JEC
ISO-9001

東莞市智旭電子有限公司
JYH HSU（JEC）ELECTRONICS LTD.,

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承　認　書
SPECIFICATION FOR APPROVAL

客户名称
Customer _____

品　　名
Part Name NTC Thermistor

客户料号
Customer Part No: _____

承認規格
Approve Item **MF52A-2KR-B3950-1%**

供应商料号
Part Number _____

日　期
Date **2024-08-13**

客户承认	供应商承认
Customer Acknowledgement	Supplier Acknowledgement
	东莞市智旭电子有限公司 品保部

台湾:智旭电子有限公司
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THERMISTOR SPECIFICATIONS

1) SCOPE

This specifications define ratings, dimension, insulation, climatic sequence and mechanical characteristics for thermistor.

2) PART NO. : MF52A-2KR-B3950-1%

3) RATING

3-1) Rated zero-power resistance R_{25} : 2kΩ ±1 % (at 25℃)

3-2) B value. $B_{25/50}$: 3,950K ±1 %

*The B value is calculated using the zero-power resistance values measured at 25℃ and 50℃.

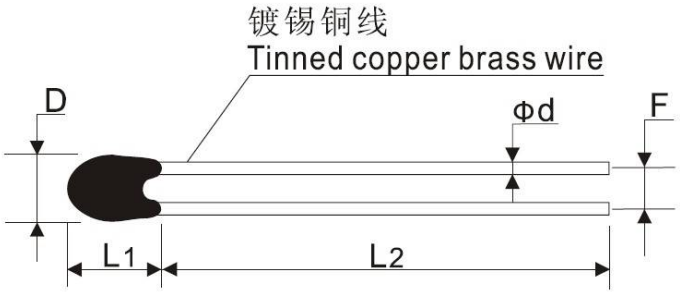
3-3) Dissipation factor. : ≥ 2 mW/℃(in air)

3-4) Thermal time constant. : ≤ 12 s (in air)

3-5) Maximum power rating. : ≤ 50 mW (at 25℃)

3-6) Category temperature range (=Operating temperature range) : -40 ~ 120 ℃

4) DIMENSIONS UNIT: [mm]



Dmax	Lmax	L2min	Φd±0.05	F±0.05
2.4	3.2	25	0.33	2.0

5) Climatic test

5-1) Dry Heat

After the test samples were exposed in air at 110 ℃ for 1,000 hours, the change ratio of the rated zero-power resistance shall be within ± 1% of the initial value.

5-2) Damp heat

After the test samples were exposed in the humidity of 95% at 40℃ for 1,000 hours, the change ratio of the rated zero-power resistance shall be within ±1% of the initial value.

5-3) Cold

After the test samples were exposed in air at -30℃ for 1,000 hours, the change ratio of the rated zero-power resistance shall be within ± 1% of the initial value.

5-4) Humidity load

After DC 1mA current was applied to the test samples in the temperature of 40℃ and the humidity of 95% for 1,000 hours, the change ratio of the rated zero-power resistance shall be within ±1% of the initial value.

5-5) Change of temperature

One cycle of the change of temperature shall be carried our in the order of the following conditions.

.Room ambient temperature.(Initial value)
.At -30℃, for 30 minutes.
.Room ambient temperature, for 3 minutes.
.At + 90℃, for 30 minutes.
.Room ambient temperature, for 3 minutes.

After 100 cycles of change of temperature, the change ratio of the rated zero-power resistance shall be within ±1% of the initial value.

5-6) High temperature load

After DC 1mA current was applied to the test samples in the temperature of 110℃ for 1,000 hours, the change ratio of the rated zero-power resistance shall be within ±1% of the initial value.

6) Mechanical characteristics

6-1) Robustness of terminations

Ua:Tensile

After 2N loading weight for 3 seconds was applied to the wire terminations, there shall be no visible damage.

6-2) Free fall

After one time natural fall to a maple board from 1m high, there shall be no visible damage.

6-3) Resistance to soldering heat

After lead wire of the test samples were dipped on time within 8.5 mm from end of lead wire in solder bath at 260℃ ±10% for 4 ±0.5 seconds, the change ratio of the rated zero-power resistance shall be within ±1% of the initial value.

7) R-T characteristics

Resistance **2k Ohms at 25deg. C**
Resistance Tolerance **+ / - 1 %**
B Value **3950K at 25/50 deg. C**
B Value Tolerance **+ / - 1%**

Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)
-40	77.5933	74.0994	70.7558
-39	72.3293	69.1205	66.0475
-38	67.4596	64.5114	61.6858
-37	62.9521	60.2421	57.6430
-36	58.7775	56.2855	53.8937
-35	54.9090	52.6164	50.4145
-34	51.3221	49.2122	47.1843
-33	47.9944	46.0519	44.1835
-32	44.9056	43.1165	41.3945
-31	42.0369	40.3885	38.8008
-30	39.3713	37.8519	36.3875
-29	36.8930	35.4921	34.1409
-28	34.5876	33.2955	32.0485
-27	32.4420	31.2499	30.0985
-26	30.4441	29.3438	28.2805
-25	28.5828	27.5670	26.5847
-24	26.8478	25.9098	25.0020
-23	25.2299	24.3633	23.5242
-22	23.7203	22.9196	22.1437
-21	22.3111	21.5710	20.8534
-20	20.9950	20.3108	19.6470
-19	19.7653	19.1327	18.5184
-18	18.6158	18.0306	17.4621
-17	17.5408	16.9994	16.4731
-16	16.5349	16.0339	15.5466
-15	15.5933	15.1296	14.6783
-14	14.7114	14.2822	13.8642
-13	13.8852	13.4878	13.1005
-12	13.1108	12.7428	12.3839
-11	12.3846	12.0438	11.7112
-10	11.7033	11.3876	11.0793
-9	11.0639	10.7714	10.4857
-8	10.4635	10.1926	9.9276
-7	9.8996	9.6485	9.4029
-6	9.3696	9.1370	8.9092
-5	8.8714	8.6558	8.4446

-4	8.4029	8.2031	8.0072
-3	7.9620	7.7769	7.5953
-2	7.5471	7.3755	7.2071
-1	7.1564	6.9974	6.8412
0	6.7884	6.6410	6.4962
1	6.4417	6.3051	6.1708
2	6.1148	5.9882	5.8637
3	5.8065	5.6892	5.5738
4	5.5157	5.4070	5.3000
5	5.2412	5.1406	5.0414
6	4.9821	4.8889	4.7970
7	4.7375	4.6511	4.5659
8	4.5063	4.4264	4.3474
9	4.2878	4.2138	4.1407
10	4.0813	4.0128	3.9451
11	3.8859	3.8226	3.7600
12	3.7011	3.6426	3.5846
13	3.5262	3.4721	3.4185
14	3.3607	3.3107	3.2611
15	3.2039	3.1577	3.1119
16	3.0554	3.0127	2.9704
17	2.9146	2.8753	2.8362
18	2.7812	2.7449	2.7089
19	2.6546	2.6213	2.5880
20	2.5346	2.5039	2.4733
21	2.4208	2.3925	2.3643
22	2.3127	2.2867	2.2608
23	2.2100	2.1862	2.1624
24	2.1126	2.0907	2.0689
25	2.0200	2.0000	1.9800
26	1.9337	1.9137	1.8938
27	1.8516	1.8317	1.8118
28	1.7735	1.7536	1.7338
29	1.6991	1.6794	1.6597
30	1.6283	1.6087	1.5891
31	1.5609	1.5414	1.5220
32	1.4966	1.4773	1.4581
33	1.4353	1.4162	1.3972
34	1.3769	1.3580	1.3393
35	1.3213	1.3026	1.2840
36	1.2682	1.2497	1.2314
37	1.2175	1.1993	1.1812
38	1.1691	1.1512	1.1334

39	1.1230	1.1053	1.0878
40	1.0789	1.0615	1.0442
41	1.0368	1.0196	1.0027
42	0.9966	0.9797	0.9630
43	0.9582	0.9416	0.9252
44	0.9214	0.9051	0.8890
45	0.8863	0.8703	0.8544
46	0.8528	0.8370	0.8214
47	0.8206	0.8052	0.7899
48	0.7899	0.7747	0.7597
49	0.7605	0.7456	0.7309
50	0.7324	0.7177	0.7033
51	0.7054	0.6911	0.6769
52	0.6796	0.6655	0.6517
53	0.6549	0.6411	0.6275
54	0.6312	0.6177	0.6044
55	0.6085	0.5952	0.5822
56	0.5868	0.5738	0.5610
57	0.5659	0.5532	0.5406
58	0.5459	0.5334	0.5212
59	0.5267	0.5145	0.5025
60	0.5083	0.4963	0.4846
61	0.4907	0.4789	0.4674
62	0.4737	0.4622	0.4509
63	0.4575	0.4462	0.4351
64	0.4418	0.4308	0.4200
65	0.4268	0.4160	0.4054
66	0.4124	0.4018	0.3915
67	0.3986	0.3882	0.3781
68	0.3853	0.3751	0.3652
69	0.3725	0.3625	0.3528
70	0.3602	0.3504	0.3409
71	0.3483	0.3388	0.3295
72	0.3370	0.3276	0.3186
73	0.3260	0.3169	0.3080
74	0.3155	0.3066	0.2979
75	0.3054	0.2966	0.2881
76	0.2956	0.2870	0.2787
77	0.2862	0.2778	0.2697
78	0.2772	0.2690	0.2610
79	0.2685	0.2604	0.2526
80	0.2601	0.2522	0.2446
81	0.2520	0.2443	0.2368

82	0.2442	0.2367	0.2294
83	0.2367	0.2293	0.2222
84	0.2295	0.2223	0.2153
85	0.2225	0.2154	0.2086
86	0.2158	0.2089	0.2022
87	0.2093	0.2025	0.1960
88	0.2030	0.1964	0.1900
89	0.1970	0.1905	0.1842
90	0.1912	0.1848	0.1787
91	0.1855	0.1793	0.1733
92	0.1801	0.1740	0.1681
93	0.1749	0.1689	0.1631
94	0.1698	0.1640	0.1583
95	0.1649	0.1592	0.1537
96	0.1602	0.1546	0.1492
97	0.1556	0.1501	0.1448
98	0.1512	0.1458	0.1407
99	0.1469	0.1417	0.1366
100	0.1428	0.1377	0.1327
101	0.1388	0.1338	0.1289
102	0.1350	0.1301	0.1253
103	0.1313	0.1264	0.1218
104	0.1277	0.1229	0.1184
105	0.1242	0.1195	0.1151
106	0.1208	0.1163	0.1119
107	0.1176	0.1131	0.1088
108	0.1144	0.1100	0.1058
109	0.1113	0.1071	0.1029
110	0.1084	0.1042	0.1001
111	0.1055	0.1014	0.0974
112	0.1027	0.0987	0.0948
113	0.1000	0.0961	0.0923
114	0.0974	0.0936	0.0898
115	0.0949	0.0911	0.0875
116	0.0925	0.0888	0.0852
117	0.0901	0.0865	0.0829
118	0.0878	0.0842	0.0808
119	0.0856	0.0821	0.0787
120	0.0834	0.0800	0.0767
121	0.0813	0.0780	0.0747
122	0.0793	0.0760	0.0728
123	0.0773	0.0741	0.0710
124	0.0754	0.0722	0.0692
125	0.0736	0.0704	0.0674