



## 南京时恒电子科技有限公司

Nanjing Shiheng Electronics Co.,Ltd.

## 规格承认书

## APPROVAL SHEET

客户名称 CUSTOMER :

产品名称 PART NAME :

产品规格 PART NUMBER :

产品编号 PRODUCTCODE:

版次 REV.NO:

日期 DATE:

MF52 测温型 NTC 热敏电阻器

MF52 Series Temp Measurement NTC Thermistor

MF52A 103F3950(A2) UL:E240991

B0

确认

CONFIRM

客户 CLIENT		供货商/制造商 MANUFACTOR	
品保部 Quality Dep.		规格书制作 Design	吴仪
制造部 Production Dep.		业务部审核 Checked by sales	
工程部 Engineering Dep.		技术部审核 Checked by R&D	程鹏
		品质部审核 Checked by QA	李少媛

南京时恒电子科技有限公司

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# 变更记录表

## 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 datasheet,add to management and control for number of edition,refine to PN and draw.	王月婷	李少媛

## 1、产品型号说明 Product model specification

MF52    A    103    F    3950    (A2)


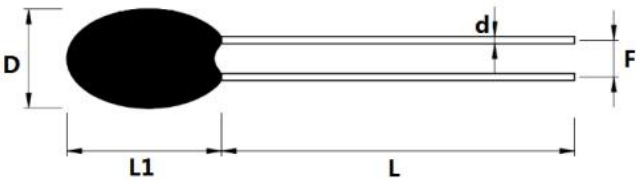
①            ②            ③            ④            ⑤            ⑥

- 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 3950: B25/50 值 3950K (B25/50:3950K)
- ⑥ (A2): 线材规格: 引线外径 Φ 0.45mm (Wire dimension: The outer diameter of lead wire is Φ 0.45mm)

## 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 <sub>25℃</sub>	T <sub>a</sub> =25±0.01℃ Test Power≤0.1mW	KΩ	10KΩ±1%
2.2	B 值 B-value	B <sub>25/50</sub>	$B=[(T_a \times T_b)/(T_b - T_a)] \times \ln(R_a/R_b)$ T <sub>a</sub> =25±0.01℃ T <sub>b</sub> =50℃±0.01℃	K	3950±1%
2.3	耗散系数 Thermal dissipation Coefficient	δ	静止空气中 In still air	mW/℃	≥2
2.4	时间常数 Thermal time constant	τ	静止空气中 In still air	sec	≤7
2.5	绝缘电阻 Insulation resistance	/	100V/DC 1min	MΩ	≥100
2.6	工作温度范围 Operating temperature range	/	/	℃	-55℃ ~ 125℃
2.7	最大额定功率 Maximum rated power	P <sub>max</sub>	/	mW	50
2.8	阻温特性 R&T-table	/	/	/	见附表 I See attached table I
2.9	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

 <b>产品图纸</b> 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 103F3950(A2)		审核 Approve:		日期 DATE	
<b>尺寸 Dimensions:</b>						
					(Unit: mm)	
						
D max	L1 max	L min	d±0.05	F±0.5		
3	4.5	25	0.45	2.2		
<b>技术要求 Technical requirements:</b>						
1) 零功率阻值: R25: 10K Ω ±1% (Zero Power Resistance: R25: 10KΩ±1%); 2) B25/50 数值: 3950K ±1% (B-value: B25/50: 3950K±1%); 3) 线材: Φ0.45 镀锡铜包钢线 (Φ0.45 tinned copper-weld steel wire); 4) 封装: 黑色改性环氧树脂包封 (Black function improvement Epoxy resin); 5) 符合 RoHS 环保要求 (Meet environmental protection requirements: RoHS)。						
<b>更新履历 Revised record sheet</b>						
版本 REV. NO	更新时间 REV. DATE	更新内容 Change content		申请人 Applicant	批准人 Approved	
B0		版本发行		吴仪	李少媛	

#### 4、可靠性 Reliability

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

▲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) 高温存储及低温存储结束后, 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 - and low-temperature storage is complete, and then take it out for performance test when the test environment naturally regain to normal temperature.

#### 5、产品包装 Product packaging

##### 5.1 包装方式 Packing Type

■ 散装方式 Bulk Type    □ 编带方式 Reel Type

##### 5.2 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) $W \times H = 11\text{mm} \times 12\text{mm}$	500

## 6、安装&使用注意事项 Installation & Use precautions

6.1 本产品的用途：温度测量与控制；application:test and control for temperature

6.2 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.

6.3 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 welded by soldering iron,weld spot should be 2mm at least from head,weld temperature should be under 360℃,time<3ses

6.4 储存温度：-10℃ ~ 40℃；储存湿度：≤75% RH；storage temp:-10℃ ~ 40℃；storage humidity:≤75% RH

6.5 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

6.6 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.

6.7 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；

In case of using heat-shrink tube,hair drier is prohibited.we suggest that put the product with heat shrink into constant-temperature box and heat shrink under 110℃/10-12min

## 7、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	环保检测报告 Environmental test report	RoHS 2.0
8.4	CQC 认证 CQC certificate	
8.5	苏省高新技术产品认证 High-tech product certificate in Jiangsu Province	
8.6	产品通过 AEC-Q200 测试 Passed by AECQ-200	
8.7	UL 认证 UL certificate	E240991
8.8	TUV 认证 TUV certificate	

## 附表 I (Attachment I)

南京时恒阻温特性表 SHIHENG R-T Table

R25=10KΩ 精度: ±1%      B25/50=3950K 精度: ±1%(P477-4B)							
温度(°C) TEMP(°C)	电阻(KΩ) RESISTANCE(KΩ)			电阻精度(%) RESIST-TOL(%)		温度精度(°C) TEMP-TOL(°C)	
	最小值	中心值	最大值	ΔR	-ΔR	ΔT	-ΔT
-55	710.373	749.2	790.069	5.455	-5.182	0.739	-0.702
-54	663.713	699.508	737.161	5.382	-5.117	0.735	-0.699
-53	620.439	653.455	688.16	5.31	-5.052	0.731	-0.696
-52	580.267	610.733	642.734	5.239	-4.988	0.727	-0.692
-51	542.945	571.067	600.586	5.169	-4.924	0.723	-0.689
-50	508.246	534.215	561.455	5.098	-4.861	0.719	-0.685
-49	475.969	499.957	525.102	5.029	-4.798	0.715	-0.682
-48	445.929	468.095	491.313	4.96	-4.735	0.71	-0.678
-47	417.959	438.448	459.895	4.891	-4.672	0.706	-0.675
-46	391.907	410.851	430.668	4.823	-4.61	0.702	-0.671
-45	367.632	385.154	403.47	4.755	-4.549	0.697	-0.667
-44	345.005	361.217	378.153	4.688	-4.488	0.693	-0.663
-43	323.908	338.913	354.577	4.621	-4.427	0.688	-0.659
-42	304.232	318.123	332.616	4.555	-4.366	0.683	-0.655
-41	285.874	298.739	312.152	4.489	-4.306	0.679	-0.651
-40	268.74	280.66	293.078	4.424	-4.246	0.674	-0.647
-39	252.745	263.791	275.292	4.359	-4.187	0.669	-0.643
-38	237.806	248.046	258.702	4.295	-4.128	0.664	-0.638
-37	223.849	233.346	243.221	4.232	-4.069	0.659	-0.634
-36	210.805	219.615	228.771	4.168	-4.011	0.654	-0.63
-35	198.609	206.785	215.276	4.106	-3.953	0.649	-0.625
-34	187.202	194.792	202.669	4.044	-3.896	0.644	-0.621
-33	176.527	183.576	190.886	3.982	-3.839	0.639	-0.616

-32	166.535	173.082	179.869	3.921	-3.782	0.634	-0.611
-31	157.176	163.26	169.563	3.86	-3.726	0.628	-0.606
-30	148.407	154.062	159.917	3.8	-3.67	0.623	-0.602
-29	140.187	145.446	150.886	3.74	-3.615	0.617	-0.597
-28	132.478	137.369	142.426	3.681	-3.56	0.612	-0.592
-27	125.245	129.795	134.497	3.622	-3.505	0.606	-0.587
-26	118.455	122.689	127.062	3.564	-3.451	0.601	-0.581
-25	112.078	116.02	120.087	3.506	-3.397	0.595	-0.576
-24	106.086	109.756	113.541	3.448	-3.343	0.589	-0.571
-23	100.453	103.87	107.393	3.391	-3.29	0.583	-0.566
-22	95.154	98.338	101.618	3.335	-3.237	0.577	-0.56
-21	90.168	93.135	96.189	3.279	-3.184	0.571	-0.555
-20	85.474	88.238	91.083	3.223	-3.132	0.565	-0.549
-19	81.053	83.629	86.279	3.167	-3.08	0.559	-0.544
-18	76.887	79.288	81.756	3.113	-3.028	0.553	-0.538
-17	72.959	75.197	77.497	3.058	-2.977	0.546	-0.532
-16	69.253	71.341	73.484	3.004	-2.926	0.54	-0.526
-15	65.757	67.704	69.701	2.95	-2.875	0.534	-0.52
-14	62.456	64.272	66.134	2.896	-2.824	0.527	-0.514
-13	59.339	61.032	62.768	2.843	-2.774	0.521	-0.508
-12	56.393	57.972	59.59	2.79	-2.724	0.514	-0.502
-11	53.608	55.082	56.59	2.738	-2.674	0.507	-0.496
-10	50.975	52.35	53.756	2.685	-2.625	0.501	-0.489
-9	48.484	49.766	51.077	2.633	-2.576	0.494	-0.483
-8	46.127	47.322	48.544	2.582	-2.526	0.487	-0.477
-7	43.895	45.01	46.149	2.53	-2.478	0.48	-0.47
-6	41.781	42.821	43.883	2.479	-2.429	0.473	-0.463



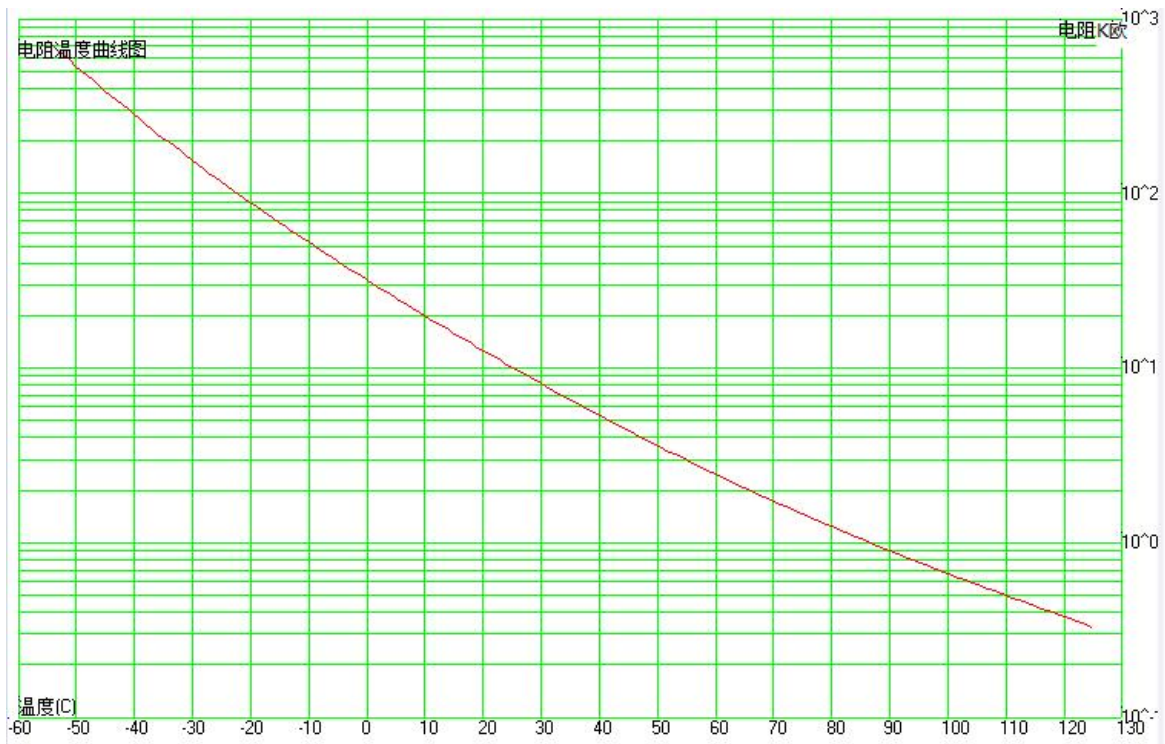
-5	39.778	40.748	41.738	2.428	-2.381	0.466	-0.457
-4	37.88	38.785	39.708	2.378	-2.332	0.459	-0.45
-3	36.081	36.925	37.784	2.328	-2.284	0.452	-0.443
-2	34.375	35.161	35.962	2.277	-2.237	0.444	-0.436
-1	32.756	33.489	34.236	2.228	-2.189	0.437	-0.429
0	31.362	32.049	32.749	2.183	-2.146	0.429	-0.422
1	29.763	30.399	31.047	2.129	-2.094	0.422	-0.415
2	28.379	28.972	29.575	2.08	-2.047	0.415	-0.408
3	27.064	27.617	28.178	2.031	-2	0.407	-0.401
4	25.816	26.33	26.853	1.982	-1.953	0.399	-0.393
5	24.63	25.109	25.594	1.934	-1.907	0.391	-0.386
6	23.503	23.948	24.4	1.885	-1.86	0.384	-0.379
7	22.431	22.846	23.266	1.837	-1.814	0.376	-0.371
8	21.413	21.798	22.188	1.79	-1.768	0.368	-0.363
9	20.444	20.802	21.165	1.742	-1.722	0.36	-0.356
10	19.523	19.856	20.192	1.695	-1.676	0.352	-0.348
11	18.646	18.955	19.268	1.647	-1.631	0.343	-0.34
12	17.812	18.099	18.389	1.601	-1.585	0.335	-0.332
13	17.018	17.285	17.553	1.554	-1.54	0.327	-0.324
14	16.263	16.51	16.759	1.507	-1.495	0.318	-0.315
15	15.544	15.773	16.003	1.461	-1.45	0.309	-0.307
16	14.859	15.071	15.284	1.415	-1.405	0.301	-0.299
17	14.207	14.403	14.6	1.369	-1.36	0.292	-0.29
18	13.586	13.767	13.95	1.323	-1.316	0.282	-0.281
19	12.995	13.162	13.33	1.277	-1.271	0.273	-0.272
20	12.431	12.585	12.741	1.232	-1.227	0.263	-0.262
21	11.894	12.036	12.179	1.187	-1.183	0.252	-0.251

22	11.382	11.513	11.645	1.142	-1.139	0.24	-0.24
23	10.894	11.015	11.136	1.097	-1.095	0.225	-0.225
24	10.429	10.54	10.651	1.053	-1.052	0.199	-0.199
25	9.9	10	10.1	1	-1	0.19	-0.19
26	9.556	9.656	9.756	1.035	-1.034	0.297	-0.297
27	9.146	9.245	9.345	1.079	-1.077	0.277	-0.276
28	8.754	8.853	8.953	1.123	-1.12	0.279	-0.278
29	8.381	8.479	8.578	1.166	-1.163	0.286	-0.285
30	8.025	8.123	8.221	1.21	-1.205	0.296	-0.294
31	7.686	7.783	7.881	1.253	-1.247	0.306	-0.304
32	7.363	7.459	7.556	1.296	-1.289	0.316	-0.315
33	7.054	7.149	7.245	1.339	-1.331	0.327	-0.326
34	6.76	6.854	6.949	1.382	-1.373	0.339	-0.337
35	6.48	6.573	6.666	1.424	-1.414	0.35	-0.348
36	6.212	6.304	6.396	1.467	-1.455	0.362	-0.359
37	5.957	6.047	6.138	1.509	-1.496	0.374	-0.371
38	5.713	5.802	5.892	1.551	-1.537	0.386	-0.383
39	5.48	5.568	5.657	1.593	-1.577	0.398	-0.395
40	5.258	5.345	5.432	1.634	-1.618	0.411	-0.406
41	5.046	5.131	5.217	1.676	-1.658	0.423	-0.419
42	4.844	4.927	5.012	1.717	-1.698	0.436	-0.431
43	4.65	4.733	4.816	1.758	-1.737	0.448	-0.443
44	4.466	4.546	4.628	1.799	-1.777	0.461	-0.455
45	4.289	4.368	4.449	1.839	-1.816	0.474	-0.468
46	4.121	4.198	4.277	1.88	-1.855	0.487	-0.48
47	3.959	4.036	4.113	1.92	-1.894	0.5	-0.493
48	3.805	3.88	3.956	1.96	-1.932	0.513	-0.505

49	3.658	3.732	3.806	2	-1.97	0.526	-0.518
50	3.517	3.59	3.663	2.039	-2.009	0.539	-0.531
51	3.383	3.453	3.525	2.079	-2.046	0.552	-0.544
52	3.254	3.323	3.394	2.118	-2.084	0.566	-0.557
53	3.131	3.199	3.268	2.157	-2.121	0.579	-0.57
54	3.013	3.079	3.147	2.196	-2.159	0.593	-0.583
55	2.9	2.965	3.032	2.235	-2.196	0.607	-0.596
56	2.792	2.856	2.921	2.273	-2.232	0.62	-0.609
57	2.689	2.751	2.815	2.311	-2.269	0.634	-0.623
58	2.59	2.651	2.713	2.349	-2.305	0.648	-0.636
59	2.495	2.555	2.616	2.387	-2.341	0.662	-0.65
60	2.404	2.463	2.523	2.425	-2.377	0.676	-0.663
61	2.317	2.375	2.433	2.462	-2.413	0.691	-0.677
62	2.234	2.29	2.347	2.499	-2.448	0.705	-0.69
63	2.154	2.209	2.265	2.536	-2.483	0.719	-0.704
64	2.077	2.131	2.186	2.573	-2.518	0.734	-0.718
65	2.004	2.056	2.11	2.609	-2.553	0.748	-0.732
66	1.933	1.985	2.037	2.646	-2.587	0.763	-0.746
67	1.866	1.916	1.968	2.682	-2.622	0.778	-0.76
68	1.801	1.85	1.901	2.718	-2.656	0.792	-0.774
69	1.739	1.787	1.836	2.754	-2.689	0.807	-0.788
70	1.679	1.726	1.774	2.789	-2.723	0.822	-0.803
71	1.622	1.668	1.715	2.824	-2.757	0.837	-0.817
72	1.567	1.612	1.658	2.86	-2.79	0.852	-0.831
73	1.514	1.558	1.603	2.895	-2.823	0.867	-0.846
74	1.463	1.506	1.55	2.929	-2.856	0.883	-0.86
75	1.414	1.456	1.499	2.964	-2.888	0.898	-0.875

76	1.367	1.408	1.451	2.998	-2.921	0.913	-0.89
77	1.322	1.362	1.404	3.033	-2.953	0.929	-0.905
78	1.279	1.318	1.359	3.067	-2.985	0.944	-0.919
79	1.237	1.276	1.315	3.1	-3.017	0.96	-0.934
80	1.197	1.235	1.273	3.134	-3.049	0.976	-0.949
81	1.158	1.195	1.233	3.168	-3.08	0.992	-0.964
82	1.121	1.157	1.194	3.201	-3.111	1.008	-0.979
83	1.085	1.121	1.157	3.234	-3.142	1.024	-0.995
84	1.051	1.085	1.121	3.267	-3.173	1.04	-1.01
85	1.018	1.052	1.086	3.3	-3.204	1.056	-1.025
86	0.986	1.019	1.053	3.332	-3.235	1.072	-1.041
87	0.955	0.987	1.021	3.365	-3.265	1.088	-1.056
88	0.925	0.957	0.989	3.397	-3.295	1.105	-1.071
89	0.897	0.928	0.959	3.429	-3.325	1.121	-1.087
90	0.869	0.899	0.931	3.461	-3.355	1.138	-1.103
91	0.843	0.872	0.903	3.493	-3.385	1.154	-1.118
92	0.817	0.846	0.876	3.525	-3.414	1.171	-1.134
93	0.792	0.82	0.85	3.556	-3.444	1.188	-1.15
94	0.768	0.796	0.825	3.588	-3.473	1.204	-1.166
95	0.745	0.772	0.8	3.619	-3.502	1.221	-1.182
96	0.723	0.749	0.777	3.65	-3.531	1.238	-1.198
97	0.701	0.727	0.754	3.681	-3.56	1.255	-1.214
98	0.681	0.706	0.732	3.712	-3.589	1.273	-1.23
99	0.661	0.685	0.711	3.742	-3.617	1.29	-1.246
100	0.641	0.666	0.691	3.773	-3.645	1.307	-1.263
101	0.622	0.646	0.671	3.804	-3.674	1.324	-1.279
102	0.604	0.628	0.652	3.834	-3.702	1.342	-1.296

103	0.587	0.61	0.633	3.864	-3.73	1.359	-1.312
104	0.57	0.592	0.615	3.894	-3.758	1.377	-1.329
105	0.553	0.575	0.598	3.924	-3.786	1.395	-1.345
106	0.538	0.559	0.581	3.954	-3.813	1.412	-1.362
107	0.522	0.543	0.565	3.984	-3.841	1.43	-1.379
108	0.507	0.528	0.549	4.014	-3.868	1.448	-1.395
109	0.493	0.513	0.534	4.043	-3.896	1.466	-1.412
110	0.479	0.499	0.519	4.073	-3.923	1.484	-1.429
111	0.466	0.485	0.505	4.102	-3.95	1.502	-1.446
112	0.452	0.471	0.491	4.132	-3.977	1.52	-1.463
113	0.44	0.458	0.477	4.161	-4.004	1.538	-1.48
114	0.427	0.445	0.464	4.19	-4.031	1.557	-1.498
115	0.416	0.433	0.451	4.219	-4.058	1.575	-1.515
116	0.404	0.421	0.439	4.248	-4.085	1.593	-1.532
117	0.393	0.41	0.427	4.277	-4.111	1.612	-1.549
118	0.382	0.398	0.416	4.306	-4.138	1.631	-1.567
119	0.371	0.388	0.404	4.335	-4.165	1.649	-1.584
120	0.361	0.377	0.393	4.364	-4.191	1.668	-1.602
121	0.351	0.367	0.383	4.393	-4.217	1.687	-1.619
122	0.342	0.357	0.373	4.421	-4.244	1.706	-1.637
123	0.332	0.347	0.363	4.45	-4.27	1.725	-1.655
124	0.323	0.338	0.353	4.479	-4.296	1.744	-1.673
125	0.314	0.329	0.343	4.507	-4.323	1.763	-1.69



附表 II (Attachment II)

