

Approval

Manufacturer:

美隆電子有限公司

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. SMD 02-473 J 4050H

Customer's Part No. : _____

Specifications : R₂₅ 47K Ω ± 5 %

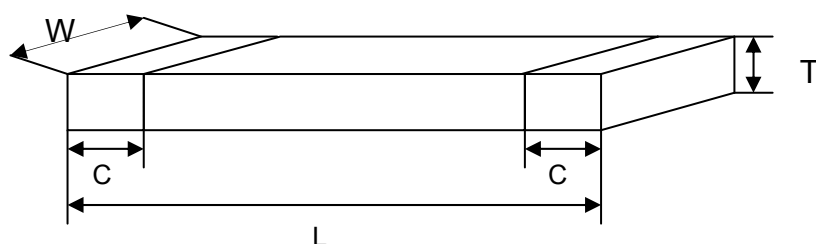
B₂₅₋₈₅ 4050 °K ± 3 %

Date : _____

Specification of SMD Chips Thermistor

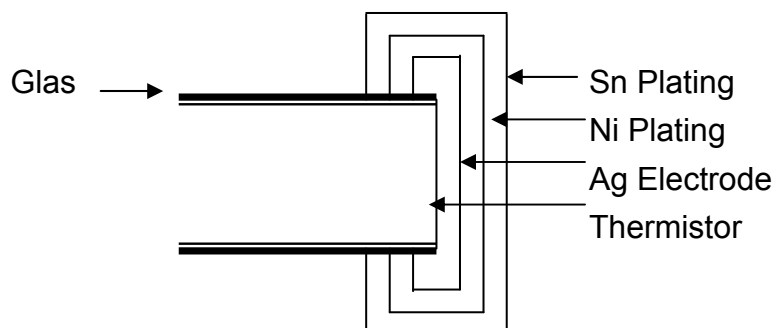
◆ PART NO. : SMD02-473 J 4050H

◆ CHIP DIMENSIONS



Item	L(mm)	W(mm)	T(mm)	C(mm)
1005 (0402)	1.00 ±0.05	0.50 ±0.05	0.50±0.05	0.25±0.10

◆ CHIP STRUCTURE



◆ ELECTRICAL CHARACTERISTICS

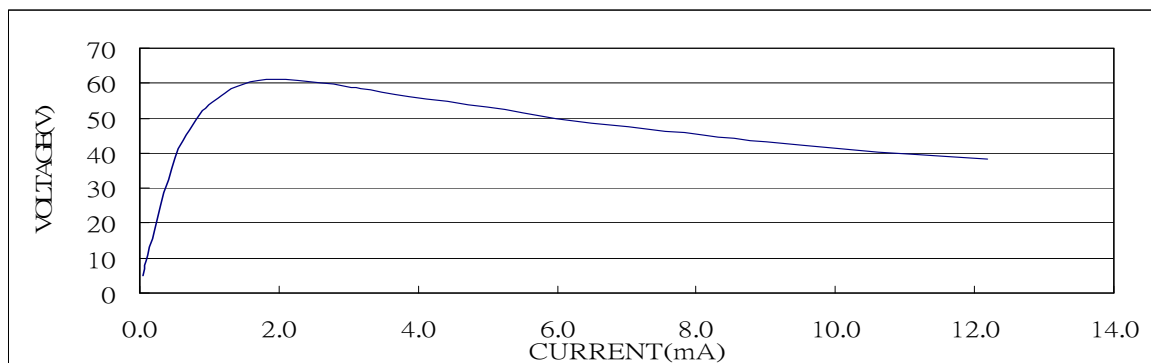
Style	Symbol	Condition	Specification
Resistance at 25°C	R ₂₅	T = 25 ± 0.1°C	47 K Ω ± 5 %
B Constant	B	25°C to 85°C	4050 °K ± 3 %
Thermal Time Constant	T	T = 25 ± 0.1°C	Approx. 7.5 sec
Thermal Dissipation Constant	C	T = 25 ± 0.1°C	Approx. 4 mW/°C
Maximum Power Rating*	P _w	T = 25 ± 0.1°C	400 mW
Operation Temp. Range	--	--	-40°C ~ 125°C

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

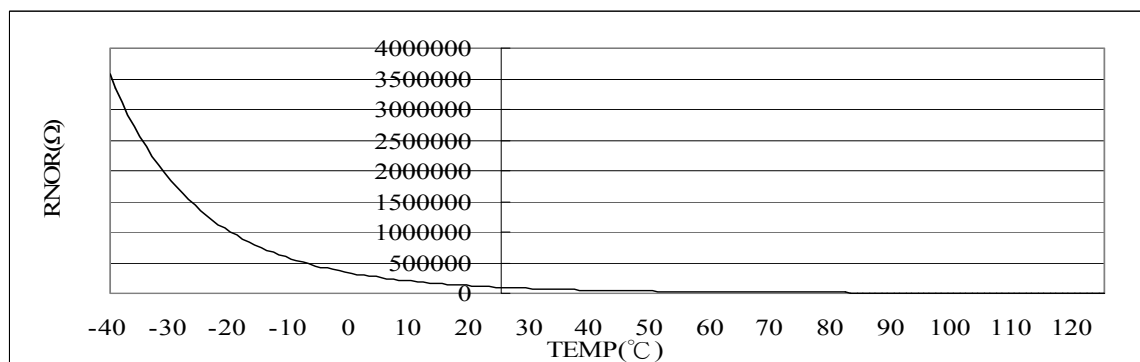
◆ RELIABILITY TEST

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

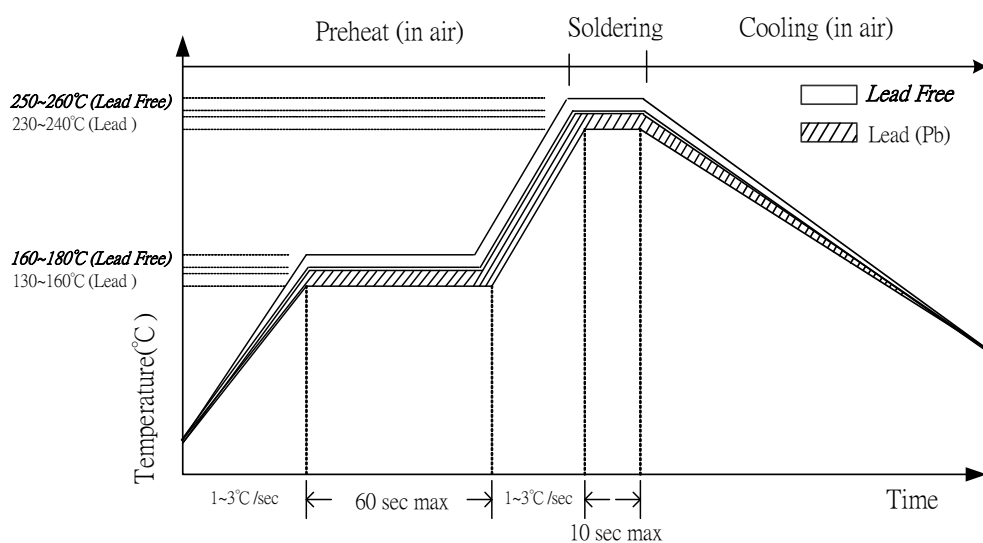
◆ VOLTAGE – CURRENT CURVE



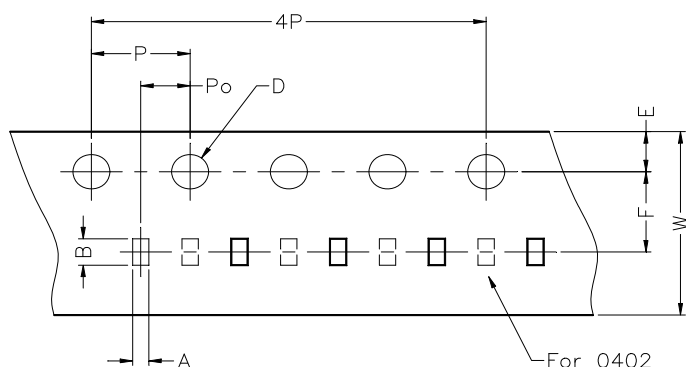
◆ RESISTANCE – TEMP CURVE



◆ REFLOW SOLDERING PROFILE



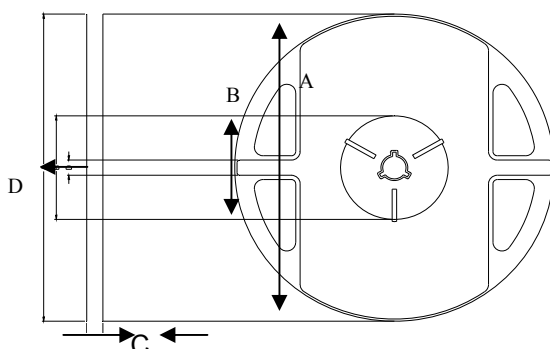
◆ TAPING DIMENSIONS



Unit: mm

Dimension	1206	0805	0603	0402
A	2.00 ± 0.05	1.50 ± 0.05	1.08 ± 0.05	0.66 ± 0.03
B	3.57 ± 0.05	2.30 ± 0.05	1.85 ± 0.05	1.15 ± 0.03
W	8.00 ± 0.02	8.00 ± 0.05	8.00 ± 0.05	8.00 ± 0.05
D	1.55 ± 0.05	1.50 ± 0.10	1.50 ± 0.10	1.50 ± 0.10
E	1.75 ± 0.10	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	3.50 ± 0.05
P	4.00 ± 0.10	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	2.00 ± 0.05
4P	16.00 ± 0.05	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 02 473 J 4050 H
 ① ② ③ ④ ⑤ ⑥

1. Series SINLOON SMD Thermistor. (TH - Lead (Pb) ; TF – Lead Free)
2. Dimension : 06 (1206) , 05 (0805) , 03 (0603) , 02 (0402)
3. Resistance : 474 = $47 \times 10^4 = 470,000$ ohm
4. R Tolerance : F:±1% ; G:±2% ; H:±3% ; J:±5% ; K:±10%
5. B value : 3215, 3250, 3435, 3700, 7970, 4050, 4100,.....etc.
6. B Tolerance : F:±1% ; G:±2% ; H:±3%

● ACCESSORY : RESISTANCE-TEMPERATURE CHARACTERISTICS

Resistance-Temperature Characteristics

Part No. : **SMD02-473 J 4050H**

R : 47,000 ohms ± 5%

B : 4050 °K ± 3%

Temperature (°C)	Resistance (Ω)			Temp. Coef.	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.	(%/°C)	MIN.	MAX.	MIN.	MAX.
-40	1451887	1702063	1990358	-6.91	-14.70	16.94	-2.45	2.13
-39	1358151	1588892	1854187	-6.85	-14.52	16.70	-2.44	2.12
-38	1271123	1484036	1728280	-6.80	-14.35	16.46	-2.42	2.11
-37	1190279	1386829	1611796	-6.75	-14.17	16.22	-2.40	2.10
-36	1115139	1296664	1503968	-6.70	-14.00	15.99	-2.39	2.09
-35	1045263	1212983	1404096	-6.65	-13.83	15.76	-2.37	2.08
-34	980247	1135278	1311540	-6.60	-13.66	15.53	-2.35	2.07
-33	919723	1063084	1225719	-6.55	-13.49	15.30	-2.34	2.06
-32	863350	995973	1146097	-6.50	-13.32	15.07	-2.32	2.05
-31	810817	933556	1072188	-6.45	-13.15	14.85	-2.30	2.04
-30	761838	875474	1003545	-6.40	-12.98	14.63	-2.29	2.03
-29	716149	821398	939759	-6.35	-12.81	14.41	-2.27	2.02
-28	673509	771025	880455	-6.31	-12.65	14.19	-2.25	2.01
-27	633694	724080	825290	-6.26	-12.48	13.98	-2.23	1.99
-26	596500	680307	773949	-6.21	-12.32	13.76	-2.22	1.98
-25	561737	639472	726143	-6.17	-12.16	13.55	-2.20	1.97
-24	529232	601358	681606	-6.12	-11.99	13.34	-2.18	1.96
-23	498823	565769	640095	-6.08	-11.83	13.14	-2.16	1.95
-22	470362	532520	601384	-6.03	-11.67	12.93	-2.14	1.93
-21	443712	501443	565268	-5.99	-11.51	12.73	-2.12	1.92
-20	418748	472383	531557	-5.95	-11.35	12.53	-2.11	1.91
-19	395351	445197	500075	-5.91	-11.20	12.33	-2.09	1.90
-18	373414	419752	470662	-5.86	-11.04	12.13	-2.07	1.88
-17	352836	395927	443169	-5.82	-10.88	11.93	-2.05	1.87
-16	333526	373607	417459	-5.78	-10.73	11.74	-2.03	1.86
-15	315397	352689	393405	-5.74	-10.57	11.54	-2.01	1.84
-14	298370	333077	370892	-5.70	-10.42	11.35	-1.99	1.83
-13	282371	314680	349810	-5.66	-10.27	11.16	-1.97	1.81

-12	267332	297417	330060	-5.62	-10.12	10.98	-1.95	1.80
-11	253190	281210	311550	-5.58	-9.96	10.79	-1.93	1.78
-10	239886	265989	294195	-5.55	-9.81	10.60	-1.91	1.77
-9	227364	251688	277916	-5.51	-9.66	10.42	-1.89	1.75
-8	215576	238245	262640	-5.47	-9.52	10.24	-1.87	1.74
-7	204472	225605	248299	-5.43	-9.37	10.06	-1.85	1.72
-6	194010	213714	234831	-5.40	-9.22	9.88	-1.83	1.71
-5	184149	202524	222176	-5.36	-9.07	9.70	-1.81	1.69
-4	174850	191989	210282	-5.32	-8.93	9.53	-1.79	1.68
-3	166078	182068	199098	-5.29	-8.78	9.35	-1.77	1.66
-2	157801	172720	188577	-5.25	-8.64	9.18	-1.75	1.64
-1	149987	163910	178677	-5.22	-8.49	9.01	-1.73	1.63
0	142608	155603	169357	-5.18	-8.35	8.84	-1.71	1.61
1	135637	147767	160580	-5.15	-8.21	8.67	-1.68	1.59
2	129049	140374	152311	-5.12	-8.07	8.50	-1.66	1.58
3	122822	133396	144518	-5.08	-7.93	8.34	-1.64	1.56
4	116932	126807	137171	-5.05	-7.79	8.17	-1.62	1.54
5	111361	120583	130242	-5.02	-7.65	8.01	-1.60	1.52
6	106088	114701	123704	-4.98	-7.51	7.85	-1.57	1.51
7	101097	109142	117533	-4.95	-7.37	7.69	-1.55	1.49
8	96371	103886	111707	-4.92	-7.23	7.53	-1.53	1.47
9	91894	98914	106204	-4.89	-7.10	7.37	-1.51	1.45
10	87651	94209	101005	-4.86	-6.96	7.21	-1.49	1.43
11	83630	89756	96091	-4.83	-6.83	7.06	-1.46	1.41
12	79816	85540	91445	-4.80	-6.69	6.90	-1.44	1.40
13	76199	81547	87051	-4.77	-6.56	6.75	-1.42	1.38
14	72768	77763	82894	-4.74	-6.42	6.60	-1.39	1.36
15	69510	74177	78960	-4.71	-6.29	6.45	-1.37	1.34
16	66418	70778	75235	-4.68	-6.16	6.30	-1.35	1.32
17	63481	67554	71708	-4.65	-6.03	6.15	-1.32	1.30
18	60692	64495	68366	-4.62	-5.90	6.00	-1.30	1.28
19	58041	61593	65199	-4.59	-5.77	5.86	-1.28	1.26
20	55521	58838	62197	-4.56	-5.64	5.71	-1.25	1.24
21	53124	56222	59351	-4.53	-5.51	5.57	-1.23	1.22
22	50846	53737	56651	-4.51	-5.38	5.42	-1.20	1.19
23	48677	51376	54090	-4.48	-5.25	5.28	-1.18	1.17
24	46614	49133	51658	-4.45	-5.13	5.14	-1.15	1.15
25	44650	47000	49350	-4.42	-5.00	5.00	-1.13	1.13

26	42667	44972	47283	-4.40	-5.13	5.14	-1.17	1.17
27	40783	43043	45314	-4.37	-5.25	5.28	-1.21	1.20
28	38992	41207	43438	-4.35	-5.37	5.42	-1.25	1.24
29	37291	39460	41651	-4.32	-5.50	5.55	-1.29	1.27
30	35673	37797	39947	-4.29	-5.62	5.69	-1.32	1.31
31	34134	36213	38322	-4.27	-5.74	5.82	-1.36	1.34
32	32670	34704	36773	-4.24	-5.86	5.96	-1.40	1.38
33	31278	33267	35294	-4.22	-5.98	6.09	-1.44	1.42
34	29952	31897	33883	-4.19	-6.10	6.23	-1.49	1.45
35	28689	30591	32537	-4.17	-6.22	6.36	-1.53	1.49
36	27487	29346	31251	-4.14	-6.33	6.49	-1.57	1.53
37	26342	28158	30024	-4.12	-6.45	6.63	-1.61	1.57
38	25251	27025	28851	-4.10	-6.56	6.76	-1.65	1.60
39	24211	25943	27730	-4.07	-6.68	6.89	-1.69	1.64
40	23219	24911	26659	-4.05	-6.79	7.02	-1.73	1.68
41	22273	23925	25636	-4.03	-6.90	7.15	-1.78	1.72
42	21371	22984	24657	-4.00	-7.02	7.28	-1.82	1.75
43	20511	22085	23720	-3.98	-7.13	7.41	-1.86	1.79
44	19689	21226	22825	-3.96	-7.24	7.53	-1.90	1.83
45	18905	20405	21968	-3.93	-7.35	7.66	-1.95	1.87
46	18156	19620	21148	-3.91	-7.46	7.79	-1.99	1.91
47	17441	18869	20362	-3.89	-7.57	7.91	-2.03	1.95
48	16758	18151	19611	-3.87	-7.67	8.04	-2.08	1.98
49	16106	17464	18890	-3.85	-7.78	8.17	-2.12	2.02
50	15482	16807	18201	-3.82	-7.89	8.29	-2.17	2.06
51	14885	16178	17540	-3.80	-7.99	8.41	-2.21	2.10
52	14315	15576	16906	-3.78	-8.10	8.54	-2.26	2.14
53	13770	15000	16299	-3.76	-8.20	8.66	-2.30	2.18
54	13248	14448	15716	-3.74	-8.30	8.78	-2.35	2.22
55	12749	13919	15158	-3.72	-8.41	8.90	-2.39	2.26
56	12271	13412	14622	-3.70	-8.51	9.03	-2.44	2.30
57	11813	12926	14108	-3.68	-8.61	9.15	-2.49	2.34
58	11375	12460	13615	-3.66	-8.71	9.27	-2.53	2.38
59	10956	12014	13142	-3.64	-8.81	9.39	-2.58	2.42
60	10554	11586	12687	-3.62	-8.91	9.51	-2.63	2.46
61	10169	11175	12251	-3.60	-9.01	9.62	-2.67	2.50
62	9799	10781	11831	-3.58	-9.10	9.74	-2.72	2.54
63	9446	10403	11429	-3.56	-9.20	9.86	-2.77	2.58

64	9106	10040	11042	-3.54	-9.30	9.98	-2.82	2.63
65	8781	9692	10670	-3.52	-9.39	10.09	-2.87	2.67
66	8469	9357	10312	-3.50	-9.49	10.21	-2.91	2.71
67	8170	9036	9969	-3.49	-9.59	10.32	-2.96	2.75
68	7882	8727	9638	-3.47	-9.68	10.44	-3.01	2.79
69	7607	8430	9320	-3.45	-9.77	10.55	-3.06	2.83
70	7342	8145	9014	-3.43	-9.87	10.67	-3.11	2.88
71	7088	7872	8720	-3.41	-9.96	10.78	-3.16	2.92
72	6844	7608	8437	-3.39	-10.05	10.90	-3.21	2.96
73	6609	7355	8165	-3.38	-10.14	11.01	-3.26	3.00
74	6384	7111	7902	-3.36	-10.23	11.12	-3.31	3.05
75	6167	6877	7650	-3.34	-10.32	11.23	-3.36	3.09
76	5959	6652	7406	-3.32	-10.41	11.34	-3.41	3.13
77	5759	6435	7172	-3.31	-10.50	11.45	-3.46	3.18
78	5567	6226	6946	-3.29	-10.59	11.56	-3.52	3.22
79	5382	6025	6729	-3.27	-10.68	11.67	-3.57	3.26
80	5204	5832	6519	-3.26	-10.77	11.78	-3.62	3.31
81	5033	5645	6317	-3.24	-10.85	11.89	-3.67	3.35
82	4868	5466	6122	-3.22	-10.94	12.00	-3.72	3.39
83	4709	5293	5934	-3.21	-11.02	12.11	-3.78	3.44
84	4557	5126	5753	-3.19	-11.11	12.22	-3.83	3.48
85	4410	4966	5578	-3.17	-11.19	12.32	-3.88	3.53
86	4269	4811	5409	-3.16	-11.28	12.43	-3.94	3.57
87	4132	4662	5246	-3.14	-11.36	12.54	-3.99	3.62
88	4001	4518	5089	-3.13	-11.45	12.64	-4.04	3.66
89	3875	4379	4938	-3.11	-11.53	12.75	-4.10	3.71
90	3753	4246	4791	-3.09	-11.61	12.85	-4.15	3.75
91	3635	4117	4650	-3.08	-11.69	12.96	-4.21	3.80
92	3522	3992	4514	-3.06	-11.77	13.06	-4.26	3.84
93	3413	3872	4382	-3.05	-11.85	13.17	-4.32	3.89
94	3308	3756	4254	-3.03	-11.94	13.27	-4.37	3.93
95	3206	3644	4131	-3.02	-12.02	13.37	-4.43	3.98
96	3108	3536	4012	-3.00	-12.09	13.47	-4.49	4.03
97	3014	3432	3897	-2.99	-12.17	13.58	-4.54	4.07
98	2923	3331	3786	-2.97	-12.25	13.68	-4.60	4.12
99	2835	3233	3679	-2.96	-12.33	13.78	-4.66	4.17
100	2750	3139	3575	-2.95	-12.41	13.88	-4.71	4.21
101	2668	3048	3475	-2.93	-12.48	13.98	-4.77	4.26

102	2589	2961	3378	-2.92	-12.56	14.08	-4.83	4.31
103	2512	2876	3284	-2.90	-12.64	14.18	-4.89	4.35
104	2438	2794	3193	-2.89	-12.71	14.28	-4.94	4.40
105	2367	2714	3105	-2.87	-12.79	14.38	-5.00	4.45
106	2298	2638	3019	-2.86	-12.86	14.48	-5.06	4.50
107	2232	2563	2937	-2.85	-12.94	14.57	-5.12	4.54
108	2167	2492	2857	-2.83	-13.01	14.67	-5.18	4.59
109	2105	2422	2780	-2.82	-13.09	14.77	-5.24	4.64
110	2045	2355	2705	-2.81	-13.16	14.87	-5.30	4.69
111	1987	2290	2633	-2.79	-13.23	14.96	-5.36	4.74
112	1931	2227	2562	-2.78	-13.31	15.06	-5.42	4.79
113	1876	2166	2494	-2.77	-13.38	15.15	-5.48	4.83
114	1824	2107	2428	-2.75	-13.45	15.25	-5.54	4.88
115	1773	2050	2365	-2.74	-13.52	15.35	-5.60	4.93
116	1724	1995	2303	-2.73	-13.59	15.44	-5.66	4.98
117	1676	1941	2243	-2.72	-13.66	15.53	-5.72	5.03
118	1630	1889	2185	-2.70	-13.73	15.63	-5.78	5.08
119	1585	1839	2128	-2.69	-13.80	15.72	-5.84	5.13
120	1542	1790	2073	-2.68	-13.87	15.81	-5.91	5.18
121	1500	1743	2020	-2.67	-13.94	15.91	-5.97	5.23
122	1460	1697	1969	-2.65	-14.01	16.00	-6.03	5.28
123	1420	1653	1919	-2.64	-14.08	16.09	-6.09	5.33
124	1382	1610	1871	-2.63	-14.14	16.18	-6.16	5.38
125	1345	1568	1824	-2.62	-14.21	16.28	-6.22	5.43