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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：	MF58 玻壳式 NTC 热敏电阻器 MF58 Series Glass shell NTC Thermistor
产品型号 PART NUMBER：	MF58 503H3950
版次 REV.NO：	C0
日期 DATE：	2026-07-25

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	去掉：产品图纸此一页的变更履历表 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

MF58	503	H	3950
①	②	③	④

① MF58：玻壳式 NTC 热敏电阻器系列（Glass shell NTC Thermistor Series）

② 503：25℃的零功率电阻值 50kΩ（Zero Power Resistance at 25℃ is 50kΩ）

③ H：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：$B_{25/50}$ 值 3950K（$B_{25/50}$:3950K）

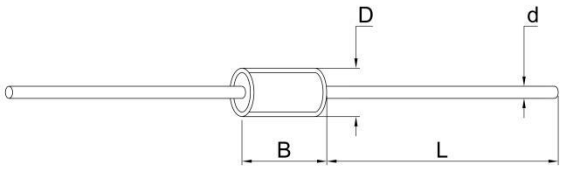
2、电气性能 Electrical characteristics

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_{25}	Ta=25±0.01℃ (Test Power≤0.1mW)	kΩ	50kΩ±3%
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%
2.3	耗散系数 Thermal dissipation Coefficient	δ	静止空气中 In still air	mW/℃	约 1.8
2.4	时间常数 Thermal time constant	τ	静止空气中 In still air	sec	约 12
2.5	工作温度范围 Operating temperature range	/	/	℃	-55 ~ +250
2.6	最大额定功率 Maximum rated power	Pmax	/	mW	10
2.7	阻温特性 R&T-table	/	/	/	见附表 I See attached table I
2.8	阻值误差&温度误差 Resistance tolerance& Temperature 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 503H3950		审核 Approve:		日期 DATE	

尺寸 Dimensions： （Unit：mm）



型号	D （mm）	d（mm）	B （mm）	L（mm）
MF58	1.8±0.2	0.5±0.05	3.7±0.3	28±1

技术要求 Technical requirements：

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

材料规格 Material specifications

No.	名称 Name	材料规格 Material specifications	数量 Quantity	备注 note
1	核心元件 Core element	热敏电阻芯片 50kΩ	1	
2	包封类 Coating material	玻壳	1	
3	电极 Electrode	镀锡电极	2	
4	引线 Lead	铁镍合金	2	

4、可靠性 Reliability

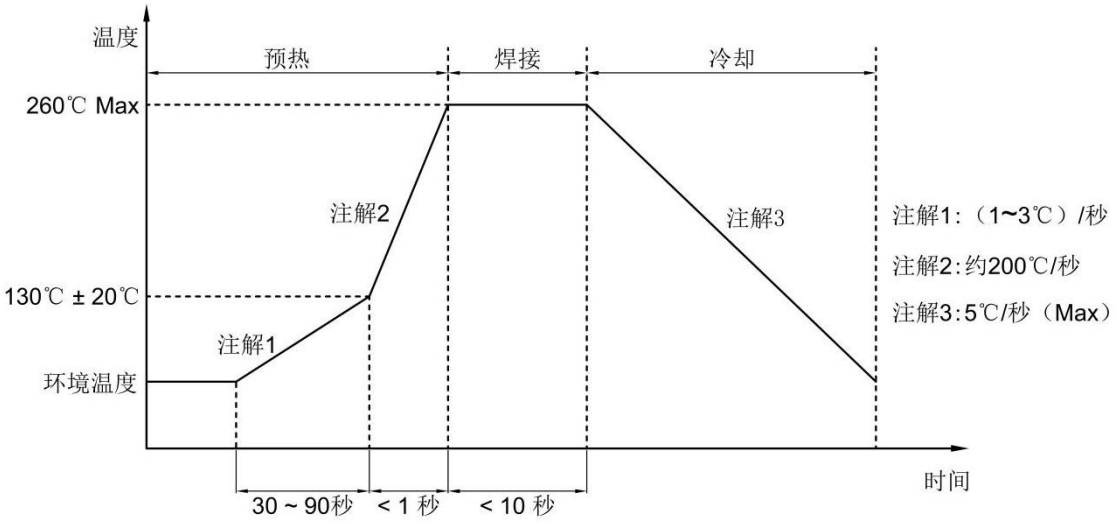
No.	项目 Test Item	试验标准 Test Standard	试验条件及方法 Test Conditions / Methods	性能要求 Acceptance Criteria
4.1	引出端强度 Tensile Strength of Terminals	IEC60068-2-21	固定电阻端，拉力：10N±1 N，时间：10±1 秒 Keep the unit fixed, apply 10 ± 1 N for 10 ± 1 seconds.	无可见性损伤 No Visible damage| Δ R_{25}/R_{25}|≤2%
4.2	可焊性 Solder ability	IEC60068-2-20	温度：245℃±5℃，时间：2-3 秒 Temperature: 245℃ ± 5℃ for 2 ~ 3 seconds.	着锡面积≥95% Coverage area≥95%
4.3	耐焊接热 Resistance to Soldering Heat	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 solder bath: 260℃ ± 5℃, insertion depth: 6 mm from resistor body, duration: 5 ± 1 seconds.	无可见性损伤 No Visible damage | Δ R_{25}/R_{25}|≤2%
4.4	稳态湿热 Damp heat, Steady State	IEC60068-2-78	温度：40℃±2℃,湿度：93%RH±2%RH,时间：500h Temperature: 40℃ ± 2℃, 93% RH ± 2% RH, 500 hrs.	无可见性损伤 No Visible damage | Δ R_{25}/R_{25}|≤2%
4.5	温度快速变化 Rapid changes of temperature	IEC60068-2-14	以下条件重复 5 个周期 The conditions shown below shall be repeated 5 cycles.	无可见性损伤 No Visible damage | Δ R_{25}/R_{25}|≤2%

步骤 Step	温度 Temperature (℃)	周期 Period (minutes)
1	-55±5	30±3
2	Room Temperature (室温)	5±3
3	250±5	30±3
4	Room Temperature (室温)	5±3

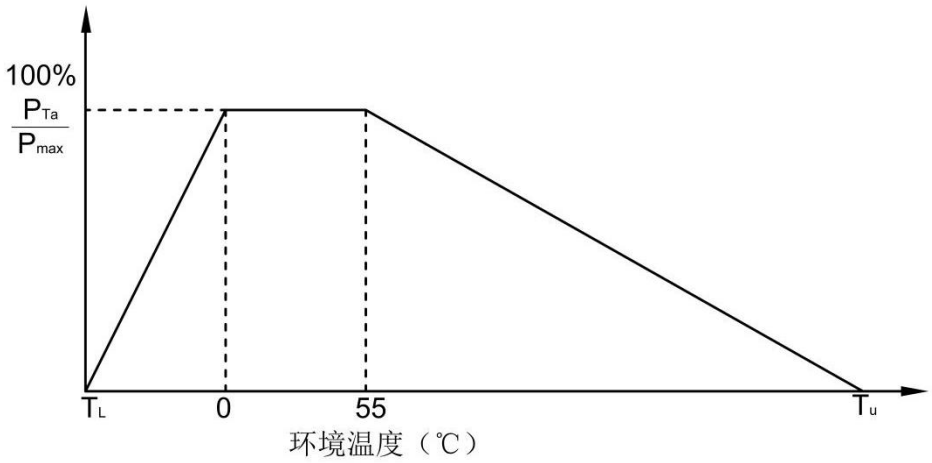
4.6	高温储存 High temperature storage	IEC60068-2-2	温度：250℃±2℃，时间：1000h Temperature: 250℃ ± 2℃, Duration: 1000 hrs.	无可见性损伤 No Visible damage | Δ R_{25}/R_{25}|≤2%
4.7	低温储存 Low temperature storage	IEC60068-2-1	温度：-55℃±2℃，时间：1000h Temperature: －55℃ ± 2℃, Duration: 1000 hrs.	无可见性损伤 No Visible damage | Δ R_{25}/R_{25}|≤2%

▲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）=85℃

最高工作温度（T_U）=250℃

P_{Ta}=（T_U-T_a)/(T_U-55)*P_{max}=84.6%P_{max}

环境温度（T_a）= -10℃

最低工作温度（T_L）= -55℃

P_{Ta}=（T_L-T_a)/(T_L-0)*P_{max}=81.8%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	热封口袋(Heat sealing bag) W×H=110mm×130mm	500
2	内包装盒 Inner box	纸箱(Carton) L×W×H=282mm×193mm×72mm	

8、存储&运输要求 Storage & Transportation requirements

8.1 存储环境要求；Storage environment requirements；

8.1.1 储存温度：-10℃～ +40℃；储存湿度：≤75% RH；

Storage temperature: -10℃～ +40℃; storage humidity: ≤75% RH；

8.1.2 避免存放在具有腐蚀性物质及气体的环境中、光照及辐射源的环境下；

Avoid storage in the environment of corrosive substances and gas, light and radiation source；

8.1.3 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；

After the package is opened, it should be re-sealed and stored for one year. If the storage period exceeds, it can be retested according to the items specified in this sheet. If it meets the requirements, it can still be used；

8.2 运输要求；Transportation requirements；

8.2.1 存储或运输过程中，产品叠放高度不超过 4 箱产品；

During storage or transportation, the height of stacked products should not exceed the height of 4 boxes；

8.2.2 避免产品在运输过程中强烈碰撞和跌落；

Avoid strong collision and fall during transportation；

8.2.3 产品运输方式不限，但需要避免雨水、雪、冰雹、海水的直接或间接淋袭。

The transportation method is not limited, but the direct or indirect attack of rain, snow, hail and sea water should be avoided.

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

9.1 本产品的用途：温度测量与控制；

Usage of this product: Temperature measurement and control；

9.2 本产品适用于常规家用、工业产品上，如果用于特殊设备/装置如：航空航天、深海探测、医疗、军用、新能源电源、铁道交通、消防、交通信号等设备上，请联系我司人员对相应的要求进行确认；

This product is used for conventional household and industrial products. If used in special equipment/device such as: aerospace, deep sea exploration, medical, military, new energy power supply, railway traffic, fire control, traffic signals and other equipment, please contact our staff to confirm the corresponding requirements；

9.3 产品使用的最大工作温度，最大功率等，依照规格书要求作业，不可超出规格书范围；

The maximum working temperature, maximum power, etc. of the product shall be operated in accordance with the requirements of the specification, and shall not exceed the scope of the specification；

9.4 设计使用时，避免过大的电流引起元件自身发热而产生测量误差；

When designing and using, avoid measuring error caused by excessive current；

9.5 产品外观发现变形、破损时，不建议使用，可能会影响产品电气性能；

If the product is deformed or damaged, do not use it. Otherwise, the electrical performance may be affected；

9.6 烙铁焊接时，焊接处距玻壳距离至少 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 glass shell should be at least 2mm, the welding temperature should be lower than 360℃, and the welding time should be less than 3sec；

9.7 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；

9.8 一般不建议做注塑加工，因为注塑工艺的高温和高压会直接影响产品性能，本产品如果采用注塑工艺加工，需与我司确认具体的注塑工艺参数；

Generally, injection molding is not recommended, because the high temperature and high pressure of injection molding process will directly affect the product performance. If the product is processed by injection molding process, it is necessary to confirm the specific injection molding process parameters with our company；

9.9 产品核心芯片为陶瓷半导体，在使用过程中避免挤压或对玻壳物理撞击，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 glass shell in the process of use, so as not to cause product damage；

9.10 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 f or glass shell.

10、产品认证 Product certification

No.	项目 Projects	产品认证 Product certification
10.1	质量管理体系认证 Quality Management System Certification	ISO9001:2015
		IATF16949：2016
10.2	环境管理体系认证 Environmental Management System Certification	ISO14001:2015
10.3	知识产权管理体系认证 Intellectual Property Management System Certification	GB/T29490-2013
10.4	环保检测报告 Environmental test report	RoHS 2.0
10.5	UL/cUL 认证（E240991） UL/cUL certificate（E240991）	
10.6	CQC 认证（CQC09001033986） CQC certificate（CQC09001033986）	
10.7	TUV 认证（R50245892） TUV certificate（R50245892）	

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R_{25}=50kΩ 精度:±3%　　$B_{25/50}$=3950K 精度:±1%（P214-9）

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	3527.69	3807	4086.3	7.336	-7.336	0.991	-0.991
-54	3204.34	3454.42	3704.5	7.239	-7.239	0.992	-0.992
-53	2940.42	3166.92	3393.43	7.152	-7.152	0.992	-0.992
-52	2720.35	2927.42	3134.49	7.073	-7.073	0.992	-0.992
-51	2532.96	2723.64	2914.33	7.001	-7.001	0.991	-0.991
-50	2370.09	2546.68	2723.26	6.933	-6.933	0.99	-0.99
-49	2225.82	2390.02	2554.22	6.87	-6.87	0.988	-0.988
-48	2095.77	2248.91	2402.04	6.809	-6.809	0.986	-0.986
-47	1976.79	2119.88	2262.98	6.75	-6.75	0.983	-0.983
-46	1866.56	2000.43	2134.3	6.691	-6.691	0.981	-0.981
-45	1763.45	1888.75	2014.06	6.634	-6.634	0.978	-0.978
-44	1666.27	1783.58	1900.88	6.577	-6.577	0.975	-0.975
-43	1574.23	1684.02	1793.81	6.519	-6.519	0.973	-0.973
-42	1486.77	1589.48	1692.18	6.461	-6.461	0.97	-0.97
-41	1403.54	1499.56	1595.58	6.403	-6.403	0.967	-0.967
-40	1324.28	1414	1503.71	6.344	-6.344	0.964	-0.964
-39	1248.86	1332.61	1416.37	6.285	-6.285	0.962	-0.962
-38	1177.15	1255.29	1333.44	6.225	-6.225	0.959	-0.959
-37	1109.07	1181.94	1254.8	6.164	-6.164	0.957	-0.957
-36	1044.56	1112.46	1180.37	6.104	-6.104	0.954	-0.954
-35	983.531	1046.79	1110.05	6.043	-6.043	0.952	-0.952
-34	925.905	984.819	1043.73	5.982	-5.982	0.949	-0.949
-33	871.585	926.44	981.294	5.921	-5.921	0.947	-0.947
-32	820.466	871.537	922.608	5.859	-5.859	0.945	-0.945
-31	772.43	819.979	867.528	5.798	-5.798	0.942	-0.942
-30	727.348	771.623	815.899	5.737	-5.737	0.94	-0.94
-29	685.085	726.321	767.557	5.677	-5.677	0.938	-0.938
-28	645.499	683.915	722.332	5.617	-5.617	0.935	-0.935
-27	608.446	644.249	680.052	5.557	-5.557	0.933	-0.933
-26	573.781	607.163	640.544	5.497	-5.497	0.93	-0.93
-25	541.361	572.5	603.638	5.439	-5.439	0.928	-0.928
-24	511.043	540.105	569.167	5.38	-5.38	0.925	-0.925
-23	482.692	509.83	536.969	5.323	-5.323	0.923	-0.923
-22	456.174	481.531	506.888	5.265	-5.265	0.92	-0.92
-21	431.364	455.07	478.776	5.209	-5.209	0.917	-0.917
-20	408.143	430.318	452.494	5.153	-5.153	0.914	-0.914
-19	386.396	407.153	427.91	5.097	-5.097	0.911	-0.911

-18	366.019	385.459	404.898	5.043	-5.043	0.908	-0.908
-17	346.913	365.129	383.345	4.988	-4.988	0.905	-0.905
-16	328.984	346.063	363.142	4.935	-4.935	0.902	-0.902
-15	312.147	328.169	344.191	4.882	-4.882	0.898	-0.898
-14	296.324	311.361	326.398	4.829	-4.829	0.895	-0.895
-13	281.44	295.56	309.68	4.777	-4.777	0.891	-0.891
-12	267.428	280.693	293.958	4.725	-4.725	0.887	-0.887
-11	254.227	266.694	279.16	4.674	-4.674	0.883	-0.883
-10	241.778	253.5	265.221	4.623	-4.623	0.879	-0.879
-9	230.03	241.054	252.079	4.573	-4.573	0.875	-0.875
-8	218.934	229.307	239.679	4.523	-4.523	0.871	-0.871
-7	208.446	218.209	227.971	4.473	-4.473	0.867	-0.867
-6	198.526	207.717	216.907	4.424	-4.424	0.862	-0.862
-5	189.136	197.791	206.445	4.375	-4.375	0.858	-0.858
-4	180.243	188.394	196.546	4.326	-4.326	0.853	-0.853
-3	171.814	179.493	187.173	4.278	-4.278	0.849	-0.849
-2	163.821	171.057	178.293	4.23	-4.23	0.844	-0.844
-1	156.237	163.056	169.876	4.182	-4.182	0.839	-0.839
0	149.038	155.466	161.893	4.134	-4.134	0.834	-0.834
1	142.2	148.26	154.32	4.087	-4.087	0.829	-0.829
2	135.705	141.418	147.131	4.039	-4.039	0.824	-0.824
3	129.53	134.918	140.305	3.992	-3.992	0.819	-0.819
4	123.66	128.74	133.82	3.945	-3.945	0.814	-0.814
5	118.077	122.868	127.659	3.899	-3.899	0.809	-0.809
6	112.765	117.284	121.803	3.852	-3.852	0.803	-0.803
7	107.711	111.973	116.235	3.806	-3.806	0.798	-0.798
8	102.9	106.92	110.941	3.76	-3.76	0.793	-0.793
9	98.32	102.112	105.905	3.714	-3.714	0.787	-0.787
10	93.735	97.302	100.868	3.665	-3.665	0.784	-0.784
11	89.804	93.18	96.555	3.622	-3.622	0.776	-0.776
12	85.848	89.033	92.217	3.577	-3.577	0.77	-0.77
13	82.078	85.083	88.088	3.531	-3.531	0.765	-0.765
14	78.487	81.322	84.158	3.486	-3.486	0.759	-0.759
15	75.065	77.74	80.415	3.441	-3.441	0.753	-0.753
16	71.803	74.328	76.852	3.396	-3.396	0.747	-0.747
17	68.694	71.076	73.459	3.351	-3.351	0.741	-0.741
18	65.73	67.979	70.227	3.307	-3.307	0.735	-0.735
19	62.905	65.027	67.148	3.262	-3.262	0.729	-0.729
20	60.211	62.213	64.216	3.218	-3.218	0.723	-0.723
21	57.642	59.532	61.422	3.174	-3.174	0.717	-0.717
22	55.192	56.976	58.76	3.13	-3.13	0.711	-0.711
23	52.855	54.539	56.222	3.086	-3.086	0.705	-0.705

24	50.626	52.215	53.804	3.043	-3.043	0.699	-0.699
25	48.5	50	51.5	3	-3	0.694	-0.694
26	46.429	47.886	49.344	3.043	-3.043	0.707	-0.707
27	44.455	45.871	47.286	3.086	-3.086	0.72	-0.72
28	42.572	43.948	45.323	3.129	-3.129	0.734	-0.734
29	40.777	42.113	43.449	3.171	-3.171	0.748	-0.748
30	39.065	40.362	41.659	3.214	-3.214	0.763	-0.763
31	37.431	38.691	39.951	3.256	-3.256	0.777	-0.777
32	35.873	37.096	38.32	3.298	-3.298	0.791	-0.791
33	34.385	35.574	36.762	3.34	-3.34	0.806	-0.806
34	32.966	34.12	35.274	3.382	-3.382	0.82	-0.82
35	31.611	32.732	33.852	3.423	-3.423	0.835	-0.835
36	30.317	31.405	32.494	3.465	-3.465	0.849	-0.849
37	29.082	30.139	31.195	3.506	-3.506	0.864	-0.864
38	27.902	28.928	29.954	3.547	-3.547	0.879	-0.879
39	26.775	27.771	28.768	3.588	-3.588	0.894	-0.894
40	25.698	26.666	27.633	3.628	-3.628	0.909	-0.909
41	24.669	25.609	26.548	3.669	-3.669	0.924	-0.924
42	23.686	24.598	25.511	3.709	-3.709	0.939	-0.939
43	22.746	23.632	24.518	3.749	-3.749	0.954	-0.954
44	21.847	22.707	23.568	3.789	-3.789	0.97	-0.97
45	20.987	21.823	22.659	3.829	-3.829	0.985	-0.985
46	20.165	20.977	21.788	3.868	-3.868	1.001	-1.001
47	19.379	20.167	20.955	3.908	-3.908	1.016	-1.016
48	18.627	19.392	20.158	3.947	-3.947	1.032	-1.032
49	17.907	18.65	19.393	3.986	-3.986	1.048	-1.048
50	17.217	17.94	18.662	4.025	-4.025	1.064	-1.064
51	16.558	17.259	17.96	4.063	-4.063	1.079	-1.079
52	15.926	16.607	17.289	4.102	-4.102	1.095	-1.095
53	15.321	15.983	16.645	4.14	-4.14	1.112	-1.112
54	14.742	15.385	16.027	4.178	-4.178	1.128	-1.128
55	14.187	14.811	15.436	4.216	-4.216	1.144	-1.144
56	13.655	14.262	14.868	4.254	-4.254	1.16	-1.16
57	13.145	13.735	14.324	4.292	-4.292	1.177	-1.177
58	12.657	13.229	13.802	4.329	-4.329	1.193	-1.193
59	12.188	12.745	13.302	4.367	-4.367	1.21	-1.21
60	11.739	12.28	12.821	4.404	-4.404	1.226	-1.226
61	11.309	11.835	12.36	4.441	-4.441	1.243	-1.243
62	10.896	11.407	11.918	4.478	-4.478	1.26	-1.26
63	10.5	10.997	11.493	4.514	-4.514	1.277	-1.277
64	10.12	10.603	11.085	4.551	-4.551	1.294	-1.294
65	9.756	10.225	10.694	4.587	-4.587	1.311	-1.311

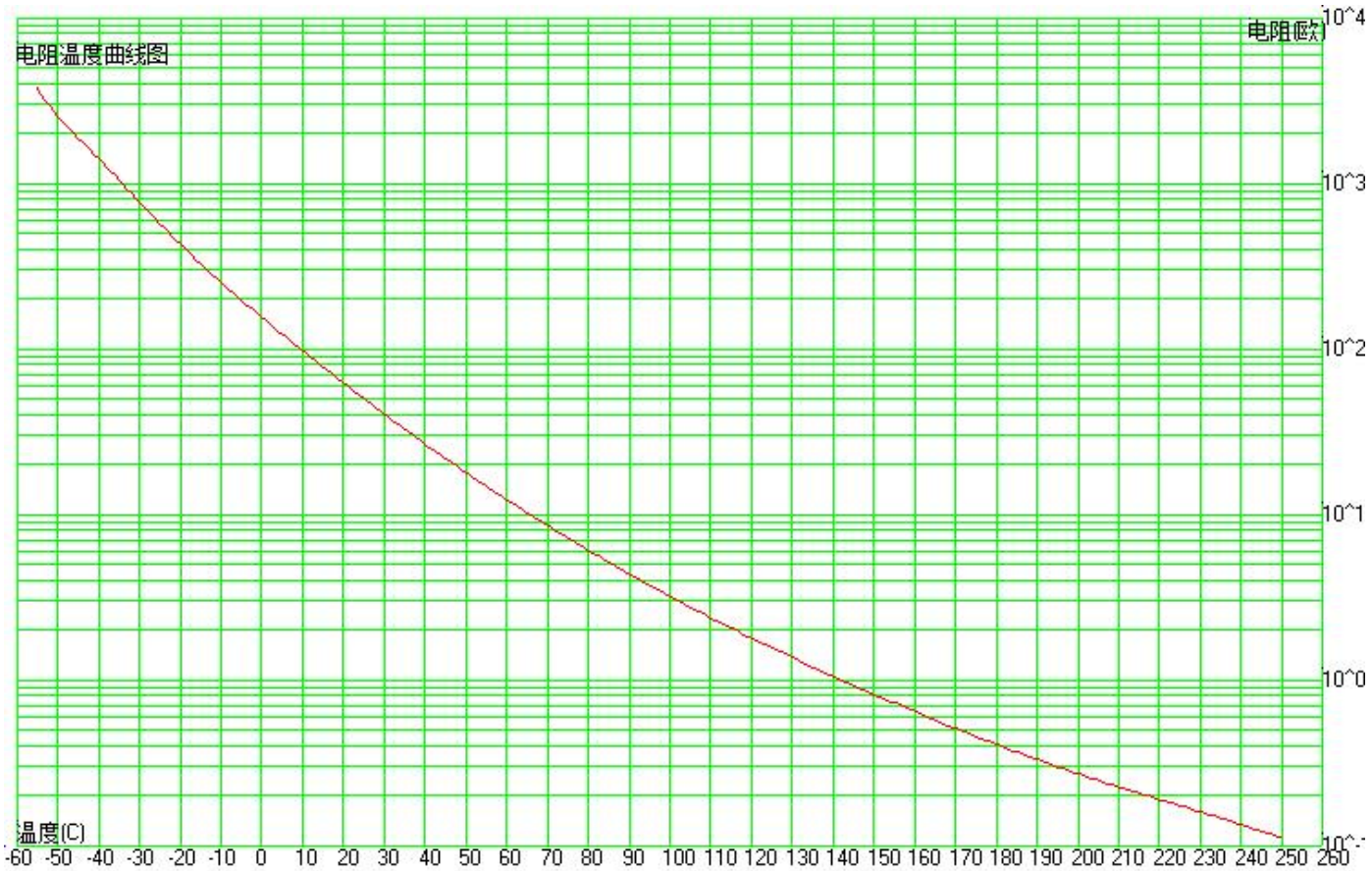
66	9.406	9.862	10.318	4.623	-4.623	1.328	-1.328
67	9.07	9.513	9.957	4.659	-4.659	1.345	-1.345
68	8.748	9.179	9.61	4.695	-4.695	1.362	-1.362
69	8.438	8.857	9.276	4.731	-4.731	1.38	-1.38
70	8.141	8.549	8.956	4.766	-4.766	1.397	-1.397
71	7.856	8.252	8.648	4.802	-4.802	1.415	-1.415
72	7.582	7.967	8.352	4.837	-4.837	1.432	-1.432
73	7.318	7.693	8.068	4.872	-4.872	1.45	-1.45
74	7.065	7.43	7.795	4.907	-4.907	1.468	-1.468
75	6.822	7.177	7.532	4.941	-4.941	1.486	-1.486
76	6.589	6.934	7.279	4.976	-4.976	1.504	-1.504
77	6.364	6.7	7.036	5.01	-5.01	1.522	-1.522
78	6.148	6.475	6.802	5.044	-5.044	1.54	-1.54
79	5.941	6.259	6.577	5.078	-5.078	1.558	-1.558
80	5.741	6.051	6.36	5.112	-5.112	1.577	-1.577
81	5.549	5.851	6.152	5.146	-5.146	1.595	-1.595
82	5.365	5.658	5.951	5.179	-5.179	1.614	-1.614
83	5.187	5.473	5.758	5.213	-5.213	1.632	-1.632
84	5.016	5.294	5.572	5.246	-5.246	1.651	-1.651
85	4.852	5.123	5.393	5.279	-5.279	1.67	-1.67
86	4.694	4.957	5.221	5.312	-5.312	1.688	-1.688
87	4.542	4.798	5.054	5.344	-5.344	1.707	-1.707
88	4.395	4.645	4.895	5.377	-5.377	1.726	-1.726
89	4.254	4.497	4.74	5.409	-5.409	1.746	-1.746
90	4.118	4.355	4.592	5.441	-5.441	1.765	-1.765
91	3.987	4.218	4.449	5.473	-5.473	1.784	-1.784
92	3.861	4.086	4.311	5.505	-5.505	1.803	-1.803
93	3.739	3.959	4.178	5.537	-5.537	1.823	-1.823
94	3.622	3.836	4.05	5.568	-5.568	1.842	-1.842
95	3.509	3.718	3.926	5.6	-5.6	1.862	-1.862
96	3.401	3.604	3.807	5.631	-5.631	1.882	-1.882
97	3.296	3.494	3.691	5.662	-5.662	1.902	-1.902
98	3.195	3.388	3.58	5.693	-5.693	1.922	-1.922
99	3.097	3.285	3.473	5.723	-5.723	1.941	-1.941
100	3.003	3.187	3.37	5.754	-5.754	1.962	-1.962
101	2.912	3.091	3.27	5.784	-5.784	1.982	-1.982
102	2.825	2.999	3.174	5.815	-5.815	2.002	-2.002
103	2.74	2.91	3.081	5.845	-5.845	2.022	-2.022
104	2.659	2.825	2.991	5.875	-5.875	2.043	-2.043
105	2.58	2.742	2.904	5.904	-5.904	2.063	-2.063
106	2.504	2.662	2.82	5.934	-5.934	2.084	-2.084
107	2.431	2.585	2.739	5.963	-5.963	2.105	-2.105

108	2.36	2.51	2.661	5.993	-5.993	2.125	-2.125
109	2.291	2.438	2.585	6.022	-6.022	2.146	-2.146
110	2.225	2.368	2.512	6.051	-6.051	2.167	-2.167
111	2.161	2.301	2.441	6.08	-6.08	2.188	-2.188
112	2.099	2.236	2.372	6.109	-6.109	2.209	-2.209
113	2.039	2.173	2.306	6.137	-6.137	2.23	-2.23
114	1.982	2.112	2.242	6.166	-6.166	2.252	-2.252
115	1.926	2.053	2.18	6.194	-6.194	2.273	-2.273
116	1.872	1.996	2.12	6.222	-6.222	2.294	-2.294
117	1.819	1.941	2.062	6.25	-6.25	2.316	-2.316
118	1.769	1.887	2.006	6.278	-6.278	2.337	-2.337
119	1.72	1.836	1.951	6.306	-6.306	2.359	-2.359
120	1.672	1.785	1.899	6.334	-6.334	2.381	-2.381
121	1.626	1.737	1.847	6.361	-6.361	2.403	-2.403
122	1.582	1.69	1.798	6.389	-6.389	2.425	-2.425
123	1.539	1.644	1.75	6.416	-6.416	2.447	-2.447
124	1.497	1.6	1.703	6.444	-6.444	2.469	-2.469
125	1.457	1.558	1.658	6.471	-6.471	2.491	-2.491
126	1.418	1.516	1.615	6.498	-6.498	2.513	-2.513
127	1.38	1.476	1.572	6.525	-6.525	2.535	-2.535
128	1.343	1.437	1.531	6.551	-6.551	2.558	-2.558
129	1.307	1.399	1.491	6.578	-6.578	2.58	-2.58
130	1.272	1.363	1.453	6.605	-6.605	2.603	-2.603
131	1.239	1.327	1.415	6.631	-6.631	2.625	-2.625
132	1.206	1.292	1.379	6.657	-6.657	2.648	-2.648
133	1.175	1.259	1.343	6.684	-6.684	2.671	-2.671
134	1.144	1.227	1.309	6.71	-6.71	2.694	-2.694
135	1.114	1.195	1.276	6.736	-6.736	2.717	-2.717
136	1.086	1.164	1.243	6.762	-6.762	2.74	-2.74
137	1.058	1.135	1.212	6.788	-6.788	2.763	-2.763
138	1.03	1.106	1.181	6.814	-6.814	2.786	-2.786
139	1.004	1.078	1.152	6.839	-6.839	2.809	-2.809
140	0.978	1.051	1.123	6.865	-6.865	2.832	-2.832
141	0.954	1.024	1.095	6.89	-6.89	2.856	-2.856
142	0.929	0.999	1.068	6.916	-6.916	2.879	-2.879
143	0.906	0.974	1.041	6.941	-6.941	2.903	-2.903
144	0.883	0.949	1.015	6.966	-6.966	2.926	-2.926
145	0.861	0.926	0.991	6.992	-6.992	2.95	-2.95
146	0.839	0.903	0.966	7.017	-7.017	2.973	-2.973
147	0.819	0.881	0.943	7.042	-7.042	2.997	-2.997
148	0.798	0.859	0.92	7.067	-7.067	3.021	-3.021
149	0.778	0.838	0.897	7.091	-7.091	3.045	-3.045

150	0.759	0.818	0.876	7.116	-7.116	3.069	-3.069
151	0.741	0.798	0.855	7.141	-7.141	3.093	-3.093
152	0.722	0.778	0.834	7.165	-7.165	3.117	-3.117
153	0.705	0.76	0.814	7.19	-7.19	3.142	-3.142
154	0.688	0.741	0.795	7.214	-7.214	3.166	-3.166
155	0.671	0.723	0.776	7.239	-7.239	3.19	-3.19
156	0.655	0.706	0.757	7.263	-7.263	3.215	-3.215
157	0.639	0.689	0.74	7.287	-7.287	3.24	-3.24
158	0.624	0.673	0.722	7.311	-7.311	3.264	-3.264
159	0.609	0.657	0.705	7.335	-7.335	3.289	-3.289
160	0.594	0.642	0.689	7.359	-7.359	3.314	-3.314
161	0.58	0.627	0.673	7.383	-7.383	3.339	-3.339
162	0.567	0.612	0.657	7.406	-7.406	3.364	-3.364
163	0.553	0.598	0.642	7.43	-7.43	3.389	-3.389
164	0.54	0.584	0.627	7.453	-7.453	3.414	-3.414
165	0.528	0.57	0.613	7.477	-7.477	3.439	-3.439
166	0.515	0.557	0.599	7.5	-7.5	3.464	-3.464
167	0.503	0.544	0.585	7.523	-7.523	3.49	-3.49
168	0.492	0.532	0.572	7.546	-7.546	3.515	-3.515
169	0.481	0.52	0.559	7.569	-7.569	3.541	-3.541
170	0.47	0.508	0.547	7.592	-7.592	3.566	-3.566
171	0.459	0.497	0.535	7.615	-7.615	3.592	-3.592
172	0.449	0.486	0.523	7.638	-7.638	3.618	-3.618
173	0.438	0.475	0.511	7.66	-7.66	3.644	-3.644
174	0.429	0.464	0.5	7.683	-7.683	3.67	-3.67
175	0.419	0.454	0.489	7.705	-7.705	3.696	-3.696
176	0.41	0.444	0.478	7.727	-7.727	3.722	-3.722
177	0.401	0.434	0.468	7.749	-7.749	3.748	-3.748
178	0.392	0.425	0.458	7.771	-7.771	3.774	-3.774
179	0.383	0.416	0.448	7.793	-7.793	3.801	-3.801
180	0.375	0.407	0.439	7.815	-7.815	3.827	-3.827
181	0.367	0.398	0.429	7.837	-7.837	3.854	-3.854
182	0.359	0.39	0.42	7.858	-7.858	3.88	-3.88
183	0.351	0.381	0.411	7.88	-7.88	3.907	-3.907
184	0.344	0.373	0.403	7.901	-7.901	3.934	-3.934
185	0.337	0.366	0.395	7.922	-7.922	3.961	-3.961
186	0.329	0.358	0.386	7.943	-7.943	3.988	-3.988
187	0.323	0.351	0.378	7.964	-7.964	4.015	-4.015
188	0.316	0.343	0.371	7.985	-7.985	4.042	-4.042
189	0.309	0.336	0.363	8.006	-8.006	4.07	-4.07
190	0.303	0.33	0.356	8.026	-8.026	4.097	-4.097
191	0.297	0.323	0.349	8.046	-8.046	4.125	-4.125

192	0.291	0.316	0.342	8.067	-8.067	4.152	-4.152
193	0.285	0.31	0.335	8.087	-8.087	4.18	-4.18
194	0.279	0.304	0.329	8.107	-8.107	4.208	-4.208
195	0.274	0.298	0.322	8.127	-8.127	4.236	-4.236
196	0.268	0.292	0.316	8.146	-8.146	4.264	-4.264
197	0.263	0.287	0.31	8.166	-8.166	4.292	-4.292
198	0.258	0.281	0.304	8.185	-8.185	4.32	-4.32
199	0.253	0.276	0.298	8.204	-8.204	4.348	-4.348
200	0.248	0.271	0.293	8.224	-8.224	4.377	-4.377
201	0.243	0.265	0.287	8.243	-8.243	4.405	-4.405
202	0.239	0.26	0.282	8.262	-8.262	4.434	-4.434
203	0.234	0.256	0.277	8.28	-8.28	4.463	-4.463
204	0.23	0.251	0.272	8.299	-8.299	4.492	-4.492
205	0.226	0.246	0.267	8.317	-8.317	4.52	-4.52
206	0.222	0.242	0.262	8.336	-8.336	4.549	-4.549
207	0.218	0.237	0.257	8.354	-8.354	4.578	-4.578
208	0.214	0.233	0.253	8.372	-8.372	4.608	-4.608
209	0.21	0.229	0.248	8.39	-8.39	4.637	-4.637
210	0.206	0.225	0.244	8.408	-8.408	4.666	-4.666
211	0.202	0.221	0.24	8.426	-8.426	4.696	-4.696
212	0.199	0.217	0.235	8.444	-8.444	4.725	-4.725
213	0.195	0.213	0.231	8.461	-8.461	4.755	-4.755
214	0.192	0.21	0.227	8.479	-8.479	4.785	-4.785
215	0.188	0.206	0.224	8.496	-8.496	4.814	-4.814
216	0.185	0.202	0.22	8.514	-8.514	4.844	-4.844
217	0.182	0.199	0.216	8.531	-8.531	4.874	-4.874
218	0.179	0.196	0.212	8.548	-8.548	4.904	-4.904
219	0.176	0.192	0.209	8.565	-8.565	4.935	-4.935
220	0.173	0.189	0.205	8.582	-8.582	4.965	-4.965
221	0.17	0.186	0.202	8.599	-8.599	4.995	-4.995
222	0.167	0.183	0.198	8.616	-8.616	5.025	-5.025
223	0.164	0.18	0.195	8.633	-8.633	5.056	-5.056
224	0.161	0.177	0.192	8.65	-8.65	5.086	-5.086
225	0.159	0.174	0.189	8.667	-8.667	5.117	-5.117
226	0.156	0.171	0.186	8.684	-8.684	5.148	-5.148
227	0.153	0.168	0.183	8.701	-8.701	5.178	-5.178
228	0.151	0.165	0.179	8.718	-8.718	5.209	-5.209
229	0.148	0.162	0.176	8.735	-8.735	5.24	-5.24
230	0.146	0.16	0.174	8.752	-8.752	5.271	-5.271
231	0.143	0.157	0.171	8.769	-8.769	5.301	-5.301
232	0.141	0.154	0.168	8.786	-8.786	5.332	-5.332
233	0.138	0.151	0.165	8.804	-8.804	5.363	-5.363

234	0.136	0.149	0.162	8.821	-8.821	5.394	-5.394
235	0.133	0.146	0.159	8.839	-8.839	5.425	-5.425
236	0.131	0.144	0.157	8.856	-8.856	5.456	-5.456
237	0.129	0.141	0.154	8.874	-8.874	5.487	-5.487
238	0.126	0.139	0.151	8.892	-8.892	5.518	-5.518
239	0.124	0.136	0.148	8.91	-8.91	5.549	-5.549
240	0.122	0.134	0.146	8.929	-8.929	5.58	-5.58
241	0.119	0.131	0.143	8.947	-8.947	5.611	-5.611
242	0.117	0.129	0.14	8.966	-8.966	5.642	-5.642
243	0.115	0.126	0.138	8.985	-8.985	5.673	-5.673
244	0.113	0.124	0.135	9.005	-9.005	5.704	-5.704
245	0.11	0.122	0.133	9.024	-9.024	5.735	-5.735
246	0.108	0.119	0.13	9.044	-9.044	5.766	-5.766
247	0.106	0.117	0.127	9.065	-9.065	5.797	-5.797
248	0.104	0.114	0.125	9.085	-9.085	5.828	-5.828
249	0.102	0.112	0.122	9.107	-9.107	5.858	-5.858
250	0.099	0.11	0.12	9.128	-9.128	5.889	-5.889



附表 II Attachment II

