

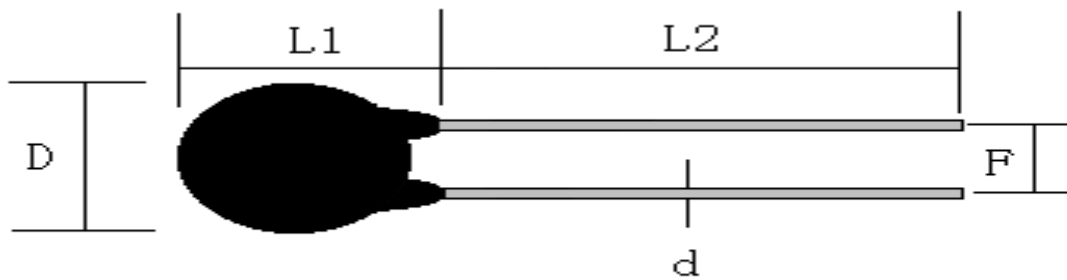
负温度系数热敏电阻器主要技术参数

(The Main Technical Parameters of NTC Thermistor)

型号 (Model) : MF52A103F3435

1、一般参数 (Common Parameters) :

(1) 尺寸 (mm) (Size)



D	L1	L2	d	F
±0.5	±0.5	min	±0.05	±0.5
2.3	3.0	25	0.40	2.0

2、材料 (Materials)

①封装材料 (Wrapper) : 环氧树脂 (epoxy resin)

②引线 (Down-lead) : CP线 (CP Wire)

③颜色 (Coating color) : 黑色 (Black)

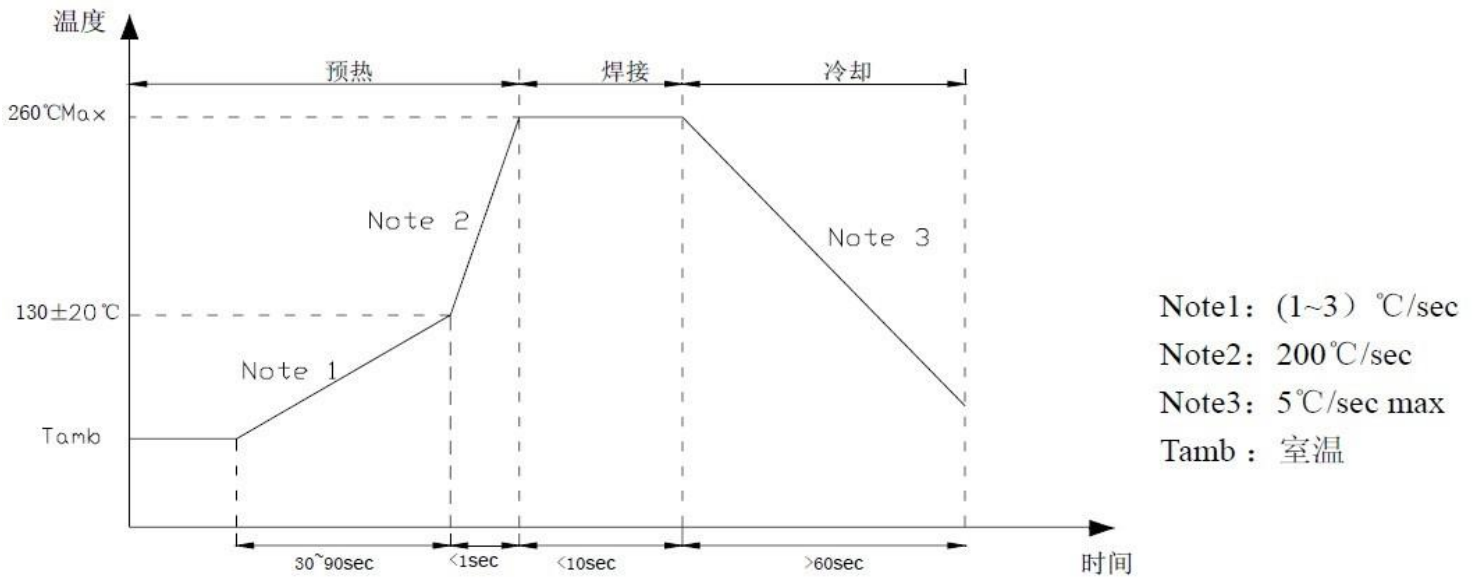
3、电气性能 (Electrical Properties) :

项目 Items	符号 Symbol	测试条件 Testing Conditions	最小值 Minimum Value	正常值 Normal value	最大值 Maximum value	单位 Unit
25℃的电阻值	R25	Ta=25±0.05℃ PT≦0.1mw	9.900	10.000	10.100	K Ω
85℃的电阻值	R85	Ta=85±0.05℃ PT≦0.1mw	/	1.451	/	K Ω
B 值 B Value	B25/85	$B=LN \frac{R_{T1}}{R_{T2}} / (\frac{1}{T1} - \frac{1}{T2})$	/	3435	/	K
耗散系数 Dissipation Factor	σ	Ta=25±0.5℃	3	/	/	mw/℃
时间常数 Time Constant	τ	Ta=25±0.5℃ (在空气中 /In the air)	/	/	12	sec
绝缘电阻 Insulation Resistance	/	500VDC	50	/	/	M Ω
使用温度范围 Operating Temperature Range	/	/	-30	/	+ 125	℃

4、可靠性能试验 (Reliability test) :

项目 Items	技术要求 Technical Requirements	测试条件及方法 The test conditions and methods
可焊性 Solderability	引出端焊料自由流动和浸润良好, 上锡面积 95%以上 Terminal solder flow freely with good wetting, and Tin area covered is by more than 95%.	将引出端沾助焊剂后, 浸入温度为 230 ± 5 °C 锡槽中, 锡面距 NTC 本体下端 2-2.5mm 处, 持续 2 ± 0.5 S (参照 IEC60068-2-20 试验 Ta /GB2423.28 Ta) Immersed with terminal flux, temperature of 230 ± 5 °C in the tin bath, Tin surface from NTC ontology bottom 2-2.5 mm, lasts $2 + / - 0.5$ S. (With reference to IEC60068-2-20 test Ta/GB2423.28 Ta)
耐焊接热 Welding Heat Test	无可见性损伤 No visible damage $\Delta R/R25 \leq \pm 2\%$	将引出端浸入温度为 260 ± 5 °C 锡槽中, 锡面距 NTC 本体下端 2-2.5mm 处, 持续时间: 10 ± 1 S (参照 IEC60068-2-20 试验 Tb/GB2423.28 Tb) Terminal in temperature for $260 + 5$ °C in the tin bath, Tin surface from NTC ontology bottom 2-2.5 mm, duration: $10 + / - 1$ s (With reference to IEC60068-2-20 Tb/GB2423.28 Tb test)
引出端强度 Terminals Strength	无脱落 Shedding-free $\Delta R/R25 \leq \pm 2\%$	试验 Ua: 拉力 10N, 持续 10S; Test Ua: pull 10 n for 10 s; 试验 Ub: 弯曲 90 度, 拉力 5N, 连续两次; Ub test: bent 90 degrees, pull 5 n, for two consecutive times; (参照 IEC60068-2-21 / GB2423.29 U 试验) (Reference IEC60068-2-21 / GB2423.29 U test)
高温试验 High-Temperature Test	$\Delta R/R25 \leq \pm 2\%$	100 ± 5 °C, 通电 1000 ± 24 h, DC0.2mA 100 ± 5 °C, electricity to 1000 ± 24 hours, DC0.2 mA (参照 IEC60068-2-2/GB2423.2 试验) (Reference IEC60068-2-2 / GB2423.2 test)
低温试验 Low-Temperature Test	$\Delta R/R25 \leq \pm 2\%$	-40 ± 5 °C, 通电 1000 ± 24 h, DC0.2mA $-40 + / - 5$ °C, electricity to 1000 ± 24 hours, DC0.2 mA (参照 IEC60068-2-1/GB2423.1 试验) (Reference/GB2423.1 IEC60068-2-1 test)
耐潮湿试验 Resistance to moisture test	$\Delta R/R25 \leq \pm 2\%$	40 ± 2 °C, 90%-95%RH 环境下放置 1000 ± 24 h 40 ± 2 °C, 90% - 95% RH conditions placed 1000 ± 24 hours (参照 IEC60068-2-3/GB2423.3 试验) (Reference IEC60068-2-3 / GB2423.3 test)
温度冷热循环试验 The temperature of hot and cold cycling test	$\Delta R/R25 \leq \pm 2\%$	-40 °C $\times 30$ min $\rightarrow 30$ °C $\times 5$ min $\rightarrow 100$ °C $\times 30$ min $\rightarrow 30$ °C $\times 5$ min, 反复 5 次 (Repeated five times) (参照 IEC60068-2-14/GB2423.22 试验) (Reference IEC60068-2-14 / GB2423.22 test)

5、波峰焊示意图（Wave soldering diagram）：



6、包装方式（Packaging）：

散装数量：500Pcs/袋 20 袋/盒 10 盒/箱

500 PCS/Plastic Bag 20 plastic bags/BOX 10 BOXES/Carton)

7、存储条件(Storage Conditions of Products):

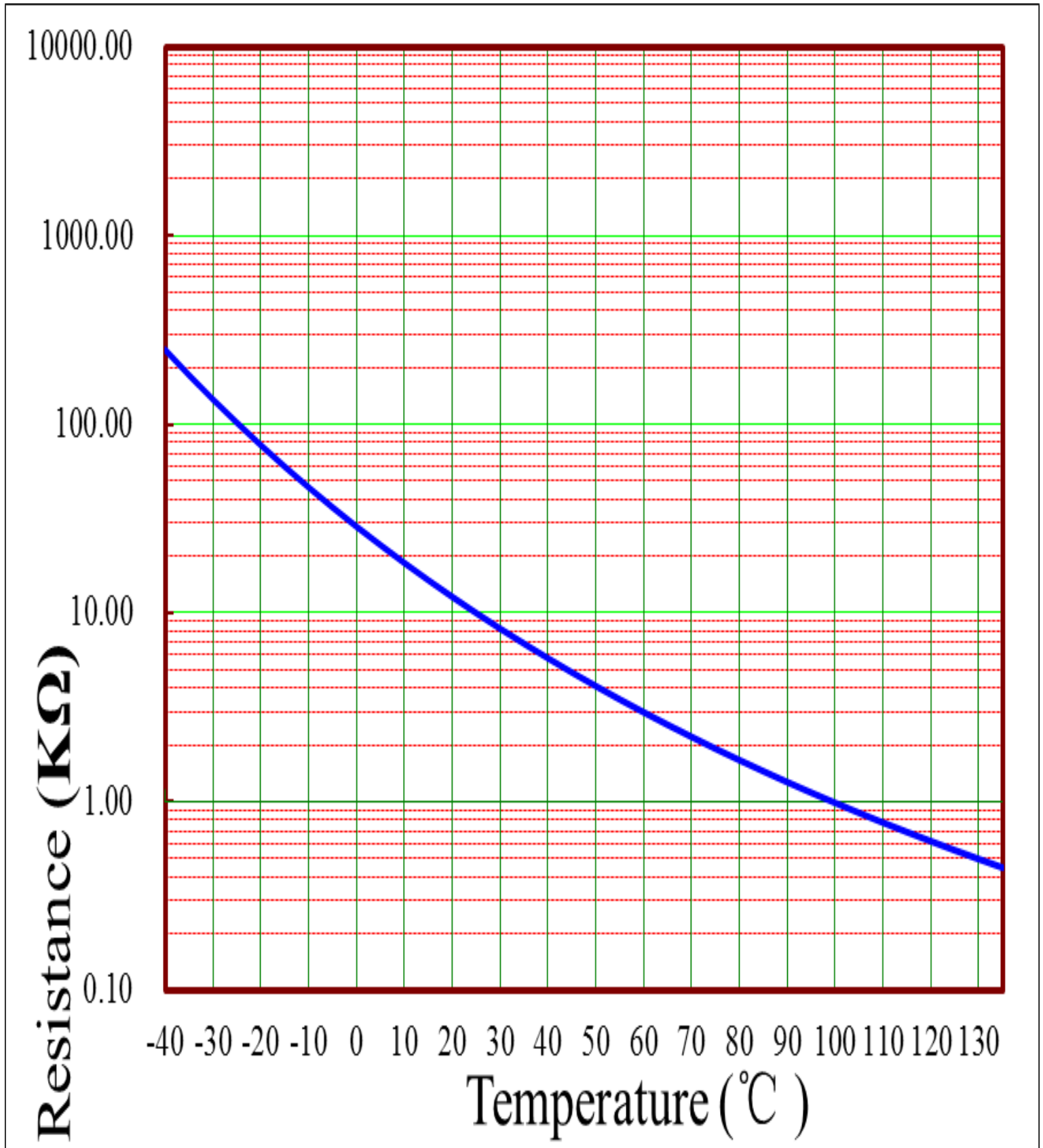
② 存储温度(Storage Temperature)：-10°C~+40°C

② 相对湿度(Relative Humidity)：≦75%RH

③ 不要将本产品存放在有腐蚀性气体或是阳光直接照射的环境中保管
 (Do not use this product in corrosive gases or direct sunlight environment preservation.)



8、R-T特性图



9、阻温特性表

R--T 表

R25= 10.00 Kohms \pm 1% B25/85= 3435 K \pm 1%

温度 Temperature (°C)	阻值 Resistance (Ω)			温度系数 temperature coefficient (%/°C)	阻值精度偏差 Tolerance for the Resistance(%)		测温精度偏差 (°C) Tolerance for the testing temperature	
	下限值 lower limiting value	中心值 Central value	上限值 upper-limit value		最小 Min.	最大 Max.	最小 Min	最大 Max.
-20.0	75191.54	77522.55	79917.83	-5.36	-3.01	3.09	-0.58	0.56
-19.0	71320.42	73492.18	75722.50	-5.32	-2.96	3.03	-0.57	0.56
-18.0	67676.64	69700.51	71777.73	-5.28	-2.90	2.98	-0.56	0.55
-17.0	64245.32	66131.81	68066.89	-5.24	-2.85	2.93	-0.56	0.54
-16.0	61012.66	62771.49	64574.55	-5.19	-2.80	2.87	-0.55	0.54
-15.0	57965.84	59605.98	61286.40	-5.15	-2.75	2.82	-0.55	0.53
-14.0	55092.95	56622.72	58189.15	-5.11	-2.70	2.77	-0.54	0.53
-13.0	52382.91	53810.01	55270.46	-5.08	-2.65	2.71	-0.53	0.52
-12.0	49825.42	51156.97	52518.85	-5.04	-2.60	2.66	-0.53	0.52
-11.0	47410.90	48653.50	49923.69	-5.00	-2.55	2.61	-0.52	0.51
-10.0	45130.42	46290.20	47475.04	-4.96	-2.51	2.56	-0.52	0.51
-9.0	42975.67	44058.30	45163.68	-4.92	-2.46	2.51	-0.51	0.50
-8.0	40938.90	41949.64	42981.04	-4.89	-2.41	2.46	-0.50	0.49
-7.0	39012.89	39956.63	40919.10	-4.85	-2.36	2.41	-0.50	0.49
-6.0	37190.91	38072.17	38970.42	-4.81	-2.31	2.36	-0.49	0.48
-5.0	35466.66	36289.67	37128.05	-4.78	-2.27	2.31	-0.48	0.47
-4.0	33834.29	34602.94	35385.52	-4.74	-2.22	2.26	-0.48	0.47
-3.0	32288.32	33006.25	33736.77	-4.71	-2.18	2.21	-0.47	0.46
-2.0	30823.61	31494.20	32176.16	-4.67	-2.13	2.17	-0.46	0.46
-1.0	29435.39	30061.78	30698.43	-4.64	-2.08	2.12	-0.46	0.45
0.0	28119.17	28704.29	29298.65	-4.60	-2.04	2.07	-0.45	0.44
1.0	26870.78	27417.34	27972.22	-4.57	-1.99	2.02	-0.44	0.44
2.0	25686.29	26196.83	26714.84	-4.54	-1.95	1.98	-0.44	0.43
3.0	24562.03	25038.90	25522.47	-4.50	-1.90	1.93	-0.43	0.42
4.0	23494.57	23939.96	24391.36	-4.47	-1.86	1.89	-0.42	0.42
5.0	22480.67	22896.64	23317.98	-4.44	-1.82	1.84	-0.41	0.41
6.0	21517.34	21905.79	22299.02	-4.41	-1.77	1.80	-0.41	0.40
7.0	20601.72	20964.43	21331.40	-4.38	-1.73	1.75	-0.40	0.40

8.0	19731.17	20069.80	20412.20	-4.35	-1.69	1.71	-0.39	0.39
9.0	18903.18	19219.28	19538.71	-4.31	-1.64	1.66	-0.39	0.38
10.0	18115.43	18410.44	18708.38	-4.28	-1.60	1.62	-0.38	0.37
11.0	17365.71	17640.97	17918.81	-4.25	-1.56	1.57	-0.37	0.37
12.0	16651.95	16908.73	17167.75	-4.22	-1.52	1.53	-0.36	0.36
13.0	15972.21	16211.68	16453.10	-4.20	-1.48	1.49	-0.35	0.35
14.0	15324.67	15547.93	15772.87	-4.17	-1.44	1.45	-0.35	0.34
15.0	14707.60	14915.68	15125.19	-4.14	-1.40	1.40	-0.34	0.34
16.0	14119.40	14313.25	14508.32	-4.11	-1.35	1.36	-0.33	0.33
17.0	13558.53	13739.06	13920.60	-4.08	-1.31	1.32	-0.32	0.32
18.0	13023.57	13191.61	13360.48	-4.05	-1.27	1.28	-0.32	0.31
19.0	12513.16	12669.50	12826.51	-4.02	-1.23	1.24	-0.31	0.31
20.0	12026.04	12171.41	12317.30	-4.00	-1.19	1.20	-0.30	0.30
21.0	11561.00	11696.08	11831.57	-3.97	-1.15	1.16	-0.29	0.29
22.0	11116.91	11242.36	11368.09	-3.94	-1.12	1.12	-0.28	0.28
23.0	10692.71	10809.12	10925.71	-3.92	-1.08	1.08	-0.28	0.27
24.0	10287.39	10395.33	10503.36	-3.89	-1.04	1.04	-0.27	0.27
25.0	9900.00	10000.00	10100.00	-3.86	-1.00	1.00	-0.26	0.26
26.0	9522.31	9622.20	9722.16	-3.84	-1.04	1.04	-0.27	0.27
27.0	9161.40	9261.04	9360.84	-3.81	-1.08	1.08	-0.28	0.28
28.0	8816.43	8915.71	9015.21	-3.79	-1.11	1.12	-0.29	0.29
29.0	8486.60	8585.41	8684.50	-3.76	-1.15	1.15	-0.31	0.31
30.0	8171.17	8269.41	8367.99	-3.74	-1.19	1.19	-0.32	0.32
31.0	7869.43	7967.00	8064.98	-3.71	-1.22	1.23	-0.33	0.33
32.0	7580.69	7677.53	7774.82	-3.69	-1.26	1.27	-0.34	0.34
33.0	7304.33	7400.36	7496.90	-3.66	-1.30	1.30	-0.36	0.35
34.0	7039.75	7134.91	7230.63	-3.64	-1.33	1.34	-0.37	0.37
35.0	6786.38	6880.61	6975.45	-3.62	-1.37	1.38	-0.38	0.38
36.0	6543.68	6636.93	6730.84	-3.59	-1.41	1.41	-0.39	0.39
37.0	6311.14	6403.37	6496.30	-3.57	-1.44	1.45	-0.41	0.40
38.0	6088.28	6179.46	6271.36	-3.55	-1.48	1.49	-0.42	0.42
39.0	5874.65	5964.73	6055.59	-3.53	-1.51	1.52	-0.43	0.43
40.0	5669.80	5758.76	5848.54	-3.50	-1.54	1.56	-0.45	0.44
41.0	5473.33	5561.15	5649.82	-3.48	-1.58	1.59	-0.46	0.45
42.0	5284.86	5371.52	5459.05	-3.46	-1.61	1.63	-0.47	0.47
43.0	5104.00	5189.48	5275.87	-3.44	-1.65	1.66	-0.48	0.48
44.0	4930.42	5014.71	5099.94	-3.42	-1.68	1.70	-0.50	0.49
45.0	4763.77	4846.87	4930.92	-3.39	-1.71	1.73	-0.51	0.51
46.0	4603.75	4685.64	4768.51	-3.37	-1.75	1.77	-0.52	0.52
47.0	4450.06	4530.74	4612.42	-3.35	-1.78	1.80	-0.54	0.53
48.0	4302.40	4381.87	4462.35	-3.33	-1.81	1.84	-0.55	0.54
49.0	4160.52	4238.77	4318.06	-3.31	-1.85	1.87	-0.57	0.56
50.0	4024.15	4101.19	4179.29	-3.29	-1.88	1.90	-0.58	0.57
51.0	3893.05	3968.88	4045.79	-3.27	-1.91	1.94	-0.59	0.58
52.0	3766.99	3841.62	3917.33	-3.25	-1.94	1.97	-0.61	0.60

53.0	3645.75	3719.18	3793.71	-3.23	-1.97	2.00	-0.62	0.61
54.0	3529.11	3601.35	3674.70	-3.21	-2.01	2.04	-0.63	0.63
55.0	3416.89	3487.94	3560.12	-3.19	-2.04	2.07	-0.65	0.64
56.0	3308.88	3378.76	3449.78	-3.17	-2.07	2.10	-0.66	0.65
57.0	3204.91	3273.63	3343.50	-3.15	-2.10	2.13	-0.68	0.67
58.0	3104.80	3172.38	3241.10	-3.13	-2.13	2.17	-0.69	0.68
59.0	3008.40	3074.84	3142.43	-3.11	-2.16	2.20	-0.71	0.69
60.0	2915.54	2980.85	3047.32	-3.09	-2.19	2.23	-0.72	0.71
61.0	2826.08	2890.28	2955.64	-3.08	-2.22	2.26	-0.74	0.72
62.0	2739.87	2802.97	2867.24	-3.06	-2.25	2.29	-0.75	0.74
63.0	2656.79	2718.80	2781.99	-3.04	-2.28	2.32	-0.76	0.75
64.0	2576.69	2637.63	2699.75	-3.02	-2.31	2.36	-0.78	0.76
65.0	2499.46	2559.35	2620.41	-3.00	-2.34	2.39	-0.79	0.78
66.0	2424.98	2483.83	2543.85	-2.99	-2.37	2.42	-0.81	0.79
67.0	2353.14	2410.96	2469.96	-2.97	-2.40	2.45	-0.82	0.81
68.0	2283.82	2340.64	2398.62	-2.95	-2.43	2.48	-0.84	0.82
69.0	2216.94	2272.76	2329.75	-2.93	-2.46	2.51	-0.85	0.84
70.0	2152.39	2207.23	2263.24	-2.92	-2.48	2.54	-0.87	0.85
71.0	2090.08	2143.95	2199.00	-2.90	-2.51	2.57	-0.89	0.87
72.0	2029.92	2082.84	2136.93	-2.88	-2.54	2.60	-0.90	0.88
73.0	1971.82	2023.81	2076.97	-2.87	-2.57	2.63	-0.92	0.90
74.0	1915.70	1966.78	2019.01	-2.85	-2.60	2.66	-0.93	0.91
75.0	1861.49	1911.67	1963.00	-2.83	-2.62	2.69	-0.95	0.93
76.0	1809.12	1858.40	1908.84	-2.82	-2.65	2.71	-0.96	0.94
77.0	1758.50	1806.91	1856.48	-2.80	-2.68	2.74	-0.98	0.96
78.0	1709.57	1757.13	1805.83	-2.79	-2.71	2.77	-0.99	0.97
79.0	1662.28	1708.99	1756.85	-2.77	-2.73	2.80	-1.01	0.99
80.0	1616.54	1662.44	1709.46	-2.75	-2.76	2.83	-1.03	1.00
81.0	1572.32	1617.40	1663.60	-2.74	-2.79	2.86	-1.04	1.02
82.0	1529.54	1573.82	1619.23	-2.72	-2.81	2.88	-1.06	1.03
83.0	1488.16	1531.66	1576.27	-2.71	-2.84	2.91	-1.08	1.05
84.0	1448.12	1490.85	1534.69	-2.69	-2.87	2.94	-1.09	1.06
85.0	1409.37	1451.35	1494.43	-2.68	-2.89	2.97	-1.11	1.08
86.0	1371.86	1413.10	1455.44	-2.66	-2.92	3.00	-1.12	1.10
87.0	1335.56	1376.07	1417.67	-2.65	-2.94	3.02	-1.14	1.11
88.0	1300.40	1340.20	1381.09	-2.63	-2.97	3.05	-1.16	1.13
89.0	1266.36	1305.46	1345.64	-2.62	-3.00	3.08	-1.18	1.14
90.0	1233.39	1271.81	1311.29	-2.60	-3.02	3.10	-1.19	1.16
91.0	1201.45	1239.20	1278.00	-2.59	-3.05	3.13	-1.21	1.18
92.0	1170.51	1207.60	1245.73	-2.58	-3.07	3.16	-1.23	1.19
93.0	1140.53	1176.97	1214.44	-2.56	-3.10	3.18	-1.24	1.21
94.0	1111.47	1147.27	1184.11	-2.55	-3.12	3.21	-1.26	1.22
95.0	1083.31	1118.48	1154.69	-2.53	-3.15	3.24	-1.28	1.24
96.0	1056.00	1090.57	1126.15	-2.52	-3.17	3.26	-1.29	1.26
97.0	1029.53	1063.49	1098.47	-2.51	-3.19	3.29	-1.31	1.27



98.0	1003.85	1037.23	1071.62	-2.49	-3.22	3.31	-1.33	1.29
99.0	978.95	1011.76	1045.55	-2.48	-3.24	3.34	-1.35	1.31
100.0	954.80	987.04	1020.26	-2.47	-3.27	3.37	-1.36	1.32
101.0	931.36	963.05	995.71	-2.45	-3.29	3.39	-1.38	1.34
102.0	908.63	939.77	971.88	-2.44	-3.31	3.42	-1.40	1.36
103.0	886.56	917.17	948.74	-2.43	-3.34	3.44	-1.42	1.37
104.0	865.14	895.23	926.26	-2.41	-3.36	3.47	-1.44	1.39
105.0	844.35	873.92	904.44	-2.40	-3.38	3.49	-1.45	1.41
106.0	824.16	853.23	883.24	-2.39	-3.41	3.52	-1.47	1.43
107.0	804.56	833.14	862.64	-2.38	-3.43	3.54	-1.49	1.44
108.0	785.53	813.62	842.63	-2.36	-3.45	3.57	-1.51	1.46
109.0	767.04	794.66	823.19	-2.35	-3.48	3.59	-1.53	1.48
110.0	749.08	776.23	804.29	-2.34	-3.50	3.61	-1.54	1.50
111.0	731.63	758.33	785.92	-2.33	-3.52	3.64	-1.56	1.51
112.0	714.67	740.92	768.06	-2.32	-3.54	3.66	-1.58	1.53
113.0	698.19	724.01	750.70	-2.30	-3.57	3.69	-1.60	1.55
114.0	682.18	707.56	733.82	-2.29	-3.59	3.71	-1.62	1.57
115.0	666.61	691.57	717.40	-2.28	-3.61	3.73	-1.64	1.58
116.0	651.47	676.02	701.43	-2.27	-3.63	3.76	-1.66	1.60
117.0	636.75	660.90	685.89	-2.26	-3.65	3.78	-1.68	1.62
118.0	622.44	646.19	670.78	-2.25	-3.68	3.80	-1.69	1.64
119.0	608.52	631.88	656.07	-2.23	-3.70	3.83	-1.71	1.65
120.0	594.98	617.96	641.76	-2.22	-3.72	3.85	-1.73	1.67