Redfish Sensors

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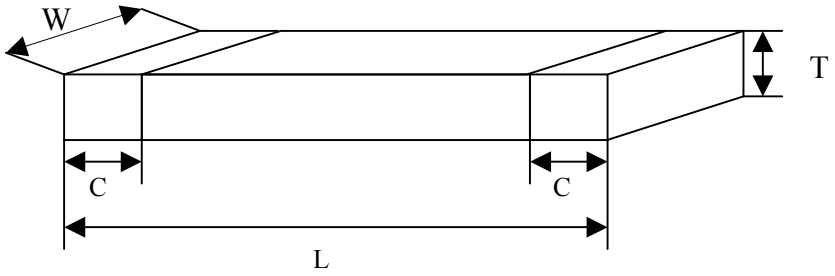
Product	:	NTC THERMISTOR
Redfish Part No.		R603-102F-2950-C
Specifications	:	R_{25} 1,000 Ω ± 1 %
		$B_{25\text{-}85}$ 2950 °K ± 1 %

Specification of SMD Chips Thermistor

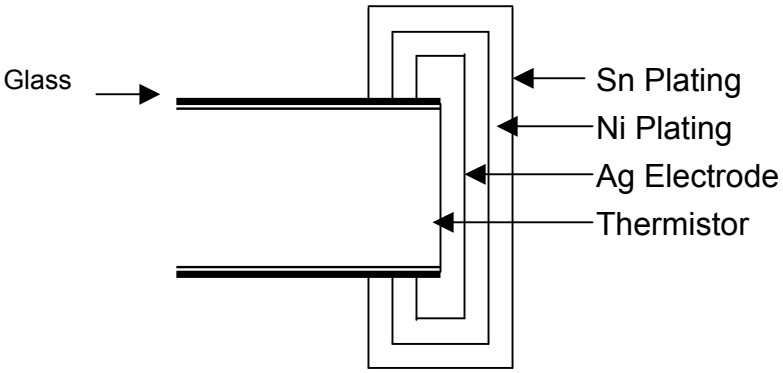
♦ PART NO.: R603-102F-2950-C

♦ CHIP DIMENSIONS



Item	L(mm)	W(mm)	T(mm)	C(mm)
1608 (0603)	1.60 ±0.0.5	0.80 ±0.0.5	0.95 ±0.10	0.40±0.20

♦ CHIP STRUCTURE



♦ ELECTRICAL CHARACTERISTICS

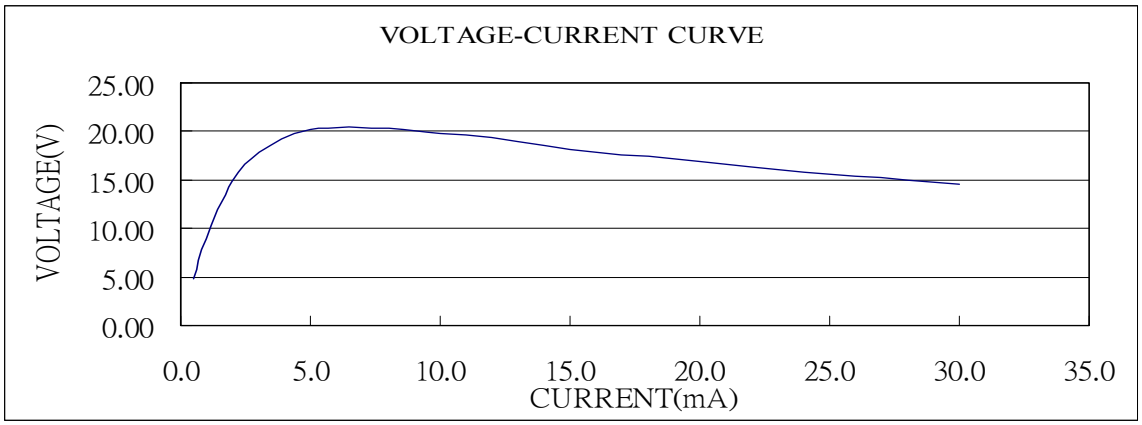
Style	Symbol	Condition	Specification
Resistance at 25°C	R_{25}	T = 25 ± 0.1°C	1 K Ω ± 1 %
B Constant	B	25°C to 85°C	2950 °K ± 1 %
Thermal Time Constant	T	T = 25 ± 0.1°C	Approx. 5 sec
Thermal Dissipation Constant	C	T = 25 ± 0.1°C	Approx. 3.5 mW/°C
Maximum Power Rating*	Pw	T = 25 ± 0.1°C	350 mW
Operation Temp. Range	--	--	-40°C ~ 125°C

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

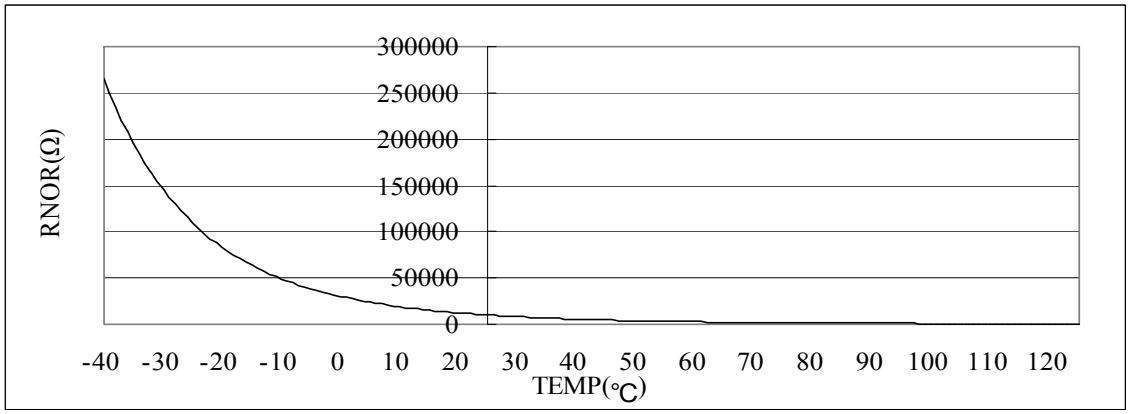
♦ RELIABILITY TEST

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

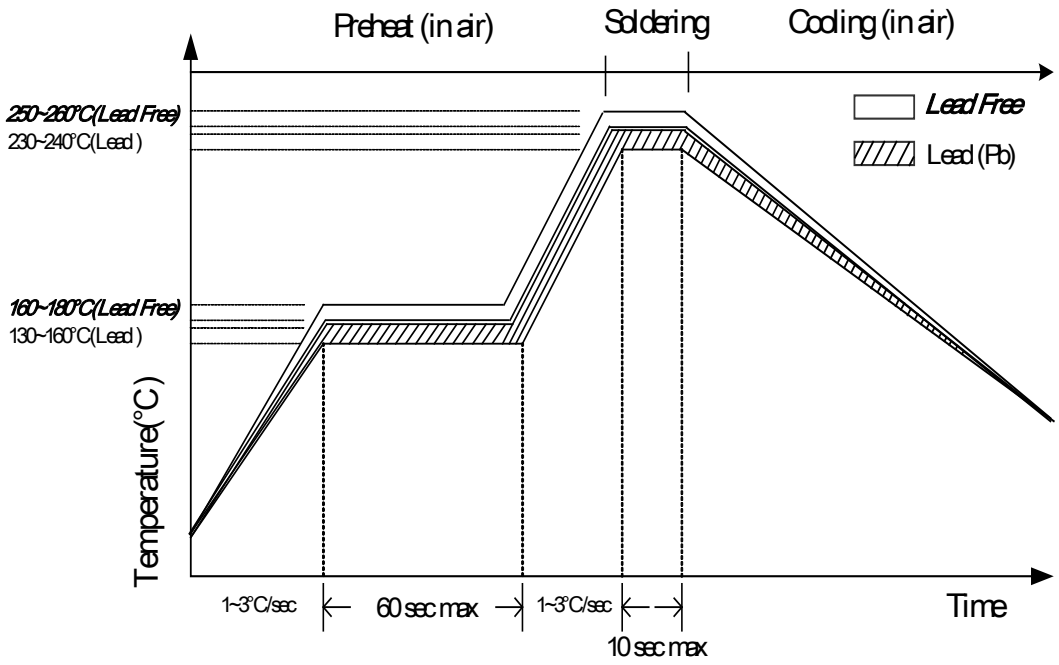
♦ VOLTAGE – CURRENT CURVE



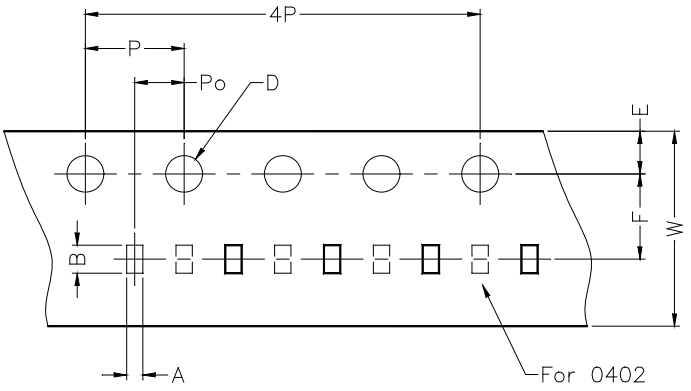
♦ RESISTANCE – TEMP CURVE



♦ REFLOW SOLDERING PROFILE



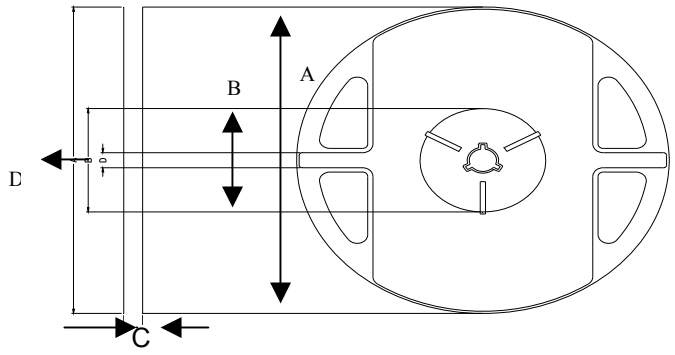
♦ TAPING DIMENSIONS



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
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

RESISTANCE-TEMPERATURE CHARACTERISTICS

PART NO.: **R603-102F-2950-C**

R: 1,000 Ohms ± 1%
B: 2950 °K ± 1%

Temperature (℃)	Resistance (Ω)			Temperature Coef.	Resist. Tolerance (%)		Temp. Tolerance (℃)	
	MIN.	CENTER	MAX.	(%/℃)	MIN.	MAX.	MIN.	MAX.
-40.0	15193	15775	16379	-5.43	-3.69	3.82	-0.70	0.68
-39.0	14401	14946	15509	-5.38	-3.64	3.77	-0.70	0.68
-38.0	13657	14166	14692	-5.33	-3.59	3.71	-0.70	0.67
-37.0	12958	13433	13924	-5.29	-3.54	3.66	-0.69	0.67
-36.0	12299	12744	13203	-5.25	-3.49	3.60	-0.69	0.66
-35.0	11679	12095	12524	-5.20	-3.44	3.55	-0.68	0.66
-34.0	11096	11485	11886	-5.16	-3.39	3.50	-0.68	0.66
-33.0	10545	10910	11285	-5.12	-3.34	3.44	-0.67	0.65
-32.0	10027	10368	10719	-5.07	-3.29	3.39	-0.67	0.65
-31.0	9538	9857	10186	-5.03	-3.24	3.34	-0.66	0.64

-30.0	9076	9375	9683	-4.99	-3.19	3.29	-0.66	0.64
-29.0	8640	8921	9209	-4.95	-3.14	3.23	-0.65	0.64
-28.0	8229	8492	8762	-4.91	-3.10	3.18	-0.65	0.63
-27.0	7840	8087	8340	-4.87	-3.05	3.13	-0.64	0.63
-26.0	7473	7704	7941	-4.83	-3.00	3.08	-0.64	0.62
-25.0	7125	7342	7565	-4.79	-2.95	3.03	-0.63	0.62
-24.0	6796	7000	7209	-4.75	-2.91	2.98	-0.63	0.61
-23.0	6485	6676	6872	-4.71	-2.86	2.94	-0.62	0.61
-22.0	6191	6370	6554	-4.68	-2.82	2.89	-0.62	0.60
-21.0	5912	6080	6253	-4.64	-2.77	2.84	-0.61	0.60
-20.0	5647	5806	5968	-4.60	-2.73	2.79	-0.61	0.59
-19.0	5397	5545	5698	-4.57	-2.68	2.75	-0.60	0.59
-18.0	5159	5299	5442	-4.53	-2.64	2.70	-0.60	0.58
-17.0	4934	5065	5199	-4.50	-2.59	2.65	-0.59	0.58
-16.0	4720	4843	4969	-4.46	-2.55	2.61	-0.58	0.57
-15.0	4516	4633	4751	-4.43	-2.51	2.56	-0.58	0.57
-14.0	4324	4433	4544	-4.39	-2.46	2.52	-0.57	0.56
-13.0	4140	4243	4348	-4.36	-2.42	2.47	-0.57	0.56
-12.0	3966	4063	4161	-4.33	-2.38	2.43	-0.56	0.55
-11.0	3800	3891	3984	-4.29	-2.34	2.38	-0.55	0.54
-10.0	3643	3728	3816	-4.26	-2.29	2.34	-0.55	0.54
-9.0	3493	3574	3656	-4.23	-2.25	2.29	-0.54	0.53
-8.0	3350	3426	3503	-4.20	-2.21	2.25	-0.54	0.53
-7.0	3215	3286	3358	-4.16	-2.17	2.21	-0.53	0.52
-6.0	3085	3152	3221	-4.13	-2.13	2.17	-0.52	0.52
-5.0	2962	3025	3089	-4.10	-2.09	2.12	-0.52	0.51
-4.0	2844	2904	2964	-4.07	-2.05	2.08	-0.51	0.50
-3.0	2732	2789	2845	-4.04	-2.01	2.04	-0.50	0.50
-2.0	2626	2678	2732	-4.01	-1.97	2.00	-0.50	0.49
-1.0	2524	2573	2624	-3.98	-1.93	1.96	-0.49	0.48
0.0	2427	2473	2521	-3.95	-1.89	1.92	-0.49	0.48
1.0	2334	2378	2422	-3.93	-1.85	1.88	-0.48	0.47
2.0	2245	2287	2329	-3.90	-1.82	1.84	-0.47	0.47
3.0	2160	2200	2239	-3.87	-1.78	1.80	-0.47	0.46
4.0	2080	2116	2154	-3.84	-1.74	1.76	-0.46	0.45
5.0	2002	2037	2072	-3.81	-1.70	1.72	-0.45	0.45
6.0	1928	1961	1994	-3.79	-1.66	1.68	-0.44	0.44
7.0	1858	1888	1919	-3.76	-1.63	1.64	-0.44	0.43
8.0	1790	1819	1848	-3.73	-1.59	1.61	-0.43	0.43
9.0	1725	1753	1780	-3.71	-1.55	1.57	-0.42	0.42
10.0	1663	1689	1715	-3.68	-1.52	1.53	-0.42	0.41

11.0	1604	1628	1653	-3.65	-1.48	1.49	-0.41	0.41
12.0	1547	1570	1593	-3.63	-1.45	1.46	-0.40	0.40
13.0	1493	1514	1536	-3.60	-1.41	1.42	-0.39	0.39
14.0	1441	1461	1481	-3.58	-1.37	1.38	-0.39	0.38
15.0	1391	1410	1429	-3.55	-1.34	1.35	-0.38	0.38
16.0	1343	1361	1379	-3.53	-1.30	1.31	-0.37	0.37
17.0	1297	1314	1330	-3.50	-1.27	1.28	-0.36	0.36
18.0	1253	1269	1284	-3.48	-1.24	1.24	-0.36	0.35
19.0	1211	1225	1240	-3.46	-1.20	1.21	-0.35	0.35
20.0	1170	1184	1198	-3.43	-1.17	1.17	-0.34	0.34
21.0	1131	1144	1157	-3.41	-1.13	1.14	-0.33	0.33
22.0	1094	1106	1118	-3.39	-1.10	1.10	-0.33	0.32
23.0	1058	1069	1081	-3.36	-1.07	1.07	-0.32	0.32
24.0	1023	1034	1045	-3.34	-1.03	1.03	-0.31	0.31
25.0	990	1000	1010	-3.32	-1.00	1.00	-0.30	0.30
26.0	957	967	977	-3.30	-1.03	1.03	-0.31	0.31
27.0	926	936	946	-3.27	-1.07	1.07	-0.33	0.33
28.0	896	906	916	-3.25	-1.10	1.10	-0.34	0.34
29.0	867	877	887	-3.23	-1.13	1.13	-0.35	0.35
30.0	840	849	859	-3.21	-1.16	1.16	-0.36	0.36
31.0	813	823	833	-3.19	-1.19	1.20	-0.38	0.37
32.0	787	797	807	-3.17	-1.22	1.23	-0.39	0.39
33.0	762	772	782	-3.15	-1.26	1.26	-0.40	0.40
34.0	739	748	758	-3.13	-1.29	1.29	-0.41	0.41
35.0	716	725	735	-3.11	-1.32	1.32	-0.43	0.42
36.0	694	703	713	-3.09	-1.35	1.36	-0.44	0.44
37.0	673	682	691	-3.07	-1.38	1.39	-0.45	0.45
38.0	652	661	671	-3.05	-1.41	1.42	-0.47	0.46
39.0	632	642	651	-3.03	-1.44	1.45	-0.48	0.48
40.0	613	623	632	-3.01	-1.47	1.48	-0.49	0.49
41.0	595	604	613	-2.99	-1.50	1.51	-0.51	0.50
42.0	577	586	595	-2.97	-1.53	1.54	-0.52	0.51
43.0	560	569	578	-2.95	-1.56	1.57	-0.53	0.53
44.0	544	553	562	-2.93	-1.59	1.60	-0.55	0.54
45.0	528	537	546	-2.91	-1.61	1.63	-0.56	0.55
46.0	513	522	530	-2.90	-1.64	1.66	-0.57	0.57
47.0	498	507	515	-2.88	-1.67	1.69	-0.59	0.58
48.0	484	492	501	-2.86	-1.70	1.72	-0.60	0.59
49.0	470	478	487	-2.84	-1.73	1.75	-0.61	0.61
50.0	457	465	473	-2.82	-1.75	1.78	-0.63	0.62
51.0	444	452	460	-2.81	-1.78	1.80	-0.64	0.63

52.0	432	440	448	-2.79	-1.81	1.83	-0.66	0.65
53.0	420	428	436	-2.77	-1.84	1.86	-0.67	0.66
54.0	408	416	424	-2.76	-1.86	1.89	-0.69	0.68
55.0	397	405	412	-2.74	-1.89	1.92	-0.70	0.69
56.0	386	394	401	-2.72	-1.92	1.95	-0.71	0.70
57.0	376	383	391	-2.71	-1.94	1.97	-0.73	0.72
58.0	366	373	381	-2.69	-1.97	2.00	-0.74	0.73
59.0	356	363	371	-2.67	-2.00	2.03	-0.76	0.75
60.0	346	354	361	-2.66	-2.02	2.06	-0.77	0.76
61.0	337	344	352	-2.64	-2.05	2.08	-0.79	0.78
62.0	328	335	343	-2.63	-2.08	2.11	-0.80	0.79
63.0	320	327	334	-2.61	-2.10	2.14	-0.82	0.80
64.0	312	318	325	-2.60	-2.13	2.16	-0.83	0.82
65.0	304	310	317	-2.58	-2.15	2.19	-0.85	0.83
66.0	296	302	309	-2.56	-2.18	2.22	-0.86	0.85
67.0	288	295	301	-2.55	-2.20	2.24	-0.88	0.86
68.0	281	287	294	-2.53	-2.23	2.27	-0.89	0.88
69.0	274	280	287	-2.52	-2.25	2.29	-0.91	0.89
70.0	267	273	280	-2.51	-2.28	2.32	-0.93	0.91
71.0	260	266	273	-2.49	-2.30	2.34	-0.94	0.92
72.0	254	260	266	-2.48	-2.32	2.37	-0.96	0.94
73.0	248	254	260	-2.46	-2.35	2.40	-0.97	0.95
74.0	242	247	253	-2.45	-2.37	2.42	-0.99	0.97
75.0	236	241	247	-2.43	-2.40	2.45	-1.00	0.98
76.0	230	236	242	-2.42	-2.42	2.47	-1.02	1.00
77.0	224	230	236	-2.41	-2.44	2.50	-1.04	1.02
78.0	219	225	230	-2.39	-2.47	2.52	-1.05	1.03
79.0	214	219	225	-2.38	-2.49	2.54	-1.07	1.05
80.0	209	214	220	-2.37	-2.51	2.57	-1.09	1.06
81.0	204	209	215	-2.35	-2.54	2.59	-1.10	1.08
82.0	199	204	210	-2.34	-2.56	2.62	-1.12	1.09
83.0	194	200	205	-2.33	-2.58	2.64	-1.14	1.11
84.0	190	195	200	-2.31	-2.61	2.66	-1.15	1.13
85.0	186	191	196	-2.30	-2.63	2.69	-1.17	1.14
86.0	181	186	191	-2.29	-2.65	2.71	-1.19	1.16
87.0	177	182	187	-2.27	-2.67	2.74	-1.20	1.17
88.0	173	178	183	-2.26	-2.69	2.76	-1.22	1.19
89.0	169	174	179	-2.25	-2.72	2.78	-1.24	1.21
90.0	166	170	175	-2.24	-2.74	2.80	-1.25	1.22
91.0	162	166	171	-2.22	-2.76	2.83	-1.27	1.24
92.0	158	163	167	-2.21	-2.78	2.85	-1.29	1.26

93.0	155	159	164	-2.20	-2.80	2.87	-1.31	1.27
94.0	151	156	160	-2.19	-2.82	2.90	-1.32	1.29
95.0	148	152	157	-2.18	-2.85	2.92	-1.34	1.31
96.0	145	149	154	-2.16	-2.87	2.94	-1.36	1.32
97.0	142	146	150	-2.15	-2.89	2.96	-1.38	1.34
98.0	139	143	147	-2.14	-2.91	2.98	-1.39	1.36
99.0	136	140	144	-2.13	-2.93	3.01	-1.41	1.37
100.0	133	137	141	-2.12	-2.95	3.03	-1.43	1.39
101.0	130	134	138	-2.11	-2.97	3.05	-1.45	1.41
102.0	127	131	135	-2.10	-2.99	3.07	-1.47	1.43
103.0	125	129	132	-2.08	-3.01	3.09	-1.48	1.44
104.0	122	126	130	-2.07	-3.03	3.12	-1.50	1.46
105.0	120	123	127	-2.06	-3.05	3.14	-1.52	1.48
106.0	117	121	125	-2.05	-3.07	3.16	-1.54	1.50
107.0	115	118	122	-2.04	-3.09	3.18	-1.56	1.51
108.0	112	116	120	-2.03	-3.11	3.20	-1.58	1.53
109.0	110	114	117	-2.02	-3.13	3.22	-1.59	1.55
110.0	108	111	115	-2.01	-3.15	3.24	-1.61	1.57
111.0	106	109	113	-2.00	-3.17	3.26	-1.63	1.59
112.0	104	107	111	-1.99	-3.19	3.28	-1.65	1.60
113.0	102	105	108	-1.98	-3.21	3.30	-1.67	1.62
114.0	100	103	106	-1.97	-3.23	3.32	-1.69	1.64
115.0	98	101	104	-1.96	-3.25	3.34	-1.71	1.66
116.0	96	99	102	-1.95	-3.26	3.36	-1.73	1.68
117.0	94	97	100	-1.94	-3.28	3.38	-1.75	1.69
118.0	92	95	98	-1.93	-3.30	3.40	-1.77	1.71
119.0	90	93	97	-1.92	-3.32	3.42	-1.78	1.73
120.0	88	92	95	-1.91	-3.34	3.44	-1.80	1.75
121.0	87	90	93	-1.90	-3.36	3.46	-1.82	1.77
122.0	85	88	91	-1.89	-3.38	3.48	-1.84	1.79
123.0	84	86	90	-1.88	-3.39	3.50	-1.86	1.81
124.0	82	85	88	-1.87	-3.41	3.52	-1.88	1.82
125.0	80	83	86	-1.86	-3.43	3.54	-1.90	1.84