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-4.7KR-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-4.7KR-B3950-1%

3) RATING

3-1) Rated zero-power resistance R_{25} : 4.7 kΩ ±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℃.

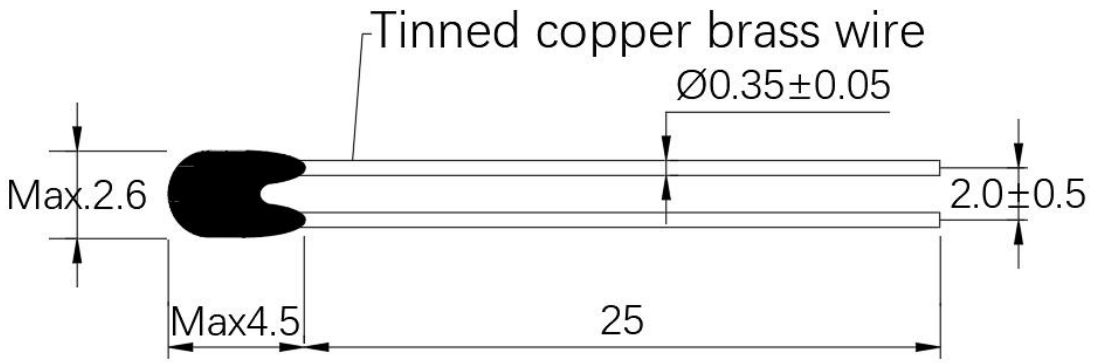
3-3) Dissipation factor. :Approx. 2 mW/℃(in air)

3-4) Thermal time constant. :Approx. 7 s (in air)

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

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

4) DIMENSIONS UNIT: [mm]



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

R_{25}=4.7 kΩ±1%

$B_{25/50}$=3,950K±1%

TEMP	RESISTANCE (KΩ)		
(℃)	MIN.	CENTER.	MAX.
-40	154.3357	161.5073	168.9952
-39	144.3940	151.0020	157.8967
-38	135.1598	141.2509	147.6018
-37	126.5783	132.1950	138.0472
-36	118.5991	123.7803	129.1750
-35	111.1761	115.9573	120.9321
-34	104.2670	108.6807	113.2698
-33	97.8331	101.9088	106.1437
-32	91.8386	95.6035	99.5128
-31	86.2508	89.7298	93.3397
-30	81.0396	84.2553	87.5898
-29	76.1772	79.1505	82.2316
-28	71.6382	74.3881	77.2359
-27	67.3990	69.9431	72.5760
-26	63.4381	65.7924	68.2272
-25	59.7353	61.9146	64.1669
-24	56.2724	58.2902	60.3742
-23	53.0324	54.9010	56.8299
-22	49.9994	51.7305	53.5161
-21	47.1592	48.7631	50.4165
-20	44.4982	45.9846	47.5159

-19	42.0041	43.3819	44.8005
-18	39.6655	40.9428	42.2572
-17	37.4716	38.6561	39.8741
-16	35.4127	36.5113	37.6402
-15	33.4798	34.4988	35.5453
-14	31.6643	32.6097	33.5800
-13	29.9584	30.8356	31.7354
-12	28.3549	29.1689	30.0034
-11	26.8470	27.6025	28.3765
-10	25.4285	26.1298	26.8477
-9	24.0935	24.7445	25.4106
-8	22.8368	23.4411	24.0591
-7	21.6531	22.2142	22.7876
-6	20.5380	21.0589	21.5909
-5	19.4869	19.9706	20.4642
-4	18.4959	18.9450	19.4031
-3	17.5613	17.9782	18.4033
-2	16.6794	17.0665	17.4609
-1	15.8470	16.2064	16.5723
0	15.0610	15.3947	15.7342
1	14.3186	14.6284	14.9434
2	13.6172	13.9048	14.1970
3	12.9543	13.2212	13.4922
4	12.3275	12.5751	12.8265
5	11.7346	11.9644	12.1975
6	11.1737	11.3869	11.6030
7	10.6428	10.8405	11.0408
8	10.1402	10.3236	10.5092
9	9.6643	9.8342	10.0062
10	9.2133	9.3708	9.5301
11	8.7860	8.9319	9.0794
12	8.3810	8.5161	8.6525
13	7.9969	8.1219	8.2482
14	7.6325	7.7483	7.8650
15	7.2869	7.3939	7.5017
16	6.9588	7.0577	7.1573
17	6.6473	6.7387	6.8306
18	6.3515	6.4359	6.5207
19	6.0705	6.1483	6.2265
20	5.8035	5.8752	5.9473
21	5.5497	5.6158	5.6821

22	5.3085	5.3692	5.4301
23	5.0790	5.1348	5.1908
24	4.8607	4.9120	4.9633
25	4.6530	4.7000	4.7470
26	4.4514	4.4983	4.5453
27	4.2596	4.3064	4.3533
28	4.0771	4.1237	4.1704
29	3.9035	3.9497	3.9962
30	3.7381	3.7841	3.8302
31	3.5807	3.6262	3.6720
32	3.4307	3.4758	3.5212
33	3.2878	3.3324	3.3774
34	3.1516	3.1958	3.2402
35	3.0218	3.0654	3.1093
36	2.8980	2.9410	2.9844
37	2.7800	2.8224	2.8652
38	2.6673	2.7092	2.7514
39	2.5599	2.6011	2.6427
40	2.4573	2.4979	2.5388
41	2.3594	2.3993	2.4396
42	2.2659	2.3051	2.3448
43	2.1765	2.2151	2.2542
44	2.0912	2.1291	2.1675
45	2.0097	2.0469	2.0846
46	1.9317	1.9683	2.0053
47	1.8572	1.8931	1.9295
48	1.7859	1.8212	1.8569
49	1.7178	1.7523	1.7874
50	1.6526	1.6864	1.7209
51	1.5902	1.6234	1.6571
52	1.5304	1.5630	1.5961
53	1.4732	1.5052	1.5376
54	1.4185	1.4498	1.4816
55	1.3660	1.3967	1.4279
56	1.3158	1.3458	1.3764
57	1.2677	1.2971	1.3270
58	1.2215	1.2503	1.2797
59	1.1773	1.2055	1.2342
60	1.1349	1.1625	1.1906
61	1.0942	1.1213	1.1488
62	1.0552	1.0817	1.1087

63	1.0178	1.0437	1.0701
64	0.9819	1.0072	1.0331
65	0.9475	0.9722	0.9975
66	0.9144	0.9386	0.9634
67	0.8826	0.9063	0.9306
68	0.8521	0.8753	0.8990
69	0.8228	0.8455	0.8687
70	0.7947	0.8169	0.8396
71	0.7676	0.7893	0.8116
72	0.7416	0.7629	0.7846
73	0.7166	0.7374	0.7587
74	0.6926	0.7129	0.7338
75	0.6695	0.6894	0.7098
76	0.6473	0.6667	0.6867
77	0.6259	0.6449	0.6644
78	0.6053	0.6239	0.6430
79	0.5855	0.6037	0.6224
80	0.5665	0.5843	0.6026
81	0.5482	0.5655	0.5834
82	0.5305	0.5475	0.5650
83	0.5135	0.5301	0.5472
84	0.4971	0.5134	0.5301
85	0.4813	0.4973	0.5136
86	0.4661	0.4817	0.4977
87	0.4515	0.4667	0.4824
88	0.4374	0.4523	0.4676
89	0.4238	0.4383	0.4533
90	0.4106	0.4249	0.4396
91	0.3980	0.4119	0.4263
92	0.3858	0.3994	0.4135
93	0.3740	0.3873	0.4011
94	0.3627	0.3757	0.3892
95	0.3517	0.3645	0.3776
96	0.3411	0.3536	0.3665
97	0.3309	0.3431	0.3557
98	0.3211	0.3330	0.3453
99	0.3115	0.3232	0.3353
100	0.3023	0.3138	0.3256
101	0.2935	0.3047	0.3162
102	0.2849	0.2958	0.3072
103	0.2766	0.2873	0.2984

104	0.2686	0.2791	0.2900
105	0.2609	0.2711	0.2818
106	0.2534	0.2634	0.2738
107	0.2462	0.2560	0.2662
108	0.2392	0.2488	0.2588
109	0.2324	0.2418	0.2516
110	0.2259	0.2351	0.2447
111	0.2196	0.2286	0.2379
112	0.2134	0.2223	0.2314
113	0.2075	0.2162	0.2252
114	0.2018	0.2103	0.2191
115	0.1962	0.2045	0.2132
116	0.1909	0.1990	0.2074
117	0.1857	0.1936	0.2019
118	0.1807	0.1884	0.1965
119	0.1758	0.1834	0.1914
120	0.1711	0.1785	0.1863