



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:

MF58 玻壳型 NTC 热敏电阻器
MF58 Glass shell NTC Thermistor

MF58- 503F3950 UL:E240991

B0

2022-9-13

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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1、产品型号说明 Product model specification

MF58 503 F 3950


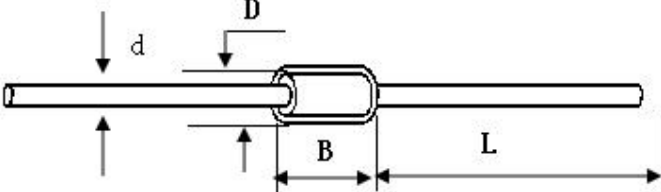
① ② ③ ④

- ① MF58: 玻壳型 NTC 热敏电阻器系列 (Series Glass shell NTC Thermistor)
- ② 503: 25℃ 的零功率电阻值 50KΩ (Zero Power Resistance at 25℃ is 50KΩ)
- ③ 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%)
- ④ 3950: B25/50 值 3950K (B25/50:3950K)

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 _{25c}	T _a =25±0.01℃ Test Power≤0.1mW	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	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	≤20
2.5	耐电压 withstand voltage	/	1500V/AC 1min	/	无击穿或飞弧 No breakthrough and flash over
2.6	绝缘电阻 Insulation resistance	/	500V/DC 1min	MΩ	≥500
2.7	工作温度范围 Operating temperature range	/	/	℃	-40℃~250℃
2.8	最大额定功率 Maximum rated power	P _{max}	/	mW	50
2.9	阻温特性 R&T-table	/	/	/	见附表 I See attached table I
2.10	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.	MF58-503F3950	审核 Approve:		日期 DATE								
尺寸 Dimensions: (Unit: mm)												
												
<table border="1"> <tr> <td>$D \pm 0.2$</td> <td>B_{max}</td> <td>L_{min}</td> <td>$d \pm 0.05$</td> </tr> <tr> <td>1.8</td> <td>4.0</td> <td>27</td> <td>0.5</td> </tr> </table>					$D \pm 0.2$	B_{max}	L_{min}	$d \pm 0.05$	1.8	4.0	27	0.5
$D \pm 0.2$	B_{max}	L_{min}	$d \pm 0.05$									
1.8	4.0	27	0.5									
技术要求 Technical requirements:												
1) 零功率阻值: R25: $50K \Omega \pm 1\%$ (Zero Power Resistance: R25: $50K\Omega \pm 1\%$); 2) B25/50 数值: $3950K \pm 1\%$ (B-value: B25/50: $3950K \pm 1\%$); 3) 引线: $\Phi 0.5$ 镀锡铜包钢线 ($\Phi 0.5$ tinned copper-weld steel wire); 4) 封装: 玻壳封装 (Glass shell package); 5) 符合 RoHS 环保要求 (Meet environmental protection requirements: RoHS)。												
更新履历 Revised record sheet												
版本 REV. NO	更新时间 REV. DATE	更新内容 Change content	申请人 Applicant	批准人 Approved								
A0	2015/10/11	版本制定。 ersion formulation	吴仪	李少媛								
B0	2022/4/1	更新规格书版本格式, 增加版次管控 Update for version form of datasheet, add to management and control for number of edition	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: 10 ± 1 N, 时间: 10 ± 1 秒 Fixed resistor end, Pull strength: 10 ± 1 N, time: 10 ± 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 ± 1 秒 Temperature of tin pot: $260 \pm 5^\circ\text{C}$, insert depth from body of resistance 6mm, time 5 ± 1 seconds	$R_{25} \Delta R/R \leq \pm 2\%$
4.4	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	$R_{25} \Delta R/R \leq \pm 2\%$
4.5	温度快速变化 Rapid changes in temperature	IEC60068-2-14	-40°C 30min \rightarrow 25°C 5min \rightarrow 250°C 30min \rightarrow 25°C 5min, 5cycles	$R_{25} \Delta R/R \leq \pm 2\%$
4.6	高温储存 High temperature storage	IEC60068-2-2	温度: $250^\circ\text{C} \pm 5^\circ\text{C}$ 时间: 1000 小时 Temp : $250^\circ\text{C} \pm 5^\circ\text{C}$, Time : 1000hrs	$R_{25} \Delta R/R \leq \pm 2\%$
4.7	低温储存 Low temperature storage	IEC60068-2-1	温度: -40°C 时间: 1000 小时 Temp : -40°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.

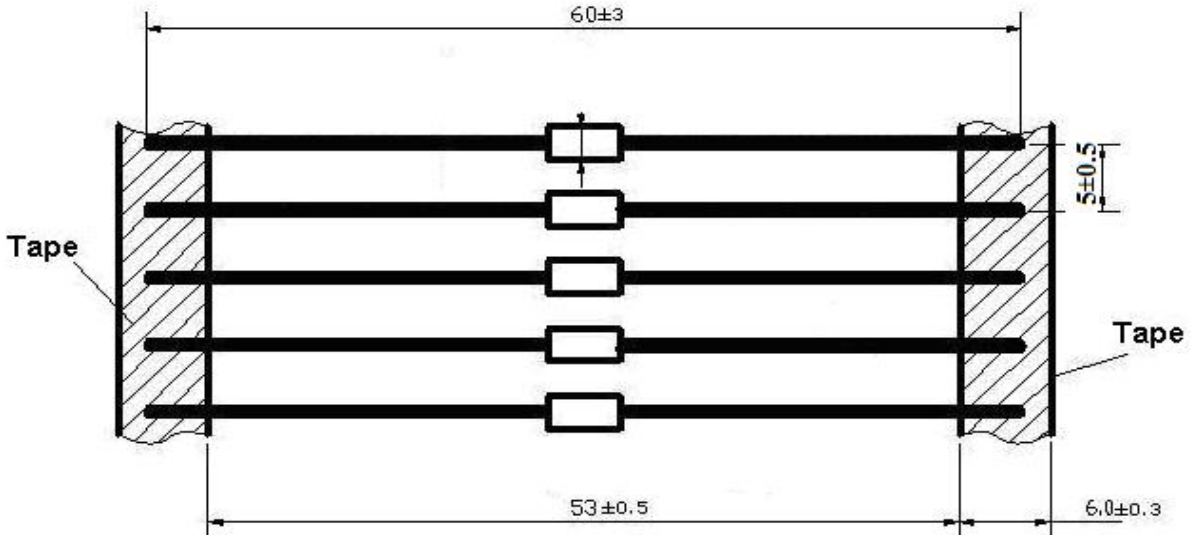
5、产品包装 Product packaging

5.1 包装方式 Packing Type

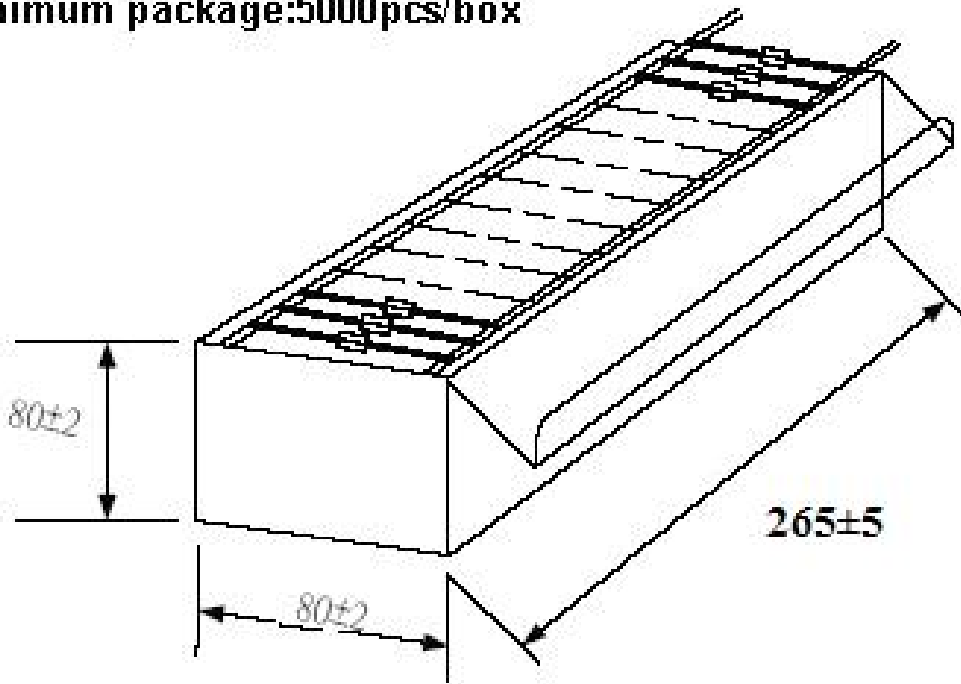
散装方式 Bulk Type 编带方式 Reel Type

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) $W \times H = 125\text{mm} \times 90\text{mm}$	500
2	编带包装盒 Reel Packing box	265mm*80mm*75mm	5000



minimum package:5000pcs/box



编带方式 Reel Type

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 若引线弯曲时，弯曲点应距玻壳端 2mm 以上，以免造成玻壳损伤；

In case of lead bending,the dot of bending should be above 2mm from glass shell to avoid of damaging for glass shell.

6.5 储存温度：-10℃ ~ 40℃；储存湿度：≤75% RH；

storage temp:-10℃ ~ 40℃；storage humidity:≤75% RH

6.6 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	TUV 认证 UL certificate	R50245892
8.6	UL 认证 UL certificate	E240991
8.7	江苏省高新技术产品认证 High-tech product certificate in Jiangsu Province	
8.8	产品通过 AEC-Q200 测试 Passed by AECQ-200	

附表 I (Attachment I)

南京时恒阻温特性表 SHIHENG R-T Table

R25=50K Ω 精度: $\pm 1\%$ B25/50=3950K 精度: $\pm 1\%$ (P214-9)

温度($^{\circ}\text{C}$)	电阻(K Ω)			电阻精度(%)		温度精度($^{\circ}\text{C}$)	
	最小值	中心值	最大值	ΔR	$-\Delta R$	ΔT	$-\Delta T$
-40	1353.84	1414	1476.67	4.432	-4.254	0.674	-0.646
-39	1277.57	1333.56	1391.85	4.371	-4.197	0.669	-0.642
-38	1204.34	1256.37	1310.51	4.309	-4.14	0.664	-0.638
-37	1134.44	1182.73	1232.95	4.246	-4.082	0.659	-0.633
-36	1068.03	1112.82	1159.36	4.182	-4.024	0.654	-0.629
-35	1005.18	1046.69	1089.8	4.118	-3.965	0.649	-0.624
-34	945.896	984.351	1024.26	4.055	-3.906	0.643	-0.62
-33	890.095	925.713	962.66	3.991	-3.847	0.638	-0.615
-32	837.684	870.671	904.866	3.927	-3.788	0.633	-0.611
-31	788.531	819.081	850.73	3.863	-3.729	0.628	-0.606
-30	742.485	770.783	800.079	3.8	-3.671	0.623	-0.602
-29	699.385	725.602	752.726	3.738	-3.613	0.617	-0.597
-28	659.065	683.36	708.481	3.675	-3.555	0.612	-0.592
-27	621.357	643.879	667.151	3.614	-3.497	0.607	-0.587
-26	586.097	606.983	628.55	3.553	-3.44	0.601	-0.582
-25	553.124	572.5	592.495	3.492	-3.384	0.596	-0.577
-24	522.284	540.266	558.811	3.432	-3.328	0.59	-0.572
-23	493.43	510.126	527.334	3.373	-3.272	0.584	-0.567
-22	466.424	481.932	497.906	3.314	-3.217	0.579	-0.562
-21	441.136	455.547	470.381	3.256	-3.163	0.573	-0.556
-20	417.444	430.84	444.622	3.198	-3.109	0.567	-0.551
-19	395.233	407.692	420.501	3.141	-3.055	0.561	-0.546
-18	374.399	385.99	397.9	3.085	-3.002	0.555	-0.54
-17	354.844	365.631	376.708	3.029	-2.95	0.549	-0.535
-16	336.475	346.518	356.824	2.974	-2.898	0.543	-0.529
-15	319.21	328.562	338.155	2.919	-2.846	0.537	-0.523
-14	302.971	311.683	320.614	2.865	-2.795	0.53	-0.517
-13	287.686	295.804	304.121	2.811	-2.744	0.524	-0.511
-12	273.29	280.856	288.602	2.758	-2.693	0.517	-0.505
-11	259.721	266.774	273.991	2.705	-2.643	0.511	-0.499
-10	246.923	253.5	260.225	2.652	-2.594	0.504	-0.493
-9	234.846	240.978	247.246	2.6	-2.544	0.498	-0.487
-8	223.44	229.159	235.001	2.549	-2.495	0.491	-0.481

-7	212.662	217.996	223.442	2.498	-2.447	0.484	-0.474
-6	202.471	207.447	212.524	2.447	-2.398	0.477	-0.468
-5	192.83	197.471	202.205	2.396	-2.35	0.47	-0.461
-4	183.704	188.034	192.446	2.346	-2.302	0.463	-0.455
-3	175.061	179.1	183.214	2.296	-2.255	0.456	-0.448
-2	166.871	170.638	174.473	2.247	-2.207	0.449	-0.441
-1	159.107	162.621	166.196	2.198	-2.16	0.442	-0.434
0	152.175	155.466	158.812	2.152	-2.116	0.434	-0.427
1	144.756	147.812	150.917	2.1	-2.067	0.427	-0.42
2	138.123	140.972	143.865	2.052	-2.02	0.42	-0.413
3	131.824	134.48	137.175	2.004	-1.974	0.412	-0.406
4	125.84	128.315	130.826	1.956	-1.928	0.405	-0.399
5	120.154	122.46	124.797	1.908	-1.882	0.397	-0.392
6	114.748	116.896	119.071	1.861	-1.837	0.389	-0.384
7	109.607	111.607	113.632	1.814	-1.791	0.382	-0.377
8	104.717	106.578	108.462	1.767	-1.746	0.374	-0.369
9	100.064	101.796	103.547	1.72	-1.701	0.366	-0.362
10	95.689	97.302	98.931	1.674	-1.656	0.358	-0.354
11	91.419	92.917	94.429	1.627	-1.611	0.35	-0.346
12	87.405	88.796	90.201	1.581	-1.566	0.342	-0.339
13	83.581	84.873	86.177	1.535	-1.522	0.334	-0.331
14	79.938	81.138	82.347	1.49	-1.478	0.326	-0.323
15	76.467	77.58	78.7	1.444	-1.433	0.317	-0.315
16	73.159	74.19	75.228	1.399	-1.389	0.309	-0.307
17	70.006	70.961	71.922	1.354	-1.346	0.301	-0.299
18	66.999	67.883	68.772	1.309	-1.302	0.292	-0.291
19	64.132	64.95	65.771	1.264	-1.258	0.284	-0.282
20	61.398	62.154	62.912	1.22	-1.215	0.275	-0.274
21	58.79	59.487	60.187	1.175	-1.171	0.267	-0.266
22	56.302	56.945	57.589	1.131	-1.128	0.258	-0.257
23	53.928	54.52	55.113	1.087	-1.085	0.249	-0.249
24	51.662	52.206	52.751	1.043	-1.042	0.24	-0.24
25	49.5	50	50.5	1	-1	0.232	-0.232
26	47.394	47.894	48.393	1.043	-1.042	0.243	-0.243
27	45.386	45.884	46.383	1.086	-1.084	0.254	-0.254
28	43.47	43.966	44.463	1.129	-1.127	0.266	-0.265
29	41.642	42.135	42.629	1.172	-1.169	0.277	-0.276
30	39.898	40.387	40.878	1.215	-1.211	0.289	-0.288
31	38.233	38.718	39.205	1.258	-1.252	0.301	-0.299
32	36.644	37.124	37.607	1.301	-1.294	0.313	-0.311
33	35.126	35.602	36.08	1.343	-1.335	0.324	-0.323

34	33.678	34.148	34.621	1.385	-1.376	0.336	-0.334
35	32.294	32.759	33.226	1.427	-1.417	0.349	-0.346
36	30.973	31.431	31.893	1.469	-1.458	0.361	-0.358
37	29.711	30.163	30.619	1.511	-1.499	0.373	-0.37
38	28.505	28.951	29.4	1.553	-1.539	0.385	-0.382
39	27.353	27.792	28.235	1.594	-1.579	0.398	-0.394
40	26.252	26.684	27.121	1.636	-1.619	0.41	-0.406
41	25.2	25.625	26.055	1.677	-1.659	0.423	-0.418
42	24.194	24.612	25.035	1.718	-1.699	0.435	-0.43
43	23.233	23.644	24.06	1.759	-1.738	0.448	-0.443
44	22.313	22.717	23.126	1.799	-1.777	0.461	-0.455
45	21.434	21.831	22.233	1.84	-1.816	0.473	-0.467
46	20.593	20.983	21.378	1.88	-1.855	0.486	-0.48
47	19.789	20.171	20.559	1.92	-1.894	0.499	-0.493
48	19.02	19.395	19.775	1.961	-1.933	0.513	-0.505
49	18.284	18.651	19.024	2	-1.971	0.526	-0.518
50	17.579	17.94	18.306	2.04	-2.009	0.539	-0.531
51	16.905	17.258	17.617	2.08	-2.047	0.552	-0.544
52	16.259	16.605	16.957	2.119	-2.085	0.566	-0.557
53	15.641	15.98	16.325	2.158	-2.122	0.579	-0.57
54	15.049	15.381	15.719	2.197	-2.16	0.593	-0.583
55	14.482	14.808	15.139	2.236	-2.197	0.606	-0.596
56	13.939	14.258	14.582	2.275	-2.234	0.62	-0.609
57	13.419	13.731	14.049	2.313	-2.271	0.634	-0.622
58	12.921	13.226	13.537	2.352	-2.307	0.648	-0.636
59	12.443	12.742	13.046	2.39	-2.344	0.662	-0.649
60	11.985	12.278	12.576	2.428	-2.38	0.676	-0.662
61	11.546	11.832	12.124	2.466	-2.416	0.69	-0.676
62	11.126	11.405	11.691	2.503	-2.452	0.704	-0.69
63	10.722	10.996	11.275	2.541	-2.488	0.718	-0.703
64	10.335	10.603	10.876	2.578	-2.523	0.733	-0.717
65	9.964	10.225	10.493	2.615	-2.558	0.747	-0.731
66	9.607	9.863	10.125	2.652	-2.593	0.762	-0.745
67	9.265	9.516	9.772	2.689	-2.628	0.776	-0.759
68	8.937	9.182	9.432	2.726	-2.663	0.791	-0.773
69	8.622	8.861	9.106	2.762	-2.698	0.806	-0.787
70	8.32	8.554	8.793	2.799	-2.732	0.821	-0.801
71	8.03	8.258	8.492	2.835	-2.766	0.835	-0.815
72	7.751	7.974	8.203	2.871	-2.8	0.85	-0.83
73	7.483	7.701	7.925	2.907	-2.834	0.866	-0.844
74	7.225	7.439	7.658	2.942	-2.868	0.881	-0.858

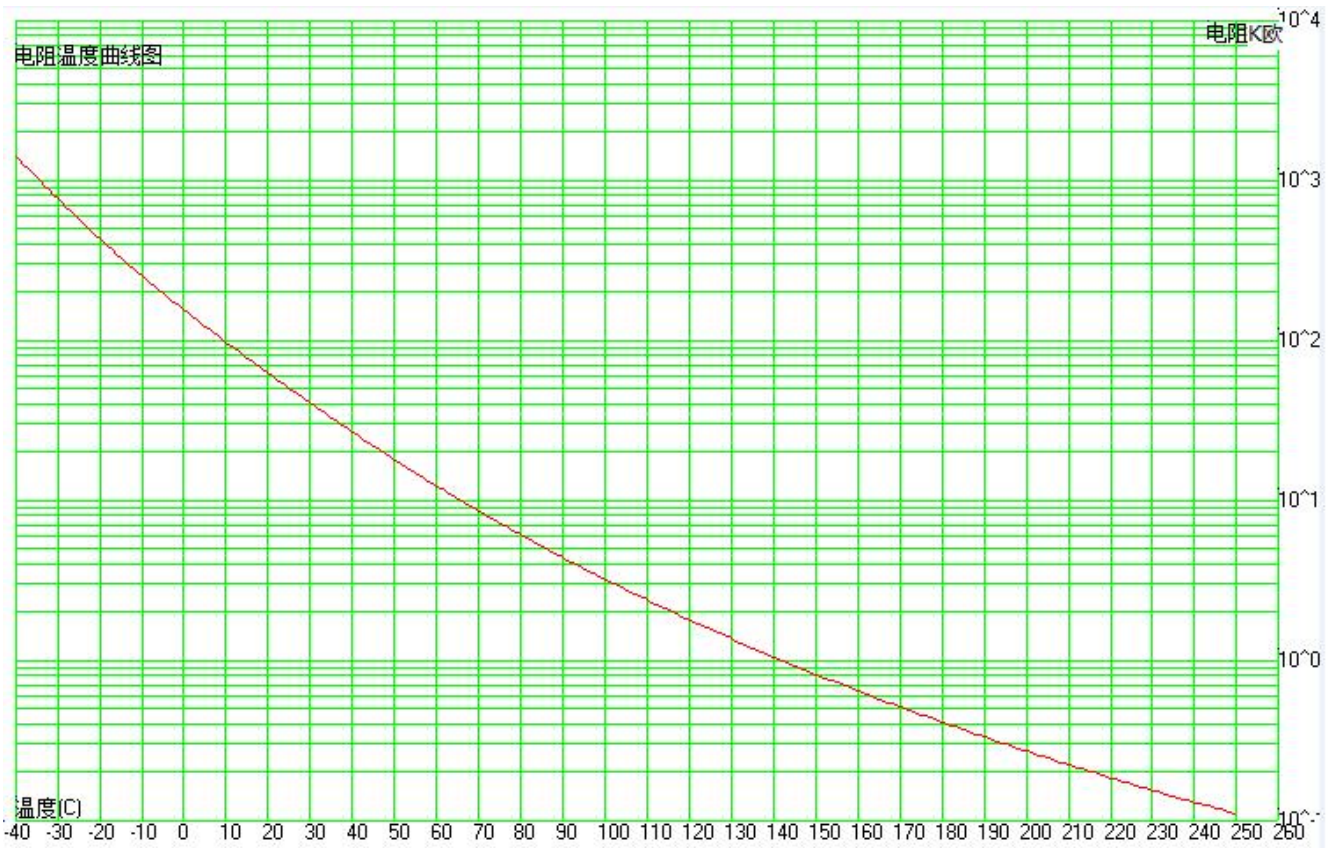
75	6.978	7.187	7.401	2.978	-2.901	0.896	-0.873
76	6.74	6.944	7.153	3.013	-2.935	0.911	-0.888
77	6.512	6.711	6.916	3.048	-2.968	0.927	-0.902
78	6.292	6.487	6.687	3.083	-3.001	0.942	-0.917
79	6.081	6.271	6.467	3.118	-3.034	0.958	-0.932
80	5.878	6.063	6.255	3.153	-3.066	0.973	-0.946
81	5.682	5.864	6.051	3.187	-3.099	0.989	-0.961
82	5.494	5.672	5.854	3.222	-3.131	1.005	-0.976
83	5.313	5.487	5.665	3.256	-3.163	1.021	-0.991
84	5.139	5.309	5.483	3.29	-3.195	1.037	-1.007
85	4.957	5.123	5.293	3.327	-3.23	1.052	-1.021
86	4.81	4.972	5.139	3.358	-3.258	1.069	-1.037
87	4.655	4.813	4.976	3.391	-3.29	1.085	-1.052
88	4.505	4.66	4.819	3.425	-3.321	1.101	-1.068
89	4.361	4.512	4.668	3.458	-3.352	1.117	-1.083
90	4.222	4.37	4.522	3.491	-3.383	1.134	-1.099
91	4.088	4.233	4.382	3.524	-3.414	1.15	-1.114
92	3.959	4.1	4.246	3.557	-3.445	1.167	-1.13
93	3.835	3.973	4.116	3.59	-3.475	1.183	-1.146
94	3.715	3.85	3.989	3.622	-3.505	1.2	-1.161
95	3.599	3.731	3.868	3.655	-3.536	1.217	-1.177
96	3.488	3.617	3.75	3.687	-3.566	1.234	-1.193
97	3.381	3.507	3.637	3.719	-3.595	1.251	-1.209
98	3.277	3.4	3.528	3.751	-3.625	1.268	-1.225
99	3.177	3.297	3.422	3.783	-3.655	1.285	-1.241
100	3.069	3.187	3.308	3.819	-3.688	1.302	-1.257
101	2.987	3.102	3.222	3.846	-3.713	1.319	-1.274
102	2.897	3.01	3.127	3.878	-3.743	1.337	-1.29
103	2.811	2.921	3.035	3.909	-3.772	1.354	-1.307
104	2.727	2.834	2.946	3.94	-3.8	1.372	-1.323
105	2.646	2.751	2.86	3.971	-3.829	1.389	-1.339
106	2.568	2.671	2.778	4.002	-3.858	1.407	-1.356
107	2.492	2.593	2.697	4.033	-3.886	1.425	-1.373
108	2.419	2.518	2.62	4.063	-3.914	1.442	-1.389
109	2.349	2.445	2.545	4.094	-3.942	1.46	-1.406
110	2.28	2.375	2.473	4.124	-3.97	1.478	-1.423
111	2.215	2.307	2.403	4.154	-3.998	1.496	-1.44
112	2.151	2.241	2.335	4.185	-4.026	1.514	-1.457
113	2.089	2.178	2.269	4.214	-4.054	1.533	-1.474
114	2.03	2.116	2.206	4.244	-4.081	1.551	-1.491
115	1.972	2.057	2.145	4.274	-4.108	1.569	-1.508

116	1.917	1.999	2.085	4.304	-4.136	1.588	-1.526
117	1.863	1.944	2.028	4.333	-4.163	1.606	-1.543
118	1.81	1.89	1.972	4.362	-4.19	1.625	-1.56
119	1.76	1.838	1.918	4.392	-4.216	1.643	-1.578
120	1.711	1.787	1.866	4.421	-4.243	1.662	-1.595
121	1.664	1.738	1.816	4.45	-4.27	1.681	-1.613
122	1.618	1.691	1.767	4.478	-4.296	1.7	-1.631
123	1.574	1.645	1.719	4.507	-4.322	1.719	-1.648
124	1.531	1.601	1.673	4.536	-4.349	1.738	-1.666
125	1.489	1.558	1.629	4.564	-4.375	1.757	-1.684
126	1.449	1.516	1.585	4.593	-4.4	1.776	-1.702
127	1.41	1.475	1.544	4.621	-4.426	1.795	-1.72
128	1.372	1.436	1.503	4.649	-4.452	1.815	-1.738
129	1.336	1.398	1.464	4.677	-4.478	1.834	-1.756
130	1.3	1.362	1.426	4.705	-4.503	1.854	-1.774
131	1.266	1.326	1.389	4.733	-4.528	1.873	-1.792
132	1.232	1.291	1.353	4.76	-4.554	1.893	-1.811
133	1.2	1.258	1.318	4.788	-4.579	1.913	-1.829
134	1.169	1.225	1.284	4.815	-4.604	1.932	-1.847
135	1.138	1.194	1.251	4.843	-4.629	1.952	-1.866
136	1.109	1.163	1.22	4.87	-4.653	1.972	-1.885
137	1.08	1.133	1.189	4.897	-4.678	1.992	-1.903
138	1.052	1.104	1.159	4.924	-4.703	2.012	-1.922
139	1.026	1.076	1.13	4.951	-4.727	2.033	-1.941
140	0.999	1.049	1.102	4.978	-4.751	2.053	-1.96
141	0.974	1.023	1.074	5.005	-4.776	2.073	-1.978
142	0.949	0.997	1.048	5.031	-4.8	2.094	-1.997
143	0.926	0.973	1.022	5.058	-4.824	2.114	-2.016
144	0.902	0.948	0.997	5.084	-4.848	2.135	-2.036
145	0.88	0.925	0.972	5.11	-4.871	2.156	-2.055
146	0.858	0.902	0.949	5.136	-4.895	2.176	-2.074
147	0.837	0.88	0.926	5.163	-4.919	2.197	-2.093
148	0.816	0.859	0.903	5.189	-4.942	2.218	-2.113
149	0.796	0.838	0.881	5.214	-4.965	2.239	-2.132
150	0.777	0.818	0.86	5.24	-4.989	2.26	-2.152
151	0.758	0.798	0.84	5.266	-5.012	2.281	-2.171
152	0.739	0.779	0.82	5.291	-5.035	2.302	-2.191
153	0.722	0.76	0.8	5.317	-5.058	2.324	-2.21
154	0.704	0.742	0.782	5.342	-5.081	2.345	-2.23
155	0.687	0.724	0.763	5.367	-5.103	2.366	-2.25
156	0.671	0.707	0.745	5.393	-5.126	2.388	-2.27

157	0.655	0.691	0.728	5.418	-5.149	2.41	-2.29
158	0.64	0.674	0.711	5.443	-5.171	2.431	-2.31
159	0.624	0.659	0.695	5.468	-5.194	2.453	-2.33
160	0.61	0.643	0.679	5.492	-5.216	2.475	-2.35
161	0.596	0.628	0.663	5.517	-5.238	2.497	-2.37
162	0.582	0.614	0.648	5.542	-5.26	2.519	-2.391
163	0.568	0.6	0.633	5.566	-5.282	2.541	-2.411
164	0.555	0.586	0.619	5.591	-5.304	2.563	-2.431
165	0.542	0.573	0.605	5.615	-5.326	2.585	-2.452
166	0.53	0.56	0.591	5.639	-5.347	2.607	-2.472
167	0.518	0.547	0.578	5.663	-5.369	2.63	-2.493
168	0.506	0.535	0.565	5.687	-5.391	2.652	-2.514
169	0.495	0.523	0.553	5.711	-5.412	2.675	-2.535
170	0.483	0.511	0.541	5.735	-5.433	2.697	-2.555
171	0.473	0.5	0.529	5.759	-5.455	2.72	-2.576
172	0.462	0.489	0.517	5.782	-5.476	2.743	-2.597
173	0.452	0.478	0.506	5.806	-5.497	2.765	-2.618
174	0.442	0.468	0.495	5.829	-5.518	2.788	-2.639
175	0.432	0.457	0.484	5.853	-5.539	2.811	-2.66
176	0.422	0.447	0.474	5.876	-5.559	2.834	-2.682
177	0.413	0.438	0.463	5.899	-5.58	2.858	-2.703
178	0.404	0.428	0.454	5.922	-5.601	2.881	-2.724
179	0.395	0.419	0.444	5.945	-5.621	2.904	-2.746
180	0.387	0.41	0.434	5.968	-5.642	2.927	-2.767
181	0.378	0.401	0.425	5.991	-5.662	2.951	-2.789
182	0.37	0.393	0.416	6.014	-5.682	2.974	-2.81
183	0.362	0.384	0.408	6.037	-5.702	2.998	-2.832
184	0.355	0.376	0.399	6.059	-5.723	3.022	-2.854
185	0.347	0.368	0.391	6.082	-5.743	3.045	-2.876
186	0.34	0.361	0.383	6.104	-5.762	3.069	-2.897
187	0.333	0.353	0.375	6.127	-5.782	3.093	-2.919
188	0.326	0.346	0.367	6.149	-5.802	3.117	-2.941
189	0.319	0.339	0.36	6.171	-5.822	3.141	-2.963
190	0.312	0.332	0.352	6.193	-5.841	3.165	-2.986
191	0.306	0.325	0.345	6.215	-5.861	3.19	-3.008
192	0.299	0.318	0.338	6.237	-5.88	3.214	-3.03
193	0.293	0.312	0.331	6.259	-5.899	3.238	-3.052
194	0.287	0.305	0.325	6.281	-5.919	3.263	-3.075
195	0.281	0.299	0.318	6.302	-5.938	3.287	-3.097
196	0.276	0.293	0.312	6.324	-5.957	3.312	-3.12
197	0.27	0.287	0.306	6.345	-5.976	3.337	-3.142

198	0.265	0.282	0.3	6.367	-5.995	3.361	-3.165
199	0.259	0.276	0.294	6.388	-6.014	3.386	-3.188
200	0.254	0.271	0.288	6.409	-6.033	3.411	-3.211
201	0.249	0.265	0.282	6.43	-6.051	3.436	-3.234
202	0.244	0.26	0.277	6.451	-6.07	3.461	-3.256
203	0.239	0.255	0.271	6.472	-6.088	3.486	-3.279
204	0.235	0.25	0.266	6.493	-6.107	3.512	-3.303
205	0.23	0.245	0.261	6.514	-6.125	3.537	-3.326
206	0.226	0.24	0.256	6.535	-6.143	3.562	-3.349
207	0.221	0.236	0.251	6.556	-6.162	3.588	-3.372
208	0.217	0.231	0.246	6.576	-6.18	3.613	-3.396
209	0.213	0.227	0.242	6.597	-6.198	3.639	-3.419
210	0.209	0.222	0.237	6.617	-6.216	3.665	-3.442
211	0.205	0.218	0.233	6.638	-6.234	3.69	-3.466
212	0.201	0.214	0.228	6.658	-6.252	3.716	-3.49
213	0.197	0.21	0.224	6.678	-6.269	3.742	-3.513
214	0.193	0.206	0.22	6.698	-6.287	3.768	-3.537
215	0.189	0.202	0.216	6.718	-6.305	3.794	-3.561
216	0.186	0.199	0.212	6.738	-6.322	3.821	-3.585
217	0.182	0.195	0.208	6.758	-6.34	3.847	-3.609
218	0.179	0.191	0.204	6.778	-6.357	3.873	-3.633
219	0.176	0.188	0.201	6.798	-6.374	3.899	-3.657
220	0.172	0.184	0.197	6.817	-6.392	3.926	-3.681
221	0.169	0.181	0.193	6.837	-6.409	3.953	-3.705
222	0.166	0.178	0.19	6.856	-6.426	3.979	-3.729
223	0.163	0.174	0.186	6.876	-6.443	4.006	-3.754
224	0.16	0.171	0.183	6.895	-6.46	4.033	-3.778
225	0.157	0.168	0.18	6.915	-6.477	4.06	-3.802
226	0.154	0.165	0.177	6.934	-6.493	4.086	-3.827
227	0.152	0.162	0.174	6.953	-6.51	4.114	-3.852
228	0.149	0.159	0.171	6.972	-6.527	4.141	-3.876
229	0.146	0.157	0.168	6.991	-6.543	4.168	-3.901
230	0.144	0.154	0.165	7.01	-6.56	4.195	-3.926
231	0.141	0.151	0.162	7.029	-6.576	4.222	-3.951
232	0.139	0.149	0.159	7.047	-6.593	4.25	-3.976
233	0.136	0.146	0.156	7.066	-6.609	4.277	-4.001
234	0.134	0.143	0.154	7.085	-6.625	4.305	-4.026
235	0.132	0.141	0.151	7.103	-6.641	4.333	-4.051
236	0.129	0.139	0.148	7.122	-6.658	4.36	-4.076
237	0.127	0.136	0.146	7.14	-6.674	4.388	-4.101
238	0.125	0.134	0.143	7.158	-6.69	4.416	-4.127

239	0.123	0.132	0.141	7.177	-6.705	4.444	-4.152
240	0.121	0.129	0.139	7.195	-6.721	4.472	-4.178
241	0.119	0.127	0.136	7.213	-6.737	4.5	-4.203
242	0.117	0.125	0.134	7.231	-6.753	4.528	-4.229
243	0.115	0.123	0.132	7.249	-6.768	4.557	-4.254
244	0.113	0.121	0.13	7.267	-6.784	4.585	-4.28
245	0.111	0.119	0.128	7.285	-6.799	4.613	-4.306
246	0.109	0.117	0.126	7.303	-6.815	4.642	-4.332
247	0.107	0.115	0.123	7.32	-6.83	4.67	-4.358
248	0.105	0.113	0.121	7.338	-6.846	4.699	-4.384
249	0.104	0.111	0.12	7.356	-6.861	4.728	-4.41
250	0.102	0.11	0.118	7.373	-6.876	4.757	-4.436



附表 II (Attachment II)

南京时恒电阻误差曲线图
Nanjing Shiheng The curve of resistance tolerance

