编码(Coding)：JK/JXD260808005

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 103F3470（A1）
版次 REV.NO：	C0
日期 DATE：	2026-08-08

南京时恒电子科技有限公司
NANJING SHIHENG ELECTRONICS CO.,LTD.
地址：南京市江宁区湖熟镇金阳路 18 号
Address: No.18 Jinyang Road Hushu Town Jiangning District Nanjing China
邮编 Postcode：211121
TEL: 025-52121868
Http: //www.shiheng.com.cn E-MAIL: sales@shiheng.com.cn

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	103	F	3470	(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)

③ 103：25℃的零功率电阻值 10kΩ (Zero Power Resistance at 25℃is 10kΩ)

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 3470：$B_{25/50}$ 值 3470K ($B_{25/50}$:3470K)

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

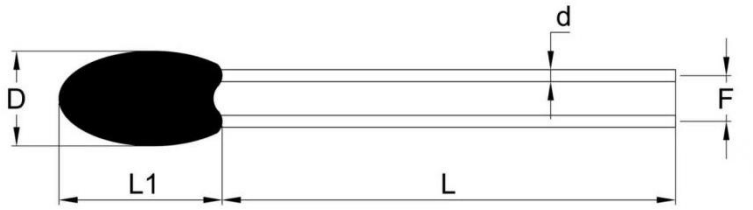
2、电气性能 Electrical Characteristics

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	10kΩ±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	3470K±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 103F3470(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}：10kΩ±1% (Zero Power Resistance: R_{25}：10kΩ±1%)；
2) $B_{25/50}$ 数值：3470K±1% (B-value:$B_{25/50}$: 3470K±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℃，时间：2-3 秒 temperature: 245±5℃, 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℃，浸入深度距电阻体 6mm，时间 5±1 秒 Temperature of tin pot: 260±5℃, 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℃±2℃，湿度：93±2%，时间：500 小时 Temp: 40℃±2℃, 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℃ 30min→25℃ 5min→125℃ 30min→25℃ 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℃±5℃ 时间：1000 小时 Temp: 125℃±5℃, 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℃，时间：1000 小时 Temp: -55℃, Time: 1000 hrs	无可见性损伤 No obvious damage $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$

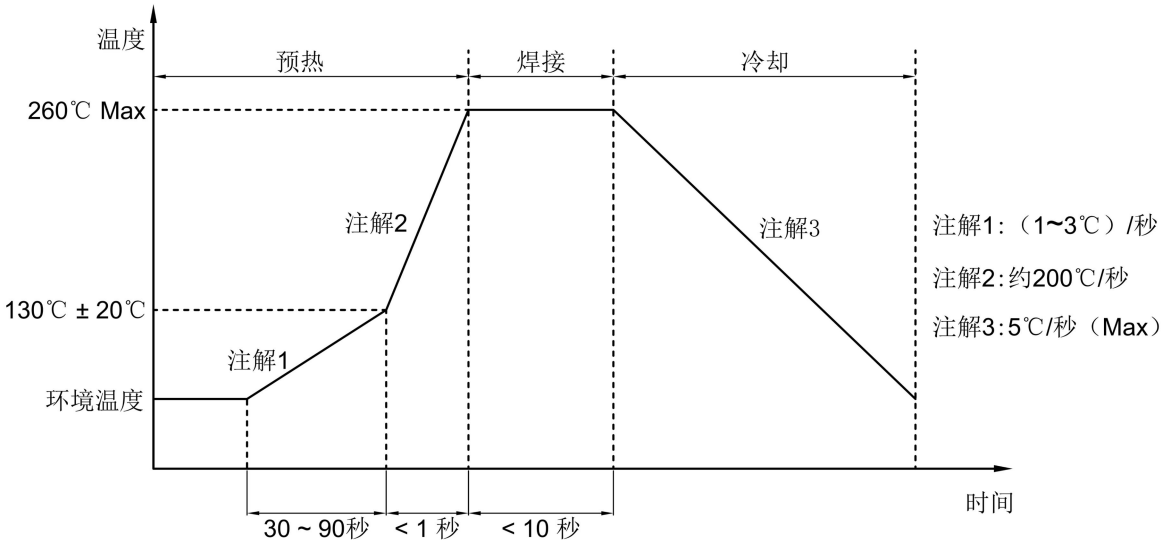
▲注： 1）稳态湿热及温度快速变化试验结束后，样品需在常温环境下静置 2 小时后再做性能测试；

▲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；

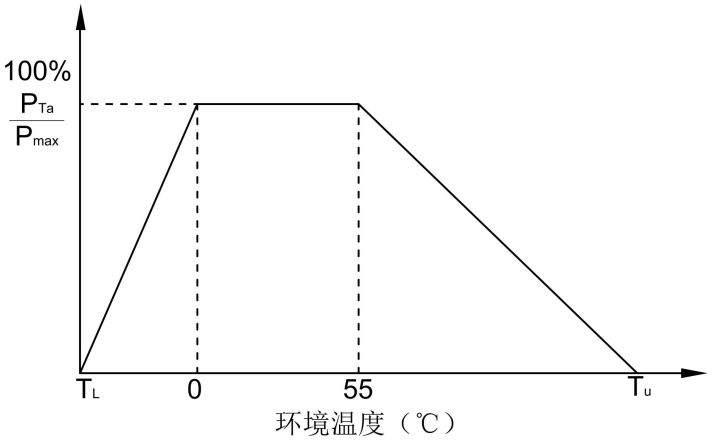
2）高温存储结束后，需随测试环境自然恢复至常温，再取出做性能测试。

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

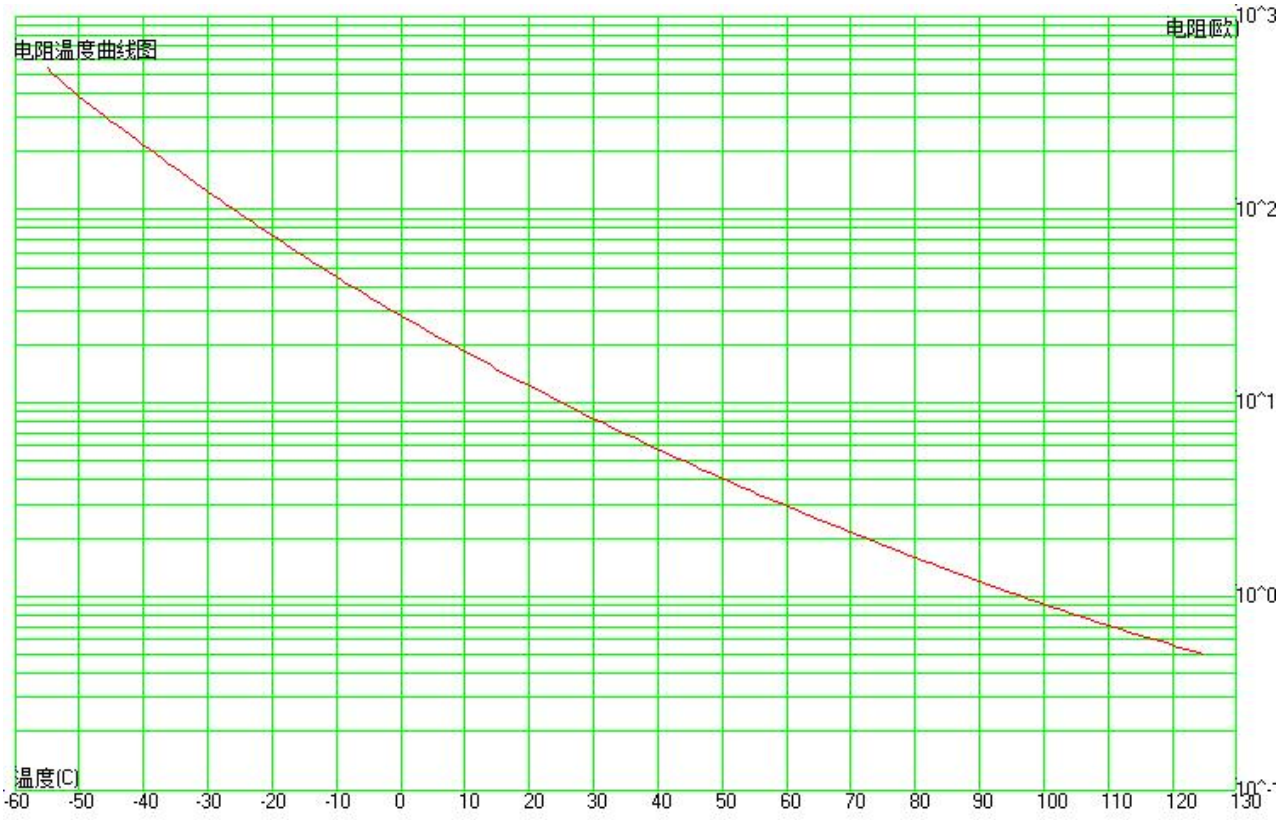
南京时恒电子科技有限公司							
R_{25}=10KΩ 精度:±1% $B_{25/50}$=3470K 精度:±1%（P175-9）							
温度(℃)	电阻(kΩ)			电阻精度(%)		温度精度(℃)	
	最小值	中心值	最大值	△R	-△R	△T	-△T
-55	509.853	536.6	563.346	4.984	-4.984	0.732	-0.732
-54	474.75	499.276	523.802	4.912	-4.912	0.729	-0.729
-53	443.436	466.006	488.576	4.843	-4.843	0.726	-0.726
-52	415.241	436.072	456.902	4.776	-4.776	0.722	-0.722
-51	389.648	408.918	428.188	4.712	-4.712	0.719	-0.719
-50	366.249	384.109	401.97	4.649	-4.649	0.715	-0.715
-49	344.725	361.304	377.882	4.588	-4.588	0.711	-0.711
-48	324.824	340.231	355.638	4.528	-4.528	0.707	-0.707
-47	306.342	320.673	335.004	4.469	-4.469	0.703	-0.703
-46	289.116	302.456	315.796	4.41	-4.41	0.699	-0.699
-45	273.014	285.438	297.862	4.352	-4.352	0.695	-0.695
-44	257.927	269.502	281.078	4.295	-4.295	0.691	-0.691
-43	243.764	254.552	265.34	4.238	-4.238	0.687	-0.687
-42	230.45	240.506	250.562	4.181	-4.181	0.682	-0.682
-41	217.92	227.295	236.671	4.124	-4.124	0.678	-0.678
-40	206.118	214.86	223.601	4.068	-4.068	0.674	-0.674
-39	194.995	203.146	211.297	4.012	-4.012	0.669	-0.669
-38	184.508	192.108	199.709	3.956	-3.956	0.665	-0.665
-37	174.617	181.705	188.792	3.9	-3.9	0.66	-0.66
-36	165.287	171.897	178.506	3.845	-3.845	0.655	-0.655
-35	156.485	162.649	168.813	3.789	-3.789	0.651	-0.651
-34	148.182	153.93	159.679	3.734	-3.734	0.646	-0.646
-33	140.348	145.71	151.071	3.679	-3.679	0.641	-0.641
-32	132.957	137.958	142.959	3.625	-3.625	0.636	-0.636
-31	125.985	130.65	135.315	3.57	-3.57	0.631	-0.631
-30	119.408	123.76	128.111	3.516	-3.516	0.626	-0.626
-29	113.203	117.263	121.323	3.462	-3.462	0.621	-0.621
-28	107.349	111.137	114.926	3.408	-3.408	0.616	-0.616
-27	101.826	105.362	108.897	3.355	-3.355	0.611	-0.611
-26	96.616	99.915	103.215	3.302	-3.302	0.606	-0.606
-25	91.7	94.78	97.859	3.249	-3.249	0.601	-0.601
-24	87.06	89.936	92.811	3.196	-3.196	0.595	-0.595
-23	82.682	85.367	88.051	3.144	-3.144	0.59	-0.59
-22	78.549	81.056	83.563	3.092	-3.092	0.585	-0.585
-21	74.647	76.989	79.33	3.041	-3.041	0.579	-0.579
-20	70.963	73.15	75.337	2.99	-2.99	0.574	-0.574
-19	67.483	69.526	71.57	2.939	-2.939	0.568	-0.568
-18	64.195	66.105	68.014	2.888	-2.888	0.562	-0.562
-17	61.088	62.873	64.658	2.838	-2.838	0.557	-0.557
-16	58.151	59.819	61.488	2.789	-2.789	0.551	-0.551

-15	55.374	56.934	58.493	2.739	-2.739	0.545	-0.545
-14	52.747	54.206	55.664	2.69	-2.69	0.539	-0.539
-13	50.262	51.626	52.99	2.641	-2.641	0.533	-0.533
-12	47.91	49.185	50.461	2.593	-2.593	0.527	-0.527
-11	45.683	46.876	48.069	2.545	-2.545	0.521	-0.521
-10	43.573	44.69	45.806	2.497	-2.497	0.515	-0.515
-9	41.575	42.619	43.663	2.449	-2.449	0.509	-0.509
-8	39.681	40.658	41.635	2.402	-2.402	0.502	-0.502
-7	37.885	38.799	39.713	2.355	-2.355	0.496	-0.496
-6	36.181	37.037	37.892	2.309	-2.309	0.489	-0.489
-5	34.565	35.365	36.166	2.263	-2.263	0.483	-0.483
-4	33.031	33.78	34.529	2.217	-2.217	0.476	-0.476
-3	31.574	32.275	32.976	2.171	-2.171	0.47	-0.47
-2	30.191	30.847	31.502	2.126	-2.126	0.463	-0.463
-1	28.876	29.49	30.104	2.081	-2.081	0.456	-0.456
0	27.538	28.11	28.681	2.033	-2.033	0.45	-0.45
1	26.438	26.975	27.513	1.992	-1.992	0.443	-0.443
2	25.308	25.811	26.314	1.948	-1.948	0.436	-0.436
3	24.232	24.703	25.173	1.904	-1.904	0.429	-0.429
4	23.209	23.649	24.089	1.86	-1.86	0.422	-0.422
5	22.235	22.646	23.058	1.817	-1.817	0.414	-0.414
6	21.306	21.691	22.076	1.774	-1.774	0.407	-0.407
7	20.422	20.782	21.142	1.731	-1.731	0.4	-0.4
8	19.58	19.916	20.253	1.689	-1.689	0.392	-0.392
9	18.777	19.091	19.405	1.646	-1.646	0.385	-0.385
10	18.011	18.305	18.598	1.604	-1.604	0.378	-0.378
11	17.28	17.555	17.829	1.562	-1.562	0.37	-0.37
12	16.583	16.84	17.096	1.521	-1.521	0.362	-0.362
13	15.918	16.158	16.397	1.479	-1.479	0.355	-0.355
14	15.284	15.507	15.73	1.438	-1.438	0.347	-0.347
15	14.677	14.886	15.094	1.397	-1.397	0.339	-0.339
16	14.099	14.292	14.486	1.357	-1.357	0.331	-0.331
17	13.545	13.726	13.907	1.316	-1.316	0.323	-0.323
18	13.017	13.185	13.354	1.276	-1.276	0.315	-0.315
19	12.512	12.669	12.825	1.236	-1.236	0.307	-0.307
20	12.029	12.175	12.321	1.196	-1.196	0.298	-0.298
21	11.567	11.703	11.838	1.157	-1.157	0.29	-0.29
22	11.126	11.252	11.377	1.117	-1.117	0.281	-0.281
23	10.703	10.82	10.937	1.078	-1.078	0.271	-0.271
24	10.299	10.408	10.516	1.039	-1.039	0.259	-0.259
25	9.9	10	10.1	1	-1	0.25	-0.25
26	9.535	9.635	9.735	1.037	-1.037	0.28	-0.28
27	9.174	9.273	9.373	1.075	-1.075	0.287	-0.287
28	8.828	8.927	9.026	1.113	-1.113	0.297	-0.297
29	8.497	8.596	8.695	1.151	-1.151	0.308	-0.308
30	8.18	8.278	8.377	1.188	-1.188	0.319	-0.319

31	7.876	7.974	8.072	1.226	-1.226	0.331	-0.331
32	7.586	7.683	7.78	1.263	-1.263	0.343	-0.343
33	7.307	7.403	7.5	1.3	-1.3	0.355	-0.355
34	7.04	7.136	7.231	1.337	-1.337	0.367	-0.367
35	6.785	6.879	6.974	1.374	-1.374	0.379	-0.379
36	6.539	6.633	6.727	1.41	-1.41	0.391	-0.391
37	6.304	6.397	6.49	1.446	-1.446	0.404	-0.404
38	6.079	6.171	6.262	1.482	-1.482	0.416	-0.416
39	5.863	5.953	6.044	1.518	-1.518	0.429	-0.429
40	5.656	5.745	5.834	1.554	-1.554	0.441	-0.441
41	5.457	5.545	5.633	1.589	-1.589	0.454	-0.454
42	5.266	5.353	5.44	1.624	-1.624	0.467	-0.467
43	5.082	5.168	5.254	1.66	-1.66	0.48	-0.48
44	4.906	4.991	5.075	1.694	-1.694	0.492	-0.492
45	4.737	4.821	4.904	1.729	-1.729	0.505	-0.505
46	4.575	4.657	4.739	1.764	-1.764	0.518	-0.518
47	4.419	4.5	4.581	1.798	-1.798	0.532	-0.532
48	4.269	4.349	4.428	1.832	-1.832	0.545	-0.545
49	4.125	4.203	4.282	1.866	-1.866	0.558	-0.558
50	3.986	4.064	4.141	1.9	-1.9	0.571	-0.571
51	3.853	3.929	4.005	1.934	-1.934	0.585	-0.585
52	3.725	3.8	3.875	1.967	-1.967	0.598	-0.598
53	3.602	3.675	3.749	2	-2	0.612	-0.612
54	3.483	3.556	3.628	2.033	-2.033	0.625	-0.625
55	3.369	3.44	3.511	2.066	-2.066	0.639	-0.639
56	3.259	3.329	3.399	2.099	-2.099	0.653	-0.653
57	3.154	3.222	3.291	2.132	-2.132	0.667	-0.667
58	3.052	3.12	3.187	2.164	-2.164	0.681	-0.681
59	2.954	3.02	3.087	2.197	-2.197	0.695	-0.695
60	2.86	2.925	2.99	2.229	-2.229	0.709	-0.709
61	2.769	2.833	2.897	2.261	-2.261	0.723	-0.723
62	2.681	2.744	2.807	2.293	-2.293	0.737	-0.737
63	2.597	2.658	2.72	2.324	-2.324	0.751	-0.751
64	2.515	2.576	2.637	2.356	-2.356	0.766	-0.766
65	2.437	2.496	2.556	2.387	-2.387	0.78	-0.78
66	2.361	2.42	2.478	2.418	-2.418	0.795	-0.795
67	2.288	2.346	2.403	2.449	-2.449	0.809	-0.809
68	2.218	2.274	2.331	2.48	-2.48	0.824	-0.824
69	2.15	2.205	2.261	2.511	-2.511	0.839	-0.839
70	2.084	2.139	2.193	2.542	-2.542	0.853	-0.853
71	2.021	2.074	2.128	2.572	-2.572	0.868	-0.868
72	1.96	2.012	2.065	2.603	-2.603	0.883	-0.883
73	1.901	1.953	2.004	2.633	-2.633	0.898	-0.898
74	1.844	1.895	1.945	2.663	-2.663	0.913	-0.913
75	1.789	1.839	1.888	2.693	-2.693	0.928	-0.928
76	1.736	1.785	1.833	2.723	-2.723	0.943	-0.943

77	1.685	1.733	1.78	2.752	-2.752	0.959	-0.959
78	1.635	1.682	1.729	2.782	-2.782	0.974	-0.974
79	1.588	1.634	1.68	2.811	-2.811	0.989	-0.989
80	1.541	1.587	1.632	2.841	-2.841	1.005	-1.005
81	1.497	1.541	1.585	2.87	-2.87	1.021	-1.021
82	1.454	1.497	1.54	2.899	-2.899	1.036	-1.036
83	1.412	1.454	1.497	2.927	-2.927	1.052	-1.052
84	1.371	1.413	1.455	2.956	-2.956	1.068	-1.068
85	1.332	1.374	1.415	2.985	-2.985	1.083	-1.083
86	1.295	1.335	1.375	3.013	-3.013	1.099	-1.099
87	1.258	1.298	1.337	3.041	-3.041	1.115	-1.115
88	1.223	1.262	1.301	3.07	-3.07	1.131	-1.131
89	1.189	1.227	1.265	3.098	-3.098	1.148	-1.148
90	1.156	1.193	1.231	3.125	-3.125	1.164	-1.164
91	1.124	1.161	1.197	3.153	-3.153	1.18	-1.18
92	1.093	1.129	1.165	3.181	-3.181	1.196	-1.196
93	1.063	1.098	1.134	3.208	-3.208	1.213	-1.213
94	1.034	1.069	1.104	3.235	-3.235	1.229	-1.229
95	1.006	1.04	1.074	3.263	-3.263	1.246	-1.246
96	0.979	1.013	1.046	3.289	-3.289	1.263	-1.263
97	0.953	0.986	1.019	3.316	-3.316	1.279	-1.279
98	0.928	0.96	0.992	3.343	-3.343	1.296	-1.296
99	0.903	0.935	0.966	3.369	-3.369	1.313	-1.313
100	0.88	0.911	0.941	3.396	-3.396	1.33	-1.33
101	0.857	0.887	0.917	3.422	-3.422	1.347	-1.347
102	0.834	0.864	0.894	3.448	-3.448	1.364	-1.364
103	0.813	0.842	0.871	3.474	-3.474	1.382	-1.382
104	0.792	0.821	0.85	3.499	-3.499	1.399	-1.399
105	0.772	0.8	0.828	3.525	-3.525	1.416	-1.416
106	0.753	0.78	0.808	3.55	-3.55	1.434	-1.434
107	0.734	0.761	0.788	3.575	-3.575	1.451	-1.451
108	0.715	0.742	0.769	3.6	-3.6	1.469	-1.469
109	0.698	0.724	0.75	3.625	-3.625	1.487	-1.487
110	0.681	0.707	0.732	3.649	-3.649	1.504	-1.504
111	0.664	0.69	0.715	3.674	-3.674	1.522	-1.522
112	0.648	0.673	0.698	3.698	-3.698	1.54	-1.54
113	0.633	0.657	0.682	3.722	-3.722	1.558	-1.558
114	0.618	0.642	0.666	3.745	-3.745	1.576	-1.576
115	0.604	0.627	0.651	3.769	-3.769	1.595	-1.595
116	0.59	0.613	0.636	3.792	-3.792	1.613	-1.613
117	0.576	0.599	0.622	3.815	-3.815	1.631	-1.631
118	0.563	0.586	0.608	3.837	-3.837	1.65	-1.65
119	0.55	0.573	0.595	3.86	-3.86	1.669	-1.669
120	0.538	0.56	0.582	3.882	-3.882	1.687	-1.687
121	0.527	0.548	0.569	3.904	-3.904	1.706	-1.706
122	0.515	0.536	0.557	3.925	-3.925	1.725	-1.725

123	0.504	0.525	0.546	3.946	-3.946	1.744	-1.744
124	0.494	0.514	0.534	3.967	-3.967	1.763	-1.763
125	0.483	0.504	0.524	3.988	-3.988	1.782	-1.782



附表 II Attachment II

