



产品规格承认书

客户名称:

品 名: 热敏电阻

型号规格: NTC 10K/±1%/B=3950/漆包铜线 60MM

产品编码: MF52B103F3950L060-20

客户料号:

承认书编号: CX-NTC-250617-04

发行日期: 2025-11-18

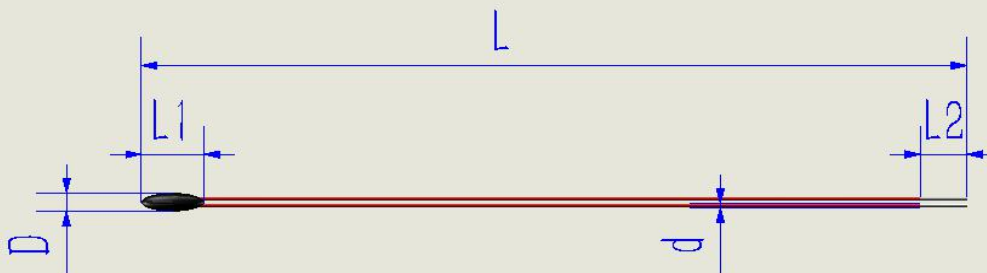
东莞市成希电子有限公司			客户承认		
拟订	审核	核准	承认	审核	核准
傅映霞 2025-11-18	李丹 2025-11-18	徐滢涛 2025-11-18			



承认书修订履历表

序号	版本号	修订履历	生效日期
1	1.0	初始发行	2024-05-10

B型：（引线为漆包线） （Enamelled cu wire）



D max	L1 max	L	L2	$\Phi d \pm 0.03$
1.8	4.0	60 ± 3.0	3 ± 1.0	0.27

2.产品组成 Components

序号 Part	材料名称 Definition	规格 Specification
①	环氧树脂 Epoxy	J-106AB 黑色 J-106A Black
②	引线 Wire	漆包线 Enamelled cu wire
③	芯片 NTC Chip	$R_{25}=10k\Omega \pm 1\%$ $B_{25/50}=3950 \pm 1\%$
④	焊锡 Solder	Sn96%Ag4%

3.产品描述和料号 Product Description and Identification (Part Number)

3.1 产品描述 Product Description

环氧树脂包封型 NTC 热敏电阻，25℃的零功率电阻值： $10k\Omega \pm 1\%$ ，

B 值常数： $3950K \pm 1\%$ (25℃/50℃)，

标称值测量温度：25℃。

Epoxy coating type NTC thermistor, Nominal Zero-Power Resistance at

25℃: $10K\Omega \pm 1\%$,

B Constant value: $3950K \pm 1\%$ (25℃/50℃) ,

Nominal value measuring temperature: 25℃.

3.2 料号 Identification (Part Number)

MF52 B 103 F 3950 F

① ② ③ ④ ⑤ ⑥

MF52 ① 类别 Type	珠状精密型NTC热敏电阻 pearl-shape temperature measurement NTC thermistor
B ② 不同外型结构和尺寸代号 Different Configuration and code	B型引线为漆包线 Enamelled cu wire
103 ③ 25℃标称零功率电阻值 Nominal Zero-Power Resistance at 25℃	103为10KΩ 103 is 10KΩ
F ④ 电阻允许偏差代号 Allowable tolerance code	F±1% G±2% H±3% J±5%
3950 ⑤ B值常数 B Constant	B 值常数 B Constant
F ⑥ B值允许偏差代号(根据需要标注, ±1%时省略) The allowable tolerance of B (Label by Requirement)	F±1% G±2% H±3% J±5%

4.电气性能

序号 Part	项目Items	测试条件 Measure methods	单位 Unit	最小 值 Min	正常 值 Nomin al	最大 值 Max
4.1	25℃电阻值(R25) Resistance at 25℃	Ta=25±0.05℃ 测试功率≤0.1mW 流动液体中测试	KΩ	9.9	10	10.1
4.2	B 值(B25℃/50℃)B Value	$B = \frac{(T_s \times T_b) / (T_s - T_b)}{\ln(R_s / R_b)}$ $T_b = 50 \text{ } ^\circ\text{C} \pm 0.1^\circ\text{C}$	K	3911	3950	3990
4.3	耗散系数(σ) Dissipation	Ta=25±0.5℃	mW / ℃	/	/	3
4.4	热时间常数(τ)Thermal Time Constant	静止空气中,电阻变化 63.2%所花的时间。 In static air, the time ittakes for the resistance to change by 63.2%.	sec	/	/	15
4.6	工作温度范围Operating temperature	/	℃	-40	/	125

5.检验和测试程序

• 测试条件

如无特别规定，检验和测试的标准大气环境条件如下：

- 环境温度：20±15℃；
- 相对湿度：65±20%；
- 气压：86 kPa~106 kPa

如果对测试结果有异议，则在下述条件下测试：

- 环境温度：25±2℃；
- 相对湿度：65±20%；
- 气压：86kPa~106kPa

• 检查设备

尺寸检查：精度 0.01mm 卡尺

外观检查：20 倍放大镜；

阻值检查：热敏电阻测试仪

5.Test and Measurement Procedures

• Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- Ambient Temperature: 20±15℃
- Relative Humidity: 65±20%
 - Air Pressure: 86kPa to 106kPa

If any doubt on the results, measurements/tests should be made within the following limits:

- Ambient Temperature: 25±2℃
- Relative Humidity: 65±5%RH
- Air Pressure: 86kPa to 106kPa

• Inspection Equipment

Dimension Examination: Caliper (Precision 0.01mm)

Visual Examination: 20× magnifier

Resistance value test: Thermistor resistance teste

6.可靠性能试验Reliability Test

序号 No	项目 Items	测试标准 Standard	测试条件及方法Test Methods	技术要求Criteria
1	可焊性 Solderability	IEC 60068-2-58	将引线浸入245±5℃的锡液中，时间2~3 秒。 Immerse the lead wire in a molten solder of 245±5℃ for 2~3 seconds.	焊锡涂布均匀，上锡率达到95%上。 Tin coating is uniform and coverage≥95%
2	耐焊性 Resistance to Soldering Heat	IEC 60068-2-58	将引线浸入265±5℃的锡液中，时间5±1秒。 Immerse the lead wire in a molten solder of 265±5℃ for 5±1 seconds.	Δ R/R25≤±2% 无可见性损伤 No visible damage
3	引出端强度 Tensile Strength of Terminals	IEC60068-2-21	拉力 Pulling force: 5N, 时间 Duration: 10 秒	
4	冷热冲击 Thermal shock	IEC 60068-2-14	-40℃ 30min→25℃ 5min→105℃ 30min→25℃ 5min, 反复5次 5times, 恢复4小时	

			Stay at room ambient for 4 hours	$\Delta R/R25 \leq \pm 2\%$ 无可见性损伤 No visible damage
5	高温存放 High Temperature Storage	IEC 60068-2-2	$125 \pm 2^\circ\text{C}$, $1000 \pm 24\text{h}$	
6	低温存放 Low Temperature Storage	IEC 60068-2-1	$-40 \pm 2^\circ\text{C}$, $1000 \pm 24\text{h}$	
7	湿热存放 Damp & Heat Storage	IEC 60068-2-78	$40 \pm 2^\circ\text{C}$, 90~95%, $500 \pm 12\text{h}$	
8	振动 Vibration	IEC 60068-2-6	振动频率 Vibrating frequency range: 10~500HZ, 振幅 Amplitude: 0.75mm, 时间 Duration: 2小时	
9	坠落 Dropping	IEC 60068-2-32	在 1 米的高度,让产品做自由落体运动, 下落到水泥地面上, 5 次 Free falling at the height of 1 meter to cement floor, 5 times	

7.焊接条件

焊接时,焊接处距电阻体根部至6mm,焊接温度应低于350℃,焊接时间应尽量短.

When welding, the welding temperature should be less than 350℃ from the root of resistance to 6 mm,, and the welding time should be as short as possible.

8.包装和储存条件 Packaging and Storage

8.1包装 Packaging

包装方式 Packaging way: 袋装 (每袋/1000PCS) Bags (per bag/1000PCS)

8.2储存 Storage

储存条件 Storage Conditions

- 储存温度 Storage temperature: $20 \pm 15^\circ\text{C}$
- 相对湿度 Relative humidity: $\leq 75\% \text{RH}$
- 避免接触腐蚀性气氛和阳光 Avoid contact with corrosive atmosphere and sunlight

TEMPERATURE VS RESISTANCE TABLE

Resistance 10k Ohms at 25deg. C

Resistance Tolerance + / - 1%

B Value 3950K at 25/50 deg. C

B Value Tolerance + / - 1%

Temp. (deg. C)	Rmin (k Ohms)	Rnor (k Ohms)	Rmax (k Ohms)
-40	268.491	280.660	292.828
-39	252.517	263.791	275.064
-38	237.598	248.046	258.494
-37	223.660	233.346	243.032
-36	210.632	219.615	228.598
-35	198.452	206.785	215.119
-34	187.058	194.792	202.525
-33	176.396	183.576	190.755
-32	166.415	173.082	179.749
-31	157.067	163.260	169.453
-30	148.307	154.062	159.817
-29	140.096	145.446	150.795
-28	132.395	137.369	142.343
-27	125.169	129.795	134.421
-26	118.386	122.689	126.993
-25	112.015	116.020	120.024
-24	106.028	109.756	113.483
-23	100.400	103.870	107.341
-22	95.106	98.338	101.570
-21	90.125	93.135	96.145
-20	85.434	88.238	91.043
-19	81.017	83.629	86.242
-18	76.853	79.288	81.723
-17	72.928	75.197	77.467
-16	69.226	71.341	73.456
-15	65.732	67.704	69.676
-14	62.433	64.272	66.111
-13	59.318	61.032	62.747
-12	56.374	57.972	59.571
-11	53.591	55.082	56.572
-10	50.959	52.350	53.740
-9	48.470	49.766	51.062
-8	46.113	47.322	48.531
-7	43.883	45.010	46.137
-6	41.770	42.821	43.872

-5	39.768	40.748	41.728
-4	37.871	38.785	39.699
-3	36.073	36.925	37.776
-2	34.368	35.161	35.955
-1	32.750	33.489	34.229
0	31.356	32.049	32.743
1	29.757	30.399	31.041
2	28.374	28.972	29.570
3	27.060	27.617	28.174
4	25.812	26.330	26.849
5	24.627	25.109	25.591
6	23.500	23.948	24.397
7	22.429	22.846	23.263
8	21.410	21.798	22.186
9	20.442	20.802	21.163
10	19.521	19.856	20.190
11	18.644	18.955	19.266
12	17.811	18.099	18.388
13	17.017	17.285	17.552
14	16.262	16.510	16.758
15	15.543	15.773	16.002
16	14.858	15.071	15.284
17	14.207	14.403	14.600
18	13.586	13.767	13.949
19	12.994	13.162	13.330
20	12.431	12.585	12.740
21	11.894	12.036	12.179
22	11.382	11.513	11.645
23	10.894	11.015	11.136
24	10.429	10.540	10.651
25	9.900	10.000	10.100
26	9.556	9.656	9.756
27	9.145	9.245	9.345
28	8.754	8.853	8.953
29	8.381	8.479	8.578
30	8.025	8.123	8.221
31	7.686	7.783	7.880
32	7.362	7.459	7.555
33	7.054	7.149	7.245
34	6.760	6.854	6.949
35	6.479	6.573	6.666
36	6.212	6.304	6.396

37	5.956	6.047	6.138
38	5.712	5.802	5.892
39	5.480	5.568	5.656
40	5.258	5.345	5.432
41	5.046	5.131	5.217
42	4.843	4.927	5.011
43	4.650	4.733	4.815
44	4.465	4.546	4.628
45	4.289	4.368	4.448
46	4.120	4.198	4.277
47	3.959	4.036	4.113
48	3.805	3.880	3.956
49	3.658	3.732	3.806
50	3.517	3.590	3.662
51	3.382	3.453	3.525
52	3.253	3.323	3.393
53	3.130	3.199	3.267
54	3.012	3.079	3.147
55	2.900	2.965	3.031
56	2.792	2.856	2.920
57	2.688	2.751	2.814
58	2.589	2.651	2.713
59	2.494	2.555	2.615
60	2.404	2.463	2.522
61	2.317	2.375	2.432
62	2.233	2.290	2.347
63	2.153	2.209	2.264
64	2.077	2.131	2.185
65	2.003	2.056	2.110
66	1.933	1.985	2.037
67	1.865	1.916	1.967
68	1.800	1.850	1.900
69	1.738	1.787	1.836
70	1.679	1.726	1.774
71	1.621	1.668	1.714
72	1.566	1.612	1.657
73	1.513	1.558	1.602
74	1.462	1.506	1.550
75	1.414	1.456	1.499
76	1.367	1.408	1.450
77	1.322	1.362	1.403
78	1.278	1.318	1.358

79	1. 237	1. 276	1. 315
80	1. 196	1. 235	1. 273
81	1. 158	1. 195	1. 233
82	1. 121	1. 157	1. 194
83	1. 085	1. 121	1. 156
84	1. 050	1. 085	1. 120
85	1. 017	1. 052	1. 086
86	0. 985	1. 019	1. 052
87	0. 955	0. 987	1. 020
88	0. 925	0. 957	0. 989
89	0. 896	0. 928	0. 959
90	0. 869	0. 899	0. 930
91	0. 842	0. 872	0. 902
92	0. 816	0. 846	0. 875
93	0. 792	0. 820	0. 849
94	0. 768	0. 796	0. 824
95	0. 745	0. 772	0. 800
96	0. 723	0. 749	0. 776
97	0. 701	0. 727	0. 754
98	0. 680	0. 706	0. 732
99	0. 660	0. 685	0. 711
100	0. 641	0. 666	0. 690
101	0. 622	0. 646	0. 670
102	0. 604	0. 628	0. 651
103	0. 586	0. 610	0. 633
104	0. 569	0. 592	0. 615
105	0. 553	0. 575	0. 597
106	0. 537	0. 559	0. 581
107	0. 522	0. 543	0. 564
108	0. 507	0. 528	0. 549
109	0. 493	0. 513	0. 533
110	0. 479	0. 499	0. 519
111	0. 465	0. 485	0. 504
112	0. 452	0. 471	0. 490
113	0. 439	0. 458	0. 477
114	0. 427	0. 445	0. 464
115	0. 415	0. 433	0. 451
116	0. 404	0. 421	0. 439
117	0. 392	0. 410	0. 427
118	0. 382	0. 398	0. 415
119	0. 371	0. 388	0. 404
120	0. 361	0. 377	0. 393

121	0.351	0.367	0.383
122	0.341	0.357	0.372
123	0.332	0.347	0.362
124	0.323	0.338	0.352
125	0.314	0.329	0.343