32
35.0	1262	1280	1299	-4.32	-1.44	1.45	-0.34	0.33
36.0	1208	1226	1244	-4.29	-1.48	1.50	-0.35	0.35
37.0	1157	1175	1193	-4.26	-1.53	1.54	-0.36	0.36
38.0	1108	1126	1144	-4.23	-1.57	1.58	-0.37	0.37
39.0	1062	1079	1097	-4.21	-1.61	1.62	-0.39	0.38
40.0	1018	1035	1052	-4.18	-1.65	1.67	-0.40	0.39
41.0	976	993	1010	-4.15	-1.69	1.71	-0.41	0.41
42.0	936	953	969	-4.13	-1.73	1.75	-0.42	0.42
43.0	898	914	931	-4.10	-1.77	1.79	-0.44	0.43
44.0	862	877	894	-4.08	-1.81	1.84	-0.45	0.44
45.0	827	843	858	-4.05	-1.85	1.88	-0.46	0.46
46.0	794	809	825	-4.03	-1.89	1.92	-0.48	0.47
47.0	762	777	793	-4.00	-1.93	1.96	-0.49	0.48
48.0	732	747	762	-3.98	-1.97	2.00	-0.50	0.50
49.0	704	718	733	-3.95	-2.01	2.04	-0.52	0.51
50.0	676	690	705	-3.93	-2.05	2.08	-0.53	0.52
51.0	650	664	678	-3.90	-2.09	2.12	-0.54	0.53
52.0	625	638	652	-3.88	-2.12	2.16	-0.56	0.55
53.0	601	614	628	-3.85	-2.16	2.20	-0.57	0.56
54.0	578	591	604	-3.83	-2.20	2.24	-0.58	0.57
55.0	556	569	582	-3.81	-2.24	2.28	-0.60	0.59
56.0	535	548	560	-3.78	-2.27	2.32	-0.61	0.60
57.0	515	527	540	-3.76	-2.31	2.36	-0.63	0.61
58.0	496	508	520	-3.74	-2.35	2.39	-0.64	0.63
59.0	478	489	501	-3.72	-2.38	2.43	-0.65	0.64
60.0	460	472	483	-3.69	-2.42	2.47	-0.67	0.66
61.0	443	455	466	-3.67	-2.46	2.51	-0.68	0.67
62.0	427	438	449	-3.65	-2.49	2.55	-0.70	0.68
63.0	412	423	433	-3.63	-2.53	2.58	-0.71	0.70
64.0	397	408	418	-3.61	-2.56	2.62	-0.73	0.71
65.0	383	393	404	-3.59	-2.60	2.66	-0.74	0.72
66.0	369	379	390	-3.56	-2.63	2.69	-0.76	0.74
67.0	356	366	376	-3.54	-2.67	2.73	-0.77	0.75

68.0	344	353	363	-3.52	-2.70	2.77	-0.79	0.77
69.0	332	341	351	-3.50	-2.74	2.80	-0.80	0.78
70.0	320	329	339	-3.48	-2.77	2.84	-0.82	0.80
71.0	309	318	327	-3.46	-2.80	2.87	-0.83	0.81
72.0	299	307	316	-3.44	-2.84	2.91	-0.85	0.82
73.0	289	297	306	-3.42	-2.87	2.94	-0.86	0.84
74.0	279	287	296	-3.40	-2.90	2.98	-0.88	0.85
75.0	269	278	286	-3.38	-2.94	3.01	-0.89	0.87
76.0	260	268	277	-3.36	-2.97	3.05	-0.91	0.88
77.0	252	259	267	-3.34	-3.00	3.08	-0.92	0.90
78.0	243	251	259	-3.33	-3.03	3.12	-0.94	0.91
79.0	235	243	250	-3.31	-3.07	3.15	-0.95	0.93
80.0	228	235	242	-3.29	-3.10	3.19	-0.97	0.94
81.0	220	227	235	-3.27	-3.13	3.22	-0.99	0.96
82.0	213	220	227	-3.25	-3.16	3.25	-1.00	0.97
83.0	206	213	220	-3.23	-3.19	3.29	-1.02	0.99
84.0	200	206	213	-3.21	-3.22	3.32	-1.03	1.00
85.0	193	200	206	-3.20	-3.25	3.35	-1.05	1.02
86.0	187	194	200	-3.18	-3.29	3.39	-1.07	1.03
87.0	181	187	194	-3.16	-3.32	3.42	-1.08	1.05
88.0	176	182	188	-3.14	-3.35	3.45	-1.10	1.06
89.0	170	176	182	-3.13	-3.38	3.48	-1.11	1.08
90.0	165	171	177	-3.11	-3.41	3.52	-1.13	1.10
91.0	160	165	171	-3.09	-3.44	3.55	-1.15	1.11
92.0	155	160	166	-3.07	-3.47	3.58	-1.16	1.13
93.0	150	156	161	-3.06	-3.50	3.61	-1.18	1.14
94.0	146	151	156	-3.04	-3.53	3.64	-1.20	1.16
95.0	141	146	152	-3.03	-3.56	3.68	-1.22	1.18
96.0	137	142	147	-3.01	-3.58	3.71	-1.23	1.19
97.0	133	138	143	-2.99	-3.61	3.74	-1.25	1.21
98.0	129	134	139	-2.98	-3.64	3.77	-1.27	1.22
99.0	125	130	135	-2.96	-3.67	3.80	-1.28	1.24
100.0	121	126	131	-2.94	-3.70	3.83	-1.30	1.26
101.0	118	122	127	-2.93	-3.73	3.86	-1.32	1.27
102.0	114	119	124	-2.91	-3.76	3.89	-1.34	1.29
103.0	111	116	120	-2.90	-3.78	3.92	-1.35	1.31
104.0	108	112	117	-2.88	-3.81	3.95	-1.37	1.32
105.0	105	109	113	-2.87	-3.84	3.98	-1.39	1.34
106.0	102	106	110	-2.85	-3.87	4.01	-1.41	1.36

107.0	99	103	107	-2.84	-3.89	4.04	-1.42	1.37
108.0	96	100	104	-2.82	-3.92	4.07	-1.44	1.39
109.0	93	97	101	-2.81	-3.95	4.10	-1.46	1.41
110.0	91	95	99	-2.79	-3.97	4.13	-1.48	1.42
111.0	88	92	96	-2.78	-4.00	4.16	-1.50	1.44
112.0	86	90	93	-2.76	-4.03	4.19	-1.51	1.46
113.0	84	87	91	-2.75	-4.05	4.22	-1.53	1.47
114.0	81	85	88	-2.74	-4.08	4.24	-1.55	1.49
115.0	79	82	86	-2.72	-4.11	4.27	-1.57	1.51
116.0	77	80	84	-2.71	-4.13	4.30	-1.59	1.53
117.0	75	78	81	-2.69	-4.16	4.33	-1.61	1.54
118.0	73	76	79	-2.68	-4.18	4.36	-1.63	1.56
119.0	71	74	77	-2.67	-4.21	4.38	-1.64	1.58
120.0	69	72	75	-2.65	-4.24	4.41	-1.66	1.60
121.0	67	70	73	-2.64	-4.26	4.44	-1.68	1.61
122.0	65	68	71	-2.63	-4.29	4.47	-1.70	1.63
123.0	64	67	70	-2.61	-4.31	4.49	-1.72	1.65
124.0	62	65	68	-2.60	-4.34	4.52	-1.74	1.67
125.0	60	63	66	-2.59	-4.36	4.55	-1.76	1.69

