编码(Coding)：JK/JXD260807002

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 502J3470(A1)
版次 REV.NO：	C0
日期 DATE：	2026-08-07

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	502	J	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)

③ 502：25℃的零功率电阻值 5kΩ (Zero Power Resistance at 25℃is 5kΩ)

④ J：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)

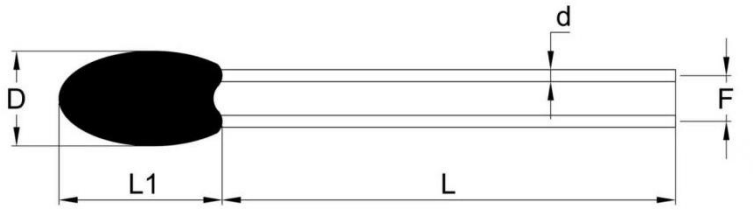
2、电气性能 Electrical Characteristics

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	5kΩ±5%
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 502J3470(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}：5kΩ±5% (Zero Power Resistance: R_{25}：5kΩ±5%)；
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 $\|\Delta R_{25}/R_{25}\|\leqslant 2\%$

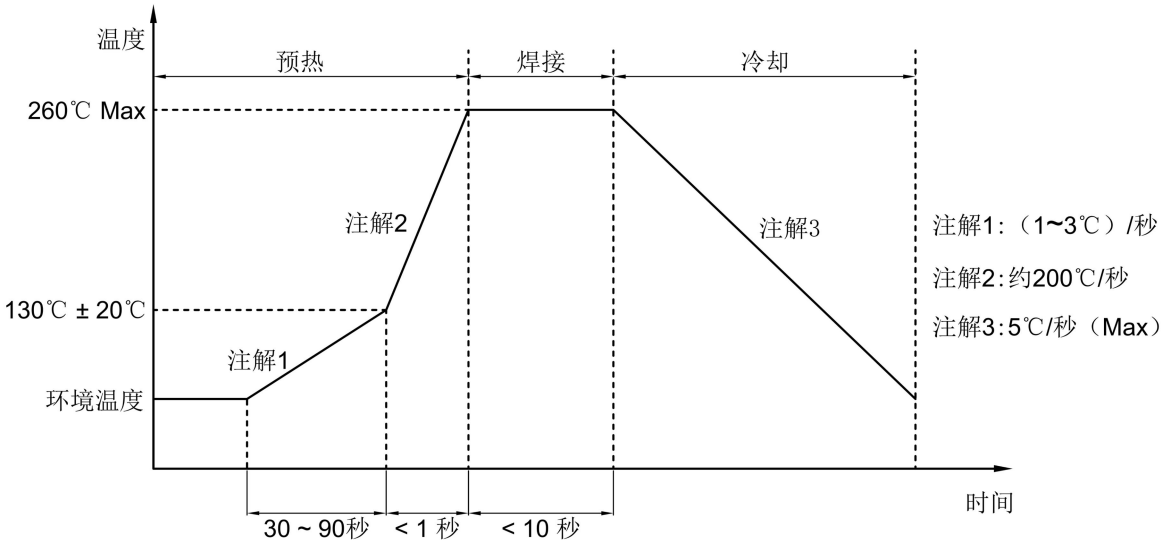
▲注： 1）稳态湿热及温度快速变化试验结束后，样品需在常温环境下静置 2 小时后再做性能测试；

▲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；

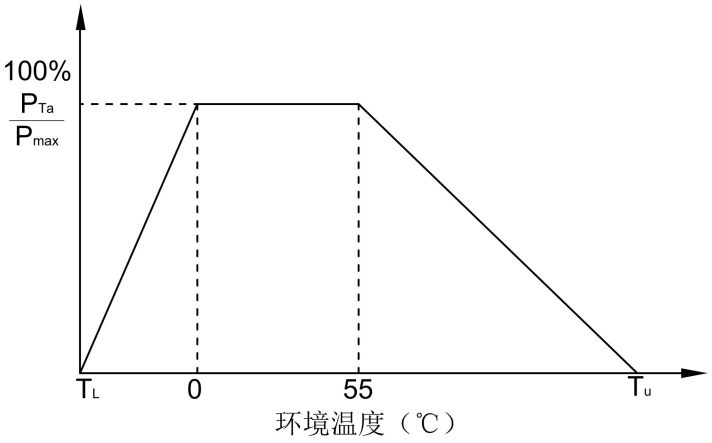
2）高温存储结束后，需随测试环境自然恢复至常温，再取出做性能测试。

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

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R_{25}=5KΩ 精度:±5%　$B_{25/50}$=3470K　精度:±1%（P219-2）

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	264.626	291.02	317.413	9.069	-9.069	1.306	-1.306
-54	250.022	274.784	299.547	9.011	-9.011	1.306	-1.306
-53	235.549	258.707	281.864	8.951	-8.951	1.306	-1.306
-52	221.448	243.052	264.656	8.888	-8.888	1.307	-1.307
-51	207.882	228.003	248.123	8.824	-8.824	1.308	-1.308
-50	194.956	213.673	232.389	8.759	-8.759	1.309	-1.309
-49	182.73	200.128	217.527	8.693	-8.693	1.31	-1.31
-48	171.229	187.397	203.565	8.627	-8.627	1.312	-1.312
-47	160.455	175.479	190.504	8.562	-8.562	1.314	-1.314
-46	150.392	164.356	178.321	8.496	-8.496	1.315	-1.315
-45	141.014	153.998	166.981	8.431	-8.431	1.317	-1.317
-44	132.286	144.364	156.442	8.366	-8.366	1.319	-1.319
-43	124.17	135.413	146.655	8.302	-8.302	1.321	-1.321
-42	116.627	127.098	137.569	8.238	-8.238	1.322	-1.322
-41	109.615	119.375	129.135	8.175	-8.175	1.324	-1.324
-40	103.096	112.2	121.303	8.113	-8.113	1.325	-1.325
-39	97.032	105.53	114.027	8.052	-8.052	1.327	-1.327
-38	91.388	99.326	107.263	7.991	-7.991	1.328	-1.328
-37	86.13	93.55	100.97	7.931	-7.931	1.329	-1.329
-36	81.229	88.17	95.111	7.872	-7.872	1.33	-1.33
-35	76.655	83.152	89.649	7.813	-7.813	1.332	-1.332
-34	72.383	78.468	84.554	7.755	-7.755	1.333	-1.333
-33	68.389	74.093	79.796	7.698	-7.698	1.333	-1.333
-32	64.651	70	75.349	7.641	-7.641	1.334	-1.334
-31	61.151	66.17	71.189	7.584	-7.584	1.335	-1.335
-30	57.869	62.581	67.293	7.528	-7.528	1.336	-1.336
-29	54.791	59.216	63.642	7.473	-7.473	1.337	-1.337
-28	51.9	56.058	60.217	7.418	-7.418	1.337	-1.337
-27	49.183	53.093	57.003	7.364	-7.364	1.338	-1.338

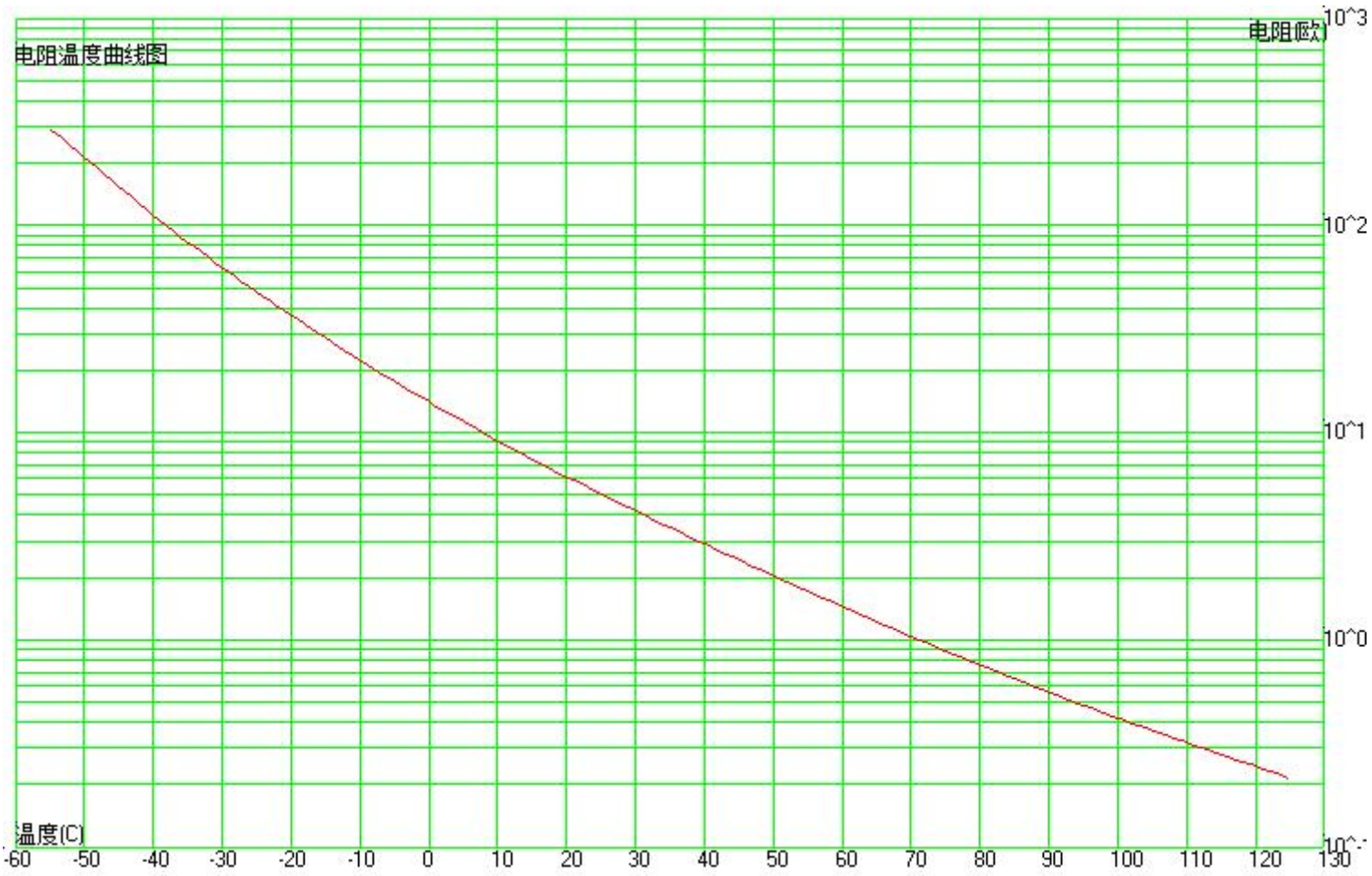
-26	46.628	50.306	53.983	7.31	-7.31	1.338	-1.338
-25	44.224	47.685	51.145	7.256	-7.256	1.339	-1.339
-24	41.961	45.218	48.475	7.203	-7.203	1.339	-1.339
-23	39.828	42.896	45.963	7.15	-7.15	1.339	-1.339
-22	37.818	40.708	43.597	7.098	-7.098	1.34	-1.34
-21	35.923	38.646	41.369	7.046	-7.046	1.34	-1.34
-20	34.134	36.701	39.268	6.994	-6.994	1.34	-1.34
-19	32.446	34.867	37.288	6.943	-6.943	1.34	-1.34
-18	30.852	33.136	35.419	6.892	-6.892	1.341	-1.341
-17	29.346	31.501	33.657	6.841	-6.841	1.341	-1.341
-16	27.923	29.958	31.992	6.791	-6.791	1.341	-1.341
-15	26.578	28.5	30.421	6.741	-6.741	1.341	-1.341
-14	25.307	27.122	28.936	6.691	-6.691	1.341	-1.341
-13	24.104	25.819	27.534	6.642	-6.642	1.341	-1.341
-12	22.966	24.587	26.208	6.593	-6.593	1.341	-1.341
-11	21.889	23.422	24.955	6.544	-6.544	1.341	-1.341
-10	20.869	22.32	23.77	6.496	-6.496	1.341	-1.341
-9	19.904	21.276	22.648	6.448	-6.448	1.341	-1.341
-8	18.99	20.289	21.587	6.401	-6.401	1.341	-1.341
-7	18.124	19.353	20.583	6.353	-6.353	1.341	-1.341
-6	17.303	18.467	19.632	6.307	-6.307	1.34	-1.34
-5	16.524	17.628	18.732	6.26	-6.26	1.34	-1.34
-4	15.787	16.833	17.879	6.214	-6.214	1.34	-1.34
-3	15.087	16.078	17.07	6.168	-6.168	1.339	-1.339
-2	14.423	15.363	16.304	6.122	-6.122	1.339	-1.339
-1	13.792	14.685	15.577	6.077	-6.077	1.338	-1.338
0	13.217	14.066	14.914	6.034	-6.034	1.336	-1.336
1	12.626	13.43	14.234	5.988	-5.988	1.337	-1.337
2	12.086	12.849	13.613	5.944	-5.944	1.336	-1.336
3	11.573	12.298	13.024	5.9	-5.9	1.335	-1.335
4	11.085	11.774	12.464	5.856	-5.856	1.334	-1.334
5	10.621	11.277	11.932	5.813	-5.813	1.333	-1.333
6	10.18	10.803	11.426	5.77	-5.77	1.332	-1.332
7	9.76	10.353	10.946	5.727	-5.727	1.331	-1.331
8	9.36	9.924	10.488	5.685	-5.685	1.329	-1.329
9	8.979	9.516	10.053	5.643	-5.643	1.327	-1.327

10	8.616	9.128	9.639	5.602	-5.602	1.325	-1.325
11	8.27	8.757	9.244	5.56	-5.56	1.323	-1.323
12	7.941	8.405	8.868	5.519	-5.519	1.321	-1.321
13	7.626	8.068	8.51	5.478	-5.478	1.318	-1.318
14	7.326	7.747	8.169	5.438	-5.438	1.315	-1.315
15	7.039	7.441	7.843	5.397	-5.397	1.311	-1.311
16	6.766	7.149	7.532	5.357	-5.357	1.307	-1.307
17	6.504	6.87	7.235	5.317	-5.317	1.302	-1.302
18	6.255	6.603	6.952	5.278	-5.278	1.296	-1.296
19	6.016	6.348	6.681	5.238	-5.238	1.289	-1.289
20	5.787	6.105	6.422	5.199	-5.199	1.279	-1.279
21	5.569	5.872	6.175	5.16	-5.16	1.266	-1.266
22	5.36	5.649	5.938	5.122	-5.122	1.245	-1.245
23	5.159	5.436	5.712	5.083	-5.083	1.207	-1.207
24	4.968	5.232	5.496	5.045	-5.045	1.108	-1.108
25	4.75	5	5.25	5	-5	1.105	-1.105
26	4.605	4.849	5.093	5.03	-5.03	1.646	-1.646
27	4.432	4.669	4.906	5.068	-5.068	1.492	-1.492
28	4.267	4.497	4.726	5.105	-5.105	1.46	-1.46
29	4.109	4.332	4.555	5.143	-5.143	1.454	-1.454
30	3.957	4.173	4.39	5.18	-5.18	1.458	-1.458
31	3.811	4.021	4.231	5.217	-5.217	1.466	-1.466
32	3.672	3.875	4.079	5.254	-5.254	1.478	-1.478
33	3.538	3.735	3.933	5.291	-5.291	1.491	-1.491
34	3.409	3.601	3.793	5.328	-5.328	1.505	-1.505
35	3.285	3.472	3.658	5.364	-5.364	1.52	-1.52
36	3.167	3.348	3.528	5.401	-5.401	1.536	-1.536
37	3.053	3.228	3.404	5.437	-5.437	1.551	-1.551
38	2.943	3.114	3.284	5.473	-5.473	1.568	-1.568
39	2.838	3.003	3.169	5.509	-5.509	1.584	-1.584
40	2.737	2.897	3.058	5.545	-5.545	1.601	-1.601
41	2.639	2.795	2.951	5.581	-5.581	1.618	-1.618
42	2.546	2.697	2.849	5.617	-5.617	1.635	-1.635
43	2.456	2.603	2.75	5.652	-5.652	1.653	-1.653
44	2.369	2.512	2.655	5.688	-5.688	1.67	-1.67
45	2.286	2.425	2.564	5.723	-5.723	1.688	-1.688

46	2.206	2.341	2.476	5.758	-5.758	1.706	-1.706
47	2.129	2.26	2.391	5.794	-5.794	1.723	-1.723
48	2.055	2.182	2.309	5.829	-5.829	1.741	-1.741
49	1.983	2.107	2.23	5.864	-5.864	1.759	-1.759
50	1.914	2.035	2.155	5.899	-5.899	1.778	-1.778
51	1.848	1.965	2.082	5.933	-5.933	1.796	-1.796
52	1.785	1.898	2.011	5.968	-5.968	1.814	-1.814
53	1.723	1.833	1.943	6.003	-6.003	1.833	-1.833
54	1.664	1.771	1.878	6.037	-6.037	1.851	-1.851
55	1.607	1.711	1.815	6.072	-6.072	1.87	-1.87
56	1.553	1.654	1.755	6.106	-6.106	1.889	-1.889
57	1.5	1.598	1.696	6.14	-6.14	1.908	-1.908
58	1.449	1.545	1.64	6.174	-6.174	1.927	-1.927
59	1.4	1.493	1.586	6.208	-6.208	1.946	-1.946
60	1.353	1.443	1.533	6.242	-6.242	1.965	-1.965
61	1.308	1.395	1.483	6.276	-6.276	1.984	-1.984
62	1.264	1.349	1.434	6.309	-6.309	2.004	-2.004
63	1.222	1.305	1.388	6.343	-6.343	2.023	-2.023
64	1.181	1.262	1.342	6.376	-6.376	2.043	-2.043
65	1.142	1.221	1.299	6.41	-6.41	2.063	-2.063
66	1.105	1.181	1.257	6.443	-6.443	2.082	-2.082
67	1.069	1.143	1.217	6.476	-6.476	2.102	-2.102
68	1.034	1.106	1.178	6.509	-6.509	2.122	-2.122
69	1	1.07	1.14	6.541	-6.541	2.143	-2.143
70	0.968	1.036	1.104	6.574	-6.574	2.163	-2.163
71	0.936	1.003	1.069	6.607	-6.607	2.183	-2.183
72	0.906	0.971	1.035	6.639	-6.639	2.204	-2.204
73	0.877	0.94	1.003	6.671	-6.671	2.225	-2.225
74	0.849	0.91	0.971	6.703	-6.703	2.245	-2.245
75	0.822	0.882	0.941	6.735	-6.735	2.266	-2.266
76	0.796	0.854	0.912	6.767	-6.767	2.288	-2.288
77	0.771	0.828	0.884	6.798	-6.798	2.309	-2.309
78	0.747	0.802	0.857	6.83	-6.83	2.33	-2.33
79	0.724	0.777	0.831	6.861	-6.861	2.352	-2.352
80	0.702	0.753	0.805	6.892	-6.892	2.373	-2.373
81	0.68	0.731	0.781	6.923	-6.923	2.395	-2.395

82	0.659	0.708	0.758	6.954	-6.954	2.417	-2.417
83	0.639	0.687	0.735	6.985	-6.985	2.439	-2.439
84	0.62	0.666	0.713	7.015	-7.015	2.461	-2.461
85	0.601	0.647	0.692	7.046	-7.046	2.483	-2.483
86	0.583	0.627	0.672	7.076	-7.076	2.505	-2.505
87	0.565	0.609	0.652	7.106	-7.106	2.528	-2.528
88	0.549	0.591	0.633	7.135	-7.135	2.551	-2.551
89	0.533	0.574	0.615	7.165	-7.165	2.573	-2.573
90	0.517	0.557	0.597	7.195	-7.195	2.596	-2.596
91	0.502	0.541	0.58	7.224	-7.224	2.619	-2.619
92	0.487	0.525	0.564	7.253	-7.253	2.642	-2.642
93	0.473	0.51	0.548	7.282	-7.282	2.666	-2.666
94	0.46	0.496	0.532	7.311	-7.311	2.689	-2.689
95	0.446	0.482	0.517	7.34	-7.34	2.713	-2.713
96	0.434	0.468	0.503	7.368	-7.368	2.736	-2.736
97	0.422	0.455	0.489	7.396	-7.396	2.76	-2.76
98	0.41	0.443	0.475	7.425	-7.425	2.784	-2.784
99	0.398	0.43	0.462	7.453	-7.453	2.808	-2.808
100	0.387	0.419	0.45	7.481	-7.481	2.832	-2.832
101	0.376	0.407	0.438	7.508	-7.508	2.856	-2.856
102	0.366	0.396	0.426	7.536	-7.536	2.88	-2.88
103	0.356	0.385	0.414	7.564	-7.564	2.905	-2.905
104	0.346	0.375	0.403	7.591	-7.591	2.929	-2.929
105	0.337	0.365	0.393	7.618	-7.618	2.954	-2.954
106	0.328	0.355	0.382	7.645	-7.645	2.978	-2.978
107	0.319	0.346	0.372	7.672	-7.672	3.003	-3.003
108	0.31	0.336	0.362	7.699	-7.699	3.028	-3.028
109	0.302	0.327	0.353	7.726	-7.726	3.053	-3.053
110	0.294	0.319	0.344	7.753	-7.753	3.078	-3.078
111	0.286	0.31	0.335	7.779	-7.779	3.103	-3.103
112	0.279	0.302	0.326	7.806	-7.806	3.128	-3.128
113	0.271	0.294	0.317	7.832	-7.832	3.153	-3.153
114	0.264	0.287	0.309	7.859	-7.859	3.179	-3.179
115	0.257	0.279	0.301	7.885	-7.885	3.204	-3.204
116	0.25	0.272	0.294	7.912	-7.912	3.229	-3.229
117	0.244	0.265	0.286	7.938	-7.938	3.255	-3.255

118	0.237	0.258	0.279	7.964	-7.964	3.28	-3.28
119	0.231	0.251	0.271	7.991	-7.991	3.306	-3.306
120	0.225	0.245	0.264	8.017	-8.017	3.331	-3.331
121	0.219	0.238	0.258	8.043	-8.043	3.356	-3.356
122	0.213	0.232	0.251	8.07	-8.07	3.382	-3.382
123	0.208	0.226	0.245	8.096	-8.096	3.407	-3.407
124	0.202	0.22	0.238	8.123	-8.123	3.433	-3.433
125	0.197	0.215	0.232	8.149	-8.149	3.458	-3.458



附表 II Attachment II

