

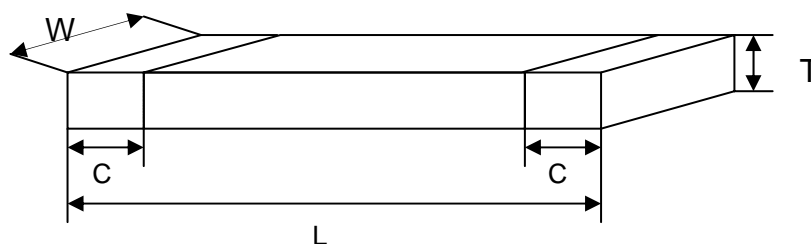
## Specification of SMD Chips Thermistor

◆ **PART NO. : SMD05-223 H 3900 F**

R25 22,000 Ω ± 3 %

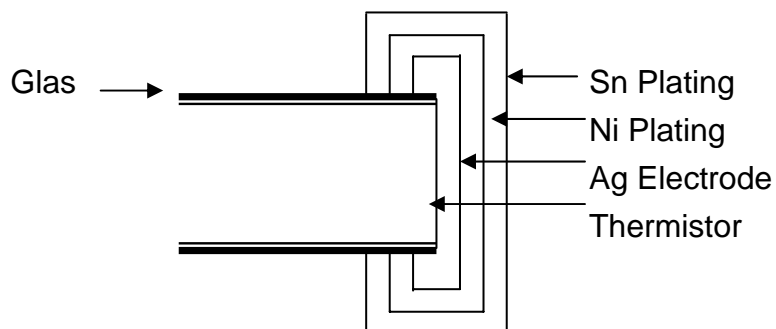
B25-85 3900 °K ± 1 %

◆ **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**

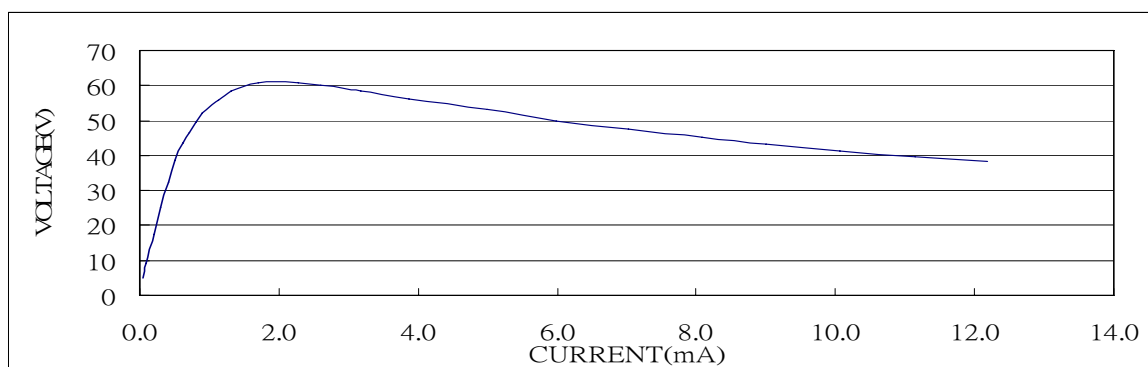
Style	Symbol	Condition	Specification
Resistance at 25°C	R25	T = 25 ± 0.1°C	100K Ω ± 3 %
B Constant	B	25°C to 85°C	4000 °K ± 1 %
Thermal Time Constant	T	T = 25 ± 0.1°C	Approx. 7.5 sec
Thermal Dissipation Constant	C	T = 25 ± 0.1°C	Approx. 4 mW/°C
Maximum Power Rating*	Pw	T = 25 ± 0.1°C	400 mW
Operation Temp. Range	--	--	-40°C ~ 125°C

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

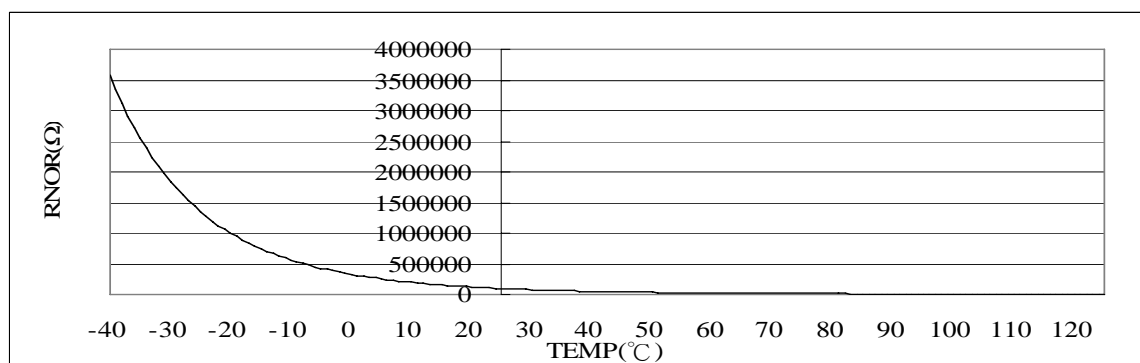
◆ RELIABILITY TEST

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 %
Solder ability	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

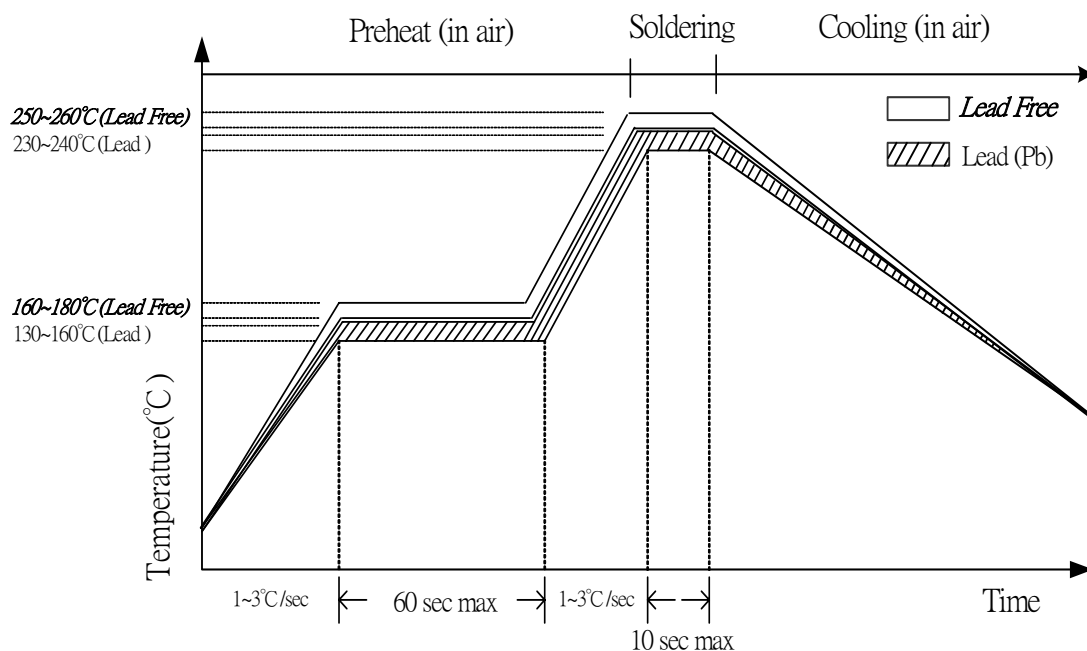
◆ VOLTAGE – CURRENT CURVE



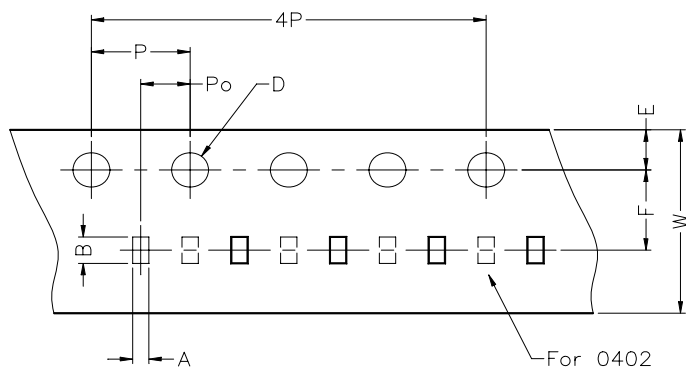
◆ RESISTANCE – TEMP CURVE



### ◆ REFLOW SOLDERING PROFILE



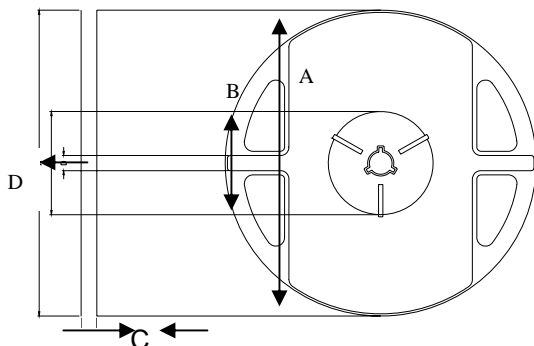
### ◆ TAPING DIMENSIONS



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    05    223    H    3900    F  
 ①        ②        ③        ④        ⑤        ⑥

1. Series SINLOON SMD Thermistor. (Lead Free )
2. Dimension : 06 ( 1206 ) , 05 ( 0805 ) , 03 ( 0603 ) , 02 ( 0402 )
3. Resistance : 104 =  $10 \times 10^4 = 100,000$  ohm
4. R Tolerance : F:±1% ; G:±2% ; H:±3% ; J:±5% ; K:±10%
5. B value : 3215, 3435, 3700, 7970, 4000, 4100,.....etc.
6. B Tolerance : F:±1% ; G:±2% ; H:±3%

● ACCESSORY : RESISTANCE-TEMPERATURE CHARACTERISTICS

## Resistance-Temperature Characteristics

Part No. : **SMD05-223 H 3900F**

**R : 22,000 ohms ± 3%**

**B : 3900 °K ± 1%**

Temperature (°C)	Resistance (Ω)			Temp. Coef. (%/°C)	Resist. Tolerance (%)		Temp. Tolerance (°C)	
	MIN.	CENTER	MAX.		MIN.	MAX.	MIN.	MAX.
-40	671817	717152	764857	-6.67	-6.32	6.65	-1.00	0.95
-39	629023	671023	715184	-6.62	-6.26	6.58	-0.99	0.95
-38	589245	628176	669075	-6.57	-6.20	6.51	-0.99	0.94
-37	552254	588354	626251	-6.52	-6.14	6.44	-0.99	0.94
-36	517834	551327	586457	-6.48	-6.07	6.37	-0.98	0.94
-35	485793	516879	549460	-6.43	-6.01	6.30	-0.98	0.94
-34	455949	484815	515044	-6.38	-5.95	6.24	-0.98	0.93
-33	428138	454954	483015	-6.33	-5.89	6.17	-0.97	0.93
-32	402210	427132	453191	-6.29	-5.83	6.10	-0.97	0.93
-31	378024	401197	425406	-6.24	-5.78	6.03	-0.97	0.93
-30	355454	377008	399509	-6.20	-5.72	5.97	-0.96	0.92
-29	334380	354437	375360	-6.15	-5.66	5.90	-0.96	0.92
-28	314694	333367	352829	-6.11	-5.60	5.84	-0.96	0.92
-27	296297	313687	331798	-6.06	-5.54	5.77	-0.95	0.91
-26	279096	295298	312159	-6.02	-5.49	5.71	-0.95	0.91
-25	263006	278106	293810	-5.98	-5.43	5.65	-0.94	0.91
-24	247948	262028	276658	-5.93	-5.37	5.58	-0.94	0.91
-23	233849	246983	260619	-5.89	-5.32	5.52	-0.94	0.90
-22	220644	232899	245614	-5.85	-5.26	5.46	-0.93	0.90
-21	208270	219709	231569	-5.81	-5.21	5.40	-0.93	0.90
-20	196669	207351	218417	-5.77	-5.15	5.34	-0.93	0.89
-19	185788	195767	206096	-5.73	-5.10	5.28	-0.92	0.89
-18	175579	184904	194549	-5.69	-5.04	5.22	-0.92	0.89
-17	165996	174713	183722	-5.65	-4.99	5.16	-0.91	0.88
-16	156997	165148	173567	-5.61	-4.94	5.10	-0.91	0.88
-15	148543	156168	164036	-5.57	-4.88	5.04	-0.90	0.88
-14	140597	147732	155090	-5.53	-4.83	4.98	-0.90	0.87
-13	133126	139805	146687	-5.50	-4.78	4.92	-0.90	0.87
-12	126099	132353	138792	-5.46	-4.73	4.86	-0.89	0.87

-11	119487	125345	131371	-5.42	-4.67	4.81	-0.89	0.86
-10	113263	118751	124394	-5.39	-4.62	4.75	-0.88	0.86
-9	107402	112546	117830	-5.35	-4.57	4.70	-0.88	0.85
-8	101880	106703	111653	-5.31	-4.52	4.64	-0.87	0.85
-7	96677	101199	105838	-5.28	-4.47	4.58	-0.87	0.85
-6	91771	96013	100362	-5.24	-4.42	4.53	-0.86	0.84
-5	87144	91125	95202	-5.21	-4.37	4.47	-0.86	0.84
-4	82779	86515	90339	-5.17	-4.32	4.42	-0.85	0.83
-3	78659	82167	85755	-5.14	-4.27	4.37	-0.85	0.83
-2	74769	78064	81431	-5.11	-4.22	4.31	-0.84	0.83
-1	71095	74190	77351	-5.07	-4.17	4.26	-0.84	0.82
0	67624	70533	73500	-5.04	-4.12	4.21	-0.83	0.82
1	64343	67077	69864	-5.01	-4.08	4.15	-0.83	0.81
2	61242	63812	66430	-4.97	-4.03	4.10	-0.82	0.81
3	58308	60725	63185	-4.94	-3.98	4.05	-0.82	0.81
4	55532	57806	60118	-4.91	-3.93	4.00	-0.81	0.80
5	52905	55044	57218	-4.88	-3.89	3.95	-0.81	0.80
6	50418	52431	54475	-4.85	-3.84	3.90	-0.80	0.79
7	48063	49958	51880	-4.82	-3.79	3.85	-0.80	0.79
8	45832	47615	49424	-4.79	-3.75	3.80	-0.79	0.78
9	43717	45397	47098	-4.76	-3.70	3.75	-0.79	0.78
10	41712	43294	44896	-4.73	-3.65	3.70	-0.78	0.77
11	39811	41302	42810	-4.70	-3.61	3.65	-0.78	0.77
12	38008	39413	40832	-4.67	-3.56	3.60	-0.77	0.76
13	36297	37621	38958	-4.64	-3.52	3.55	-0.77	0.76
14	34673	35921	37180	-4.61	-3.47	3.51	-0.76	0.75
15	33131	34307	35494	-4.58	-3.43	3.46	-0.76	0.75
16	31666	32776	33894	-4.55	-3.39	3.41	-0.75	0.74
17	30275	31322	32375	-4.52	-3.34	3.36	-0.74	0.74
18	28953	29940	30934	-4.50	-3.30	3.32	-0.74	0.73
19	27696	28628	29564	-4.47	-3.26	3.27	-0.73	0.73
20	26501	27380	28263	-4.44	-3.21	3.23	-0.73	0.72
21	25364	26194	27027	-4.42	-3.17	3.18	-0.72	0.72
22	24282	25066	25852	-4.39	-3.13	3.13	-0.71	0.71
23	23253	23993	24734	-4.36	-3.08	3.09	-0.71	0.71
24	22273	22972	23671	-4.34	-3.04	3.04	-0.70	0.70
25	21340	22000	22660	-4.31	-3.00	3.00	-0.70	0.70
26	20434	21075	21716	-4.28	-3.04	3.04	-0.71	0.71
27	19571	20194	20817	-4.26	-3.08	3.09	-0.73	0.72

28	18750	19354	19960	-4.23	-3.12	3.13	-0.74	0.74
29	17967	18554	19144	-4.21	-3.17	3.18	-0.75	0.75
30	17222	17792	18365	-4.18	-3.21	3.22	-0.77	0.77
31	16511	17065	17622	-4.16	-3.25	3.26	-0.78	0.78
32	15834	16372	16913	-4.13	-3.29	3.30	-0.80	0.79
33	15188	15711	16237	-4.11	-3.33	3.35	-0.81	0.81
34	14573	15080	15591	-4.09	-3.37	3.39	-0.83	0.82
35	13985	14478	14975	-4.06	-3.40	3.43	-0.84	0.84
36	13425	13904	14387	-4.04	-3.44	3.47	-0.86	0.85
37	12890	13355	13824	-4.02	-3.48	3.52	-0.88	0.87
38	12379	12831	13287	-3.99	-3.52	3.56	-0.89	0.88
39	11891	12330	12774	-3.97	-3.56	3.60	-0.91	0.90
40	11425	11852	12283	-3.95	-3.60	3.64	-0.92	0.91
41	10980	11394	11814	-3.92	-3.64	3.68	-0.94	0.93
42	10555	10957	11365	-3.90	-3.67	3.72	-0.95	0.94
43	10148	10539	10935	-3.88	-3.71	3.76	-0.97	0.96
44	9759	10139	10525	-3.86	-3.75	3.80	-0.99	0.97
45	9387	9757	10131	-3.84	-3.79	3.84	-1.00	0.99
46	9032	9391	9755	-3.81	-3.82	3.88	-1.02	1.00
47	8691	9040	9395	-3.79	-3.86	3.92	-1.03	1.02
48	8366	8705	9049	-3.77	-3.90	3.96	-1.05	1.03
49	8054	8383	8719	-3.75	-3.93	4.00	-1.07	1.05
50	7755	8076	8402	-3.73	-3.97	4.04	-1.08	1.06
51	7469	7781	8098	-3.71	-4.00	4.08	-1.10	1.08
52	7196	7498	7807	-3.69	-4.04	4.11	-1.12	1.10
53	6933	7228	7528	-3.67	-4.07	4.15	-1.13	1.11
54	6682	6968	7260	-3.65	-4.11	4.19	-1.15	1.13
55	6441	6719	7003	-3.63	-4.14	4.23	-1.17	1.14
56	6210	6481	6757	-3.61	-4.18	4.27	-1.18	1.16
57	5988	6252	6521	-3.59	-4.21	4.30	-1.20	1.17
58	5776	6032	6294	-3.57	-4.25	4.34	-1.22	1.19
59	5572	5821	6076	-3.55	-4.28	4.38	-1.23	1.21
60	5376	5619	5867	-3.53	-4.32	4.42	-1.25	1.22
61	5188	5424	5666	-3.51	-4.35	4.45	-1.27	1.24
62	5008	5238	5473	-3.49	-4.38	4.49	-1.29	1.26
63	4835	5058	5287	-3.47	-4.42	4.53	-1.30	1.27
64	4669	4886	5109	-3.45	-4.45	4.56	-1.32	1.29
65	4509	4721	4938	-3.44	-4.48	4.60	-1.34	1.30
66	4356	4562	4773	-3.42	-4.51	4.63	-1.36	1.32

67	4208	4409	4615	-3.40	-4.55	4.67	-1.37	1.34
68	4067	4262	4462	-3.38	-4.58	4.70	-1.39	1.35
69	3931	4121	4316	-3.36	-4.61	4.74	-1.41	1.37
70	3800	3985	4175	-3.35	-4.64	4.77	-1.43	1.39
71	3674	3854	4039	-3.33	-4.68	4.81	-1.45	1.40
72	3553	3728	3909	-3.31	-4.71	4.84	-1.46	1.42
73	3436	3607	3783	-3.29	-4.74	4.88	-1.48	1.44
74	3324	3490	3662	-3.28	-4.77	4.91	-1.50	1.46
75	3216	3378	3545	-3.26	-4.80	4.95	-1.52	1.47
76	3112	3270	3433	-3.24	-4.83	4.98	-1.54	1.49
77	3012	3166	3325	-3.23	-4.86	5.02	-1.56	1.51
78	2916	3066	3221	-3.21	-4.89	5.05	-1.57	1.52
79	2823	2969	3120	-3.19	-4.92	5.08	-1.59	1.54
80	2734	2876	3023	-3.18	-4.95	5.12	-1.61	1.56
81	2648	2786	2930	-3.16	-4.98	5.15	-1.63	1.58
82	2565	2700	2840	-3.14	-5.01	5.18	-1.65	1.59
83	2485	2617	2753	-3.13	-5.04	5.22	-1.67	1.61
84	2408	2536	2669	-3.11	-5.07	5.25	-1.69	1.63
85	2333	2459	2589	-3.10	-5.10	5.28	-1.71	1.65
86	2262	2384	2511	-3.08	-5.13	5.31	-1.73	1.67
87	2193	2312	2436	-3.06	-5.16	5.35	-1.74	1.68
88	2126	2242	2363	-3.05	-5.19	5.38	-1.76	1.70
89	2062	2175	2293	-3.03	-5.22	5.41	-1.78	1.72
90	2000	2110	2225	-3.02	-5.25	5.44	-1.80	1.74
91	1940	2048	2160	-3.00	-5.28	5.47	-1.82	1.76
92	1882	1987	2097	-2.99	-5.30	5.51	-1.84	1.77
93	1826	1929	2036	-2.97	-5.33	5.54	-1.86	1.79
94	1772	1872	1977	-2.96	-5.36	5.57	-1.88	1.81
95	1720	1818	1920	-2.94	-5.39	5.60	-1.90	1.83
96	1670	1765	1865	-2.93	-5.42	5.63	-1.92	1.85
97	1621	1714	1812	-2.92	-5.44	5.66	-1.94	1.87
98	1574	1665	1760	-2.90	-5.47	5.69	-1.96	1.89
99	1529	1618	1710	-2.89	-5.50	5.72	-1.98	1.90
100	1485	1572	1662	-2.87	-5.53	5.75	-2.00	1.92
101	1443	1527	1616	-2.86	-5.55	5.78	-2.02	1.94
102	1402	1485	1571	-2.85	-5.58	5.81	-2.04	1.96
103	1362	1443	1527	-2.83	-5.61	5.84	-2.06	1.98
104	1324	1403	1485	-2.82	-5.63	5.87	-2.08	2.00
105	1287	1364	1444	-2.80	-5.66	5.90	-2.11	2.02

<b>106</b>	1251	1326	1405	-2.79	-5.69	5.93	-2.13	2.04
<b>107</b>	1216	1290	1367	-2.78	-5.71	5.96	-2.15	2.06
<b>108</b>	1183	1255	1330	-2.76	-5.74	5.99	-2.17	2.08
<b>109</b>	1150	1220	1294	-2.75	-5.76	6.02	-2.19	2.10
<b>110</b>	1119	1187	1259	-2.74	-5.79	6.05	-2.21	2.11
<b>111</b>	1088	1155	1226	-2.73	-5.82	6.08	-2.23	2.13
<b>112</b>	1059	1124	1193	-2.71	-5.84	6.11	-2.25	2.15
<b>113</b>	1030	1094	1162	-2.70	-5.87	6.14	-2.27	2.17
<b>114</b>	1003	1065	1131	-2.69	-5.89	6.17	-2.30	2.19
<b>115</b>	976	1037	1101	-2.67	-5.92	6.19	-2.32	2.21
<b>116</b>	950	1010	1073	-2.66	-5.94	6.22	-2.34	2.23
<b>117</b>	925	983	1045	-2.65	-5.97	6.25	-2.36	2.25
<b>118</b>	900	958	1018	-2.64	-5.99	6.28	-2.38	2.27
<b>119</b>	877	933	992	-2.62	-6.02	6.31	-2.40	2.29
<b>120</b>	854	909	966	-2.61	-6.04	6.34	-2.43	2.31
<b>121</b>	832	885	942	-2.60	-6.07	6.36	-2.45	2.33
<b>122</b>	810	863	918	-2.59	-6.09	6.39	-2.47	2.35
<b>123</b>	789	841	895	-2.58	-6.12	6.42	-2.49	2.37
<b>124</b>	769	819	872	-2.56	-6.14	6.45	-2.51	2.39
<b>125</b>	749	799	850	-2.55	-6.16	6.47	-2.54	2.41