编码(Coding)：JK/JXD260401001

南京时恒电子科技有限公司

Nanjing Shiheng Electronics Co.,Ltd.

产品承认书

APPROVAL SHEET

客户名称 CUSTOMER：	
产品名称 PART NAME：	MF52 测温型 NTC 热敏电阻器 MF52 Series Temp Measurement NTC Thermistor
产品型号 PART NUMBER：	MF52A 503F3950(A1)
版次 REV.NO:	C0
日期 DATE:	2026-04-01

南京时恒电子科技有限公司
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变更登记表

REVISED RECORD SHEET

版次 REV. NO	变更日期 REV.DATE	变更内容 CHANGE CONTENT	申请人 APPLICANT	批准人 APPROVED
A0	2015/10/11	版本制定。 Version formulation.	鞠晓丽	李少媛
B0	2022/4/1	更新规格书版本格式，增加版次管控，细化规格纸。 Update for version form of data sheet, add to management and control for number of edition, refine to PN and draw.	吴迎丽	李少媛
C0	2025/12/01	更新规格书版本格式，去掉：产品图纸此一页的变更履历表。 Update for version form of data sheet, Remove: Change history table on this page of the product drawing.	刘星月	李少媛

1、产品型号说明 Product model specification

MF52	A	503	F	3950	(A1)
①	②	③	④	⑤	⑥

① MF52：测温型 NTC 热敏电阻器系列 (Series Temp Measurement NTC Thermistor)

② A：指引线为镀锡线 (Refers to tinned lead)

③ 503：25℃的零功率电阻值 50kΩ (Zero Power Resistance at 25℃is 50kΩ)

④ F：阻值精度代码 F-±1% G-±2% H-±3% J-±5% (Resistance precision code F-±1% G-±2% H-±3% J-±5%)

⑤ 3950：$B_{25/50}$ 值 3950K ($B_{25/50}$:3950K)

⑥ (A1)：线材规格：引线外径Φ0.3mm (Wire dimension: The outer diameter of lead wire is Φ0.3mm)

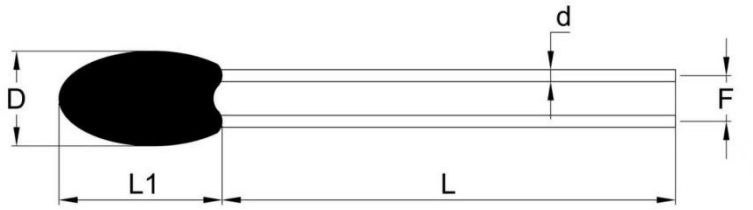
2、电气性能 Electrical Characteristics

No.	项目 Item	符号 Symbol	测试条件 Test conditions	单位 Unit	性能要求 Requirements
2.1	25℃的零功率电阻值 Zero Power Resistance at 25℃	R_{25}	Ta=25±0.01℃ (测试功率≤0.1mW 油槽中测试) (Test Power≤0.1mW，In the oil tank)	kΩ	50kΩ±1%
2.2	B 值 B-value	$B_{25/50}$	$B=[(T_a\times T_b)/(T_b-T_a)]\times \ln(R_a/R_b)$ T_a=25±0.01℃ T_b=50±0.01℃	K	3950K±1%
2.5	耗散系数 Thermal dissipation Coefficient	δ	静止空气中 In still air	mW/℃	约 2
2.6	时间常数 Thermal time constant	τ	静止空气中 In still air	sec	约 12
2.8	绝缘电阻 Insulation resistance	/	100V/DC 1min	MΩ	≥100
2.9	工作温度范围 Operating temperature range	/	/	℃	-55 ~ 125
2.10	最大额定功率 Maximum rated power	Pmax	/	mW	50
2.11	阻温特性 R&T-table	/	/	/	见附表 I See attached table I
2.12	阻值误差&B 值误差 Resistance tolerance& B-value tolerance	/	/	/	见附表 II See attached table II

3、产品图纸 Product drawing

产品图纸 Product drawing		客户确认 Customer confirm	客户名称 Customer：			
			确认 Confirm		日期 DATE	
产品型号 MODEL NO.	MF52A 503F3950(A1)		审核 Approve:		日期 DATE	

尺寸 Dimensions：　　（Unit：mm）



DMax	L1Max	LMin	d±0.05	F±0.5
2.5	4.0	25	0.3	1.7

技术要求 Technical requirements：

1) 零功率阻值：R_{25}：50kΩ±1% (Zero Power Resistance: R_{25}：50kΩ±1%)；
2) $B_{25/50}$ 数值：3950K±1% (B-value:$B_{25/50}$: 3950K±1%)；
3) 线材：φ0.3 镀锡铜包钢线 (Φ0.3 tinned copper-weld steel wire)；
4) 封装：黑色环氧树脂包封 (Black Epoxy)；
5) 符合 RoHS 环保要求 (Meet environmental protection requirements:RoHS)。

4、可靠性 Reliability

No.	项目 Test Item	试验标准 Test Standard	试验条件及方法 Test Conditions / Methods	性能要求 Acceptance Criteria
4.1	引出端强度 Terminal strength	IEC60068-2-21	固定电阻端，拉力：5±1 N，时间：10±1 秒 Fixed resistor end, Pull strength: 5±1 N, time: 10±1 sec	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$
4.2	可焊性 Solder ability	IEC60068-2-20	温度：245±5°C，时间：2-3 秒 temperature: 245±5°C, for 2-3 sec	着锡面积≥95% Coverage area≥95%
4.3	耐焊接热 Withstand weiling temp	IEC60068-2-20	锡锅温度：260±5°C，浸入深度距电阻体 6mm，时间 5±1 秒 Temperature of tin pot: 260±5°C, insert deepth from body of resistance 6mm, time 5±1 senconds	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$
4.4	稳态湿热 Steady humidity and heat	IEC60068-2-78	温度：40°C±2°C，湿度：93±2%，时间：500 小时 Temp: 40°C±2°C, humidity: 93±2%, Time: 500 hrs	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$
4.5	温度快速变化 Rapid changes in temperature	IEC60068-2-14	-55°C 30min→25°C 5min→125°C 30min→25°C 5min, 5 cycles	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$
4.6	高温储存 High temperature storage	IEC60068-2-2	温度：125°C±5°C 时间：1000 小时 Temp: 125°C±5°C, Time: 1000 hrs	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$
4.7	低温储存 Low temperature storage	IEC60068-2-1	温度：-55°C，时间：1000 小时 Temp: -55°C, Time: 1000 hrs	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$

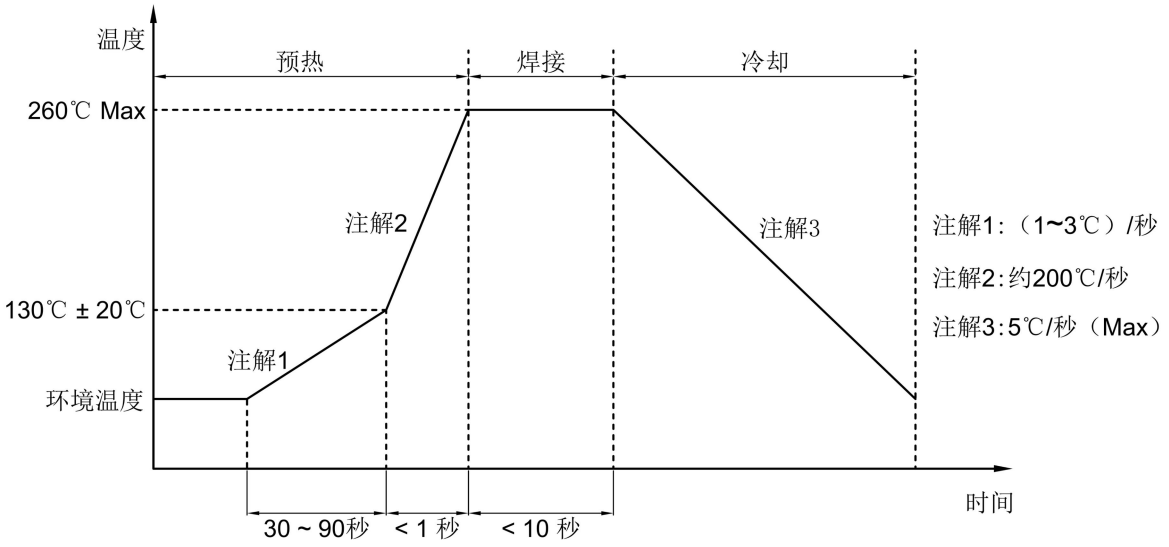
▲注： 1）稳态湿热及温度快速变化试验结束后，样品需在常温环境下静置 2 小时后再做性能测试；

▲Note：1）After the test of steady-state humid heat and rapid temperature change, the sample should be kept for 2 hours at room temperature before performance test；

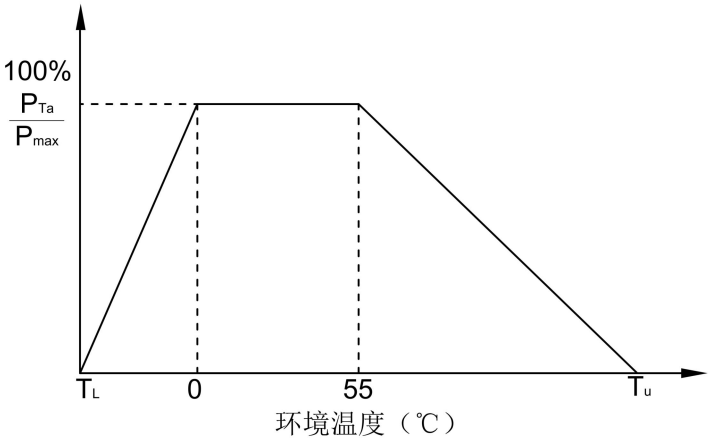
2）高温存储结束后，需随测试环境自然恢复至常温，再取出做性能测试。

2）After the test of high-temperature storage is complete, and then take it out for performance test when the test environment naturally regain to normal temperature.

5、推荐波峰焊曲线 Recommended wave soldering profile



6、降功耗曲线 Power Derating Curve



例如：
环境温度（T_a）=90℃
最大工作温度(T_u)=125℃
For example:
Ambient temperature（T_a）=90℃
Maximum operating temperature（T_u）=125℃

$$P_{Ta} = \frac{T_u - T_a}{T_u - 55} \times P_{max} = 50\%P_{max}$$

7、产品包装 Product packaging

7.1 包装方式 Packing Type

☑ 散装方式 Bulk Type　　☐编编带方式 Reel Type

7.2 包装规格 Packing specification

No.	包装规格 Packing specification	包装材料、尺寸 Packing material, size	产品数量 Quantity
1	包装袋 Packing bag	自封口袋(self sealing bag) W×H=11cm×12cm	
2	编编带包装盒 reel packing box	包装盒 packing box W×G×H=335mm×240mm×50mm	

8、安装&使用注意事项 Installation & Use precautions

8.1 本产品的用途：温度测量与控制；
Usage of this product: Temperature measurement and control；
8.2 避免过大的电流引起元件自身发热而产生测量误差；
To avoid of testing tolerance caused by huge current upon the self-heat of component；
8.3 烙铁焊接时，焊接处距包封头部距离至少 2mm，焊接温度应低于 360℃，焊接时间＜3ses；
When soldering by soldering iron, the distance between the welding place and the coating head should be at least 2mm, the welding temperature should be lower than 360℃, and the welding time should be less than 3sec;
8.4 储存温度：-10℃～40℃；储存湿度：≤75% RH；
Storage temperature: -10℃～ 40℃; storage humidity: ≤75% RH；
8.5 避免存放在具有腐蚀性气体及光照的环境下；
To avoid of leaving with such environment as corrosive gases and illumination；
8.6 包装打开后需重新密封保存，贮存期 1 年，超过贮存期，可按本标准规定的项目重新检验，如符合要求仍可使用；
The packing need to be resealed since opened, storage period 1 year once valid, it should be retest according to regulated of criterion and can be still used if meet the requirement；
8.7 如在加工过程中需使用热缩管，热缩管热缩时不可使用电吹风进行吹制，建议热缩工艺，将套好热缩管后的产品放入恒温烘箱中，按 110℃/10-12min 进行热缩；
If the heat shrinkable tube is used in the manufacturing process, do not use a hair dryer to shrink the tube. This is a recommended heat shrinkable process that puts the product covered shrinkable tube into a constant temperature oven, and shrink them at 110℃/10 ~ 12min；
8.8 对于 MF52A、B、C、D 等型号的测温型 NTC 热敏电阻器，其均为径向引出线结构，不得将其两引线拉成 180°轴向使用；
For the MF52A, B, C, D Type NTC thermistors, they are all radial lead-out structure, shall not be used to pull its two leads into 180°axial；
8.9 芯片为陶瓷半导体，在使用过程中避免挤压或对环氧端头物理撞击，以免造成产品损伤。
The core chip of the product is a ceramic semiconductor. Avoid extrusion or physical impact on the epoxy end in the process of use, so as not to cause product damage。

8、产品认证 Product certification

No.	项目 Projects	产品认证 Product certification
8.1	质量管理体系认证 Quality Management System Certification	ISO9001:2015
		IATF16949：2016
8.2	环境管理体系认证 Environmental Management System Certification	ISO14001:2015
8.3	知识产权管理体系认证 Intellectual Property Management System Certification	GB/T29490-2013
8.4	环保检测报告 Environmental test report	RoHS 2.0
8.5	CQC 认证（CQC07001019009） CQC certificate（CQC07001019009）	
8.6	TUV 认证（R50245892） TUV certificate（R50245892）	
8.7	UL/cUL 认证（E240991） UL/cUL certificate（E240991）	

附表 I Attachment I

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R_{25}=50KΩ 精度:±1% $B_{25/50}$=3950K $B_{25/85}$=4091K 精度:±1%（P182-6B）

温度(°C)	电阻(KΩ)			电阻精度(%)		温度精度(°C)	
	最小值	中心值	最大值	△R	-△R	△T	-△T
-55	3868.86	4090	4311.13	5.406	-5.406	0.718	-0.718
-54	3557.59	3757.56	3957.53	5.321	-5.321	0.715	-0.715
-53	3286.45	3468.24	3650.03	5.241	-5.241	0.712	-0.712
-52	3047.61	3213.59	3379.58	5.165	-5.165	0.708	-0.708
-51	2835.06	2987.17	3139.28	5.092	-5.092	0.704	-0.704
-50	2644.19	2783.99	2923.79	5.021	-5.021	0.701	-0.701
-49	2471.4	2600.19	2728.98	4.953	-4.953	0.697	-0.697
-48	2313.87	2432.74	2551.62	4.886	-4.886	0.693	-0.693
-47	2169.37	2279.26	2389.15	4.821	-4.821	0.689	-0.689
-46	2036.15	2137.85	2239.55	4.757	-4.757	0.685	-0.685
-45	1912.78	2006.98	2101.19	4.693	-4.693	0.68	-0.68
-44	1798.12	1885.44	1972.76	4.631	-4.631	0.676	-0.676
-43	1691.25	1772.23	1853.21	4.569	-4.569	0.672	-0.672
-42	1591.39	1666.52	1741.64	4.507	-4.507	0.667	-0.667
-41	1497.92	1567.63	1637.34	4.446	-4.446	0.663	-0.663
-40	1410.31	1475	1539.68	4.385	-4.385	0.658	-0.658
-39	1328.09	1388.12	1448.15	4.324	-4.324	0.654	-0.654
-38	1250.87	1306.58	1362.3	4.264	-4.264	0.649	-0.649
-37	1178.31	1230.02	1281.73	4.203	-4.203	0.644	-0.644
-36	1110.1	1158.09	1206.08	4.143	-4.143	0.639	-0.639
-35	1045.98	1090.51	1135.04	4.083	-4.083	0.634	-0.634
-34	985.69	1027	1068.32	4.023	-4.023	0.629	-0.629
-33	928.997	967.336	1005.67	3.963	-3.963	0.625	-0.625
-32	875.693	911.266	946.838	3.903	-3.903	0.619	-0.619
-31	825.581	858.586	891.59	3.844	-3.844	0.614	-0.614
-30	778.476	809.097	839.718	3.784	-3.784	0.609	-0.609
-29	734.201	762.611	791.022	3.725	-3.725	0.604	-0.604
-28	692.592	718.952	745.312	3.666	-3.666	0.599	-0.599
-27	653.493	677.951	702.41	3.607	-3.607	0.594	-0.594

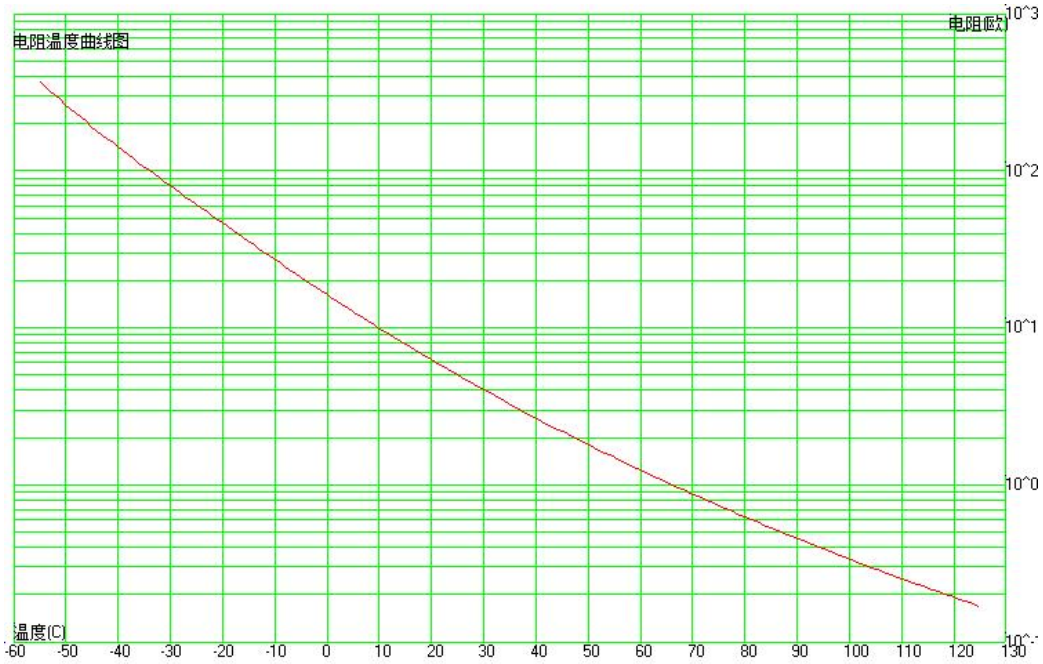
-26	616.755	639.45	662.146	3.549	-3.549	0.588	-0.588
-25	582.239	603.3	624.36	3.49	-3.49	0.583	-0.583
-24	549.81	569.356	588.902	3.433	-3.433	0.577	-0.577
-23	519.343	537.485	555.627	3.375	-3.375	0.572	-0.572
-22	490.719	507.56	524.401	3.318	-3.318	0.566	-0.566
-21	463.823	479.459	495.094	3.261	-3.261	0.561	-0.561
-20	438.55	453.069	467.587	3.204	-3.204	0.555	-0.555
-19	414.799	428.282	441.765	3.148	-3.148	0.549	-0.549
-18	392.474	404.998	417.521	3.092	-3.092	0.543	-0.543
-17	371.486	383.12	394.754	3.036	-3.036	0.538	-0.538
-16	351.75	362.56	373.37	2.981	-2.981	0.532	-0.532
-15	333.188	343.233	353.278	2.926	-2.926	0.526	-0.526
-14	315.724	325.06	334.397	2.872	-2.872	0.52	-0.52
-13	299.289	307.968	316.647	2.818	-2.818	0.513	-0.513
-12	283.817	291.886	299.956	2.764	-2.764	0.507	-0.507
-11	269.247	276.75	284.254	2.711	-2.711	0.501	-0.501
-10	255.521	262.5	269.478	2.658	-2.658	0.495	-0.495
-9	242.586	249.077	255.568	2.605	-2.605	0.488	-0.488
-8	230.392	236.43	242.468	2.553	-2.553	0.482	-0.482
-7	218.891	224.509	230.126	2.502	-2.502	0.475	-0.475
-6	208.04	213.267	218.493	2.45	-2.45	0.469	-0.469
-5	197.798	202.661	207.525	2.399	-2.399	0.462	-0.462
-4	188.127	192.652	197.177	2.348	-2.348	0.455	-0.455
-3	178.99	183.201	187.413	2.298	-2.298	0.449	-0.449
-2	170.355	174.274	178.193	2.248	-2.248	0.442	-0.442
-1	162.191	165.838	169.485	2.199	-2.199	0.435	-0.435
0	154.514	157.91	161.305	2.15	-2.15	0.428	-0.428
1	147.16	150.318	153.476	2.1	-2.1	0.421	-0.421
2	140.241	143.179	146.118	2.052	-2.052	0.414	-0.414
3	133.688	136.422	139.156	2.003	-2.003	0.406	-0.406
4	127.48	130.023	132.566	1.955	-1.955	0.399	-0.399
5	121.594	123.959	126.325	1.907	-1.907	0.392	-0.392
6	116.013	118.213	120.412	1.86	-1.86	0.384	-0.384
7	110.719	112.764	114.808	1.813	-1.813	0.377	-0.377
8	105.694	107.595	109.495	1.766	-1.766	0.369	-0.369
9	100.924	102.69	104.456	1.719	-1.719	0.361	-0.361

10	96.393	98.034	99.674	1.673	-1.673	0.354	-0.354
11	92.088	93.612	95.135	1.627	-1.627	0.346	-0.346
12	87.997	89.411	90.825	1.581	-1.581	0.338	-0.338
13	84.107	85.419	86.73	1.535	-1.535	0.33	-0.33
14	80.407	81.623	82.84	1.49	-1.49	0.322	-0.322
15	76.887	78.014	79.141	1.444	-1.444	0.313	-0.313
16	73.537	74.581	75.625	1.399	-1.399	0.305	-0.305
17	70.347	71.314	72.28	1.355	-1.355	0.297	-0.297
18	67.31	68.204	69.098	1.31	-1.31	0.288	-0.288
19	64.417	65.243	66.069	1.266	-1.266	0.279	-0.279
20	61.66	62.422	63.185	1.221	-1.221	0.27	-0.27
21	59.032	59.736	60.439	1.177	-1.177	0.261	-0.261
22	56.527	57.175	57.824	1.134	-1.134	0.251	-0.251
23	54.138	54.735	55.332	1.09	-1.09	0.239	-0.239
24	51.86	52.408	52.957	1.047	-1.047	0.221	-0.221
25	49.5	50	50.5	1	-1	0.213	-0.213
26	47.573	48.073	48.573	1.039	-1.039	0.265	-0.265
27	45.555	46.054	46.552	1.082	-1.082	0.265	-0.265
28	43.63	44.127	44.623	1.124	-1.124	0.272	-0.272
29	41.794	42.288	42.781	1.167	-1.167	0.282	-0.282
30	40.041	40.532	41.022	1.209	-1.209	0.293	-0.293
31	38.369	38.855	39.342	1.252	-1.252	0.303	-0.303
32	36.772	37.254	37.736	1.294	-1.294	0.315	-0.315
33	35.247	35.724	36.202	1.336	-1.336	0.326	-0.326
34	33.791	34.263	34.735	1.377	-1.377	0.338	-0.338
35	32.4	32.867	33.333	1.419	-1.419	0.349	-0.349
36	31.072	31.532	31.993	1.461	-1.461	0.361	-0.361
37	29.802	30.257	30.711	1.502	-1.502	0.373	-0.373
38	28.589	29.037	29.486	1.543	-1.543	0.385	-0.385
39	27.43	27.872	28.313	1.584	-1.584	0.397	-0.397
40	26.322	26.757	27.191	1.625	-1.625	0.409	-0.409
41	25.262	25.69	26.118	1.665	-1.665	0.421	-0.421
42	24.249	24.67	25.091	1.706	-1.706	0.434	-0.434
43	23.28	23.694	24.108	1.746	-1.746	0.446	-0.446
44	22.354	22.76	23.167	1.787	-1.787	0.458	-0.458
45	21.467	21.867	22.266	1.827	-1.827	0.471	-0.471

46	20.619	21.011	21.404	1.866	-1.866	0.484	-0.484
47	19.808	20.193	20.578	1.906	-1.906	0.496	-0.496
48	19.031	19.409	19.786	1.946	-1.946	0.509	-0.509
49	18.288	18.658	19.029	1.985	-1.985	0.522	-0.522
50	17.576	17.94	18.303	2.025	-2.025	0.535	-0.535
51	16.895	17.251	17.607	2.064	-2.064	0.548	-0.548
52	16.243	16.592	16.941	2.103	-2.103	0.561	-0.561
53	15.618	15.96	16.302	2.141	-2.141	0.574	-0.574
54	15.02	15.355	15.69	2.18	-2.18	0.587	-0.587
55	14.447	14.775	15.103	2.219	-2.219	0.601	-0.601
56	13.898	14.219	14.54	2.257	-2.257	0.614	-0.614
57	13.373	13.687	14.001	2.295	-2.295	0.627	-0.627
58	12.869	13.176	13.484	2.333	-2.333	0.641	-0.641
59	12.386	12.687	12.988	2.371	-2.371	0.654	-0.654
60	11.923	12.217	12.512	2.409	-2.409	0.668	-0.668
61	11.479	11.767	12.055	2.446	-2.446	0.682	-0.682
62	11.054	11.336	11.617	2.484	-2.484	0.696	-0.696
63	10.646	10.921	11.197	2.521	-2.521	0.71	-0.71
64	10.255	10.524	10.793	2.558	-2.558	0.724	-0.724
65	9.88	10.143	10.406	2.595	-2.595	0.738	-0.738
66	9.52	9.777	10.035	2.632	-2.632	0.752	-0.752
67	9.175	9.426	9.678	2.668	-2.668	0.766	-0.766
68	8.843	9.089	9.335	2.705	-2.705	0.78	-0.78
69	8.525	8.766	9.006	2.741	-2.741	0.795	-0.795
70	8.22	8.455	8.69	2.777	-2.777	0.809	-0.809
71	7.927	8.157	8.386	2.813	-2.813	0.823	-0.823
72	7.646	7.871	8.095	2.849	-2.849	0.838	-0.838
73	7.376	7.595	7.815	2.884	-2.884	0.853	-0.853
74	7.117	7.331	7.545	2.92	-2.92	0.867	-0.867
75	6.868	7.077	7.286	2.955	-2.955	0.882	-0.882
76	6.629	6.833	7.037	2.99	-2.99	0.897	-0.897
77	6.399	6.599	6.798	3.025	-3.025	0.912	-0.912
78	6.178	6.373	6.568	3.06	-3.06	0.927	-0.927
79	5.966	6.156	6.347	3.094	-3.094	0.942	-0.942
80	5.762	5.948	6.134	3.129	-3.129	0.957	-0.957
81	5.566	5.748	5.929	3.163	-3.163	0.972	-0.972

82	5.377	5.555	5.733	3.197	-3.197	0.988	-0.988
83	5.196	5.37	5.543	3.231	-3.231	1.003	-1.003
84	5.022	5.191	5.361	3.265	-3.265	1.018	-1.018
85	4.854	5.02	5.185	3.299	-3.299	1.034	-1.034
86	4.693	4.854	5.016	3.332	-3.332	1.05	-1.05
87	4.537	4.695	4.853	3.365	-3.365	1.065	-1.065
88	4.388	4.542	4.697	3.399	-3.399	1.081	-1.081
89	4.244	4.395	4.546	3.431	-3.431	1.097	-1.097
90	4.106	4.253	4.4	3.464	-3.464	1.113	-1.113
91	3.972	4.116	4.26	3.497	-3.497	1.129	-1.129
92	3.844	3.985	4.125	3.53	-3.53	1.145	-1.145
93	3.72	3.858	3.995	3.562	-3.562	1.161	-1.161
94	3.601	3.736	3.87	3.594	-3.594	1.177	-1.177
95	3.487	3.618	3.749	3.626	-3.626	1.193	-1.193
96	3.376	3.504	3.633	3.658	-3.658	1.21	-1.21
97	3.27	3.395	3.52	3.69	-3.69	1.226	-1.226
98	3.167	3.289	3.412	3.721	-3.721	1.242	-1.242
99	3.068	3.188	3.307	3.753	-3.753	1.259	-1.259
100	2.973	3.09	3.206	3.784	-3.784	1.276	-1.276
101	2.881	2.995	3.109	3.815	-3.815	1.292	-1.292
102	2.792	2.904	3.015	3.846	-3.846	1.309	-1.309
103	2.706	2.815	2.925	3.877	-3.877	1.326	-1.326
104	2.624	2.73	2.837	3.908	-3.908	1.343	-1.343
105	2.544	2.648	2.753	3.938	-3.938	1.36	-1.36
106	2.467	2.569	2.671	3.969	-3.969	1.377	-1.377
107	2.393	2.493	2.592	3.999	-3.999	1.394	-1.394
108	2.321	2.419	2.516	4.029	-4.029	1.411	-1.411
109	2.252	2.347	2.443	4.059	-4.059	1.429	-1.429
110	2.185	2.278	2.372	4.089	-4.089	1.446	-1.446
111	2.121	2.212	2.303	4.118	-4.118	1.463	-1.463
112	2.058	2.147	2.237	4.148	-4.148	1.481	-1.481
113	1.998	2.085	2.172	4.177	-4.177	1.498	-1.498
114	1.94	2.025	2.11	4.207	-4.207	1.516	-1.516
115	1.884	1.967	2.05	4.236	-4.236	1.534	-1.534
116	1.829	1.911	1.993	4.265	-4.265	1.552	-1.552
117	1.777	1.857	1.936	4.294	-4.294	1.569	-1.569

118	1.726	1.804	1.882	4.322	-4.322	1.587	-1.587
119	1.677	1.753	1.83	4.351	-4.351	1.605	-1.605
120	1.63	1.704	1.779	4.379	-4.379	1.623	-1.623
121	1.584	1.657	1.73	4.408	-4.408	1.642	-1.642
122	1.539	1.611	1.682	4.436	-4.436	1.66	-1.66
123	1.496	1.566	1.636	4.464	-4.464	1.678	-1.678
124	1.455	1.523	1.592	4.492	-4.492	1.696	-1.696
125	1.415	1.482	1.548	4.519	-4.519	1.715	-1.715



附表 II Attachment II

