



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-47KR-B3950-1% _____

供应商料号
 Part Number _____

日 期
 Date _____ 2024-08-13 _____

客户承认 Customer Acknowledgement	供应商承认 Supplier Acknowledgement 
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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-47KR-B3950-1%

3) RATING

3-1) Rated zero-power resistance R_{25} : 47 K Ω ± 1 % (at 25°C)

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

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

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

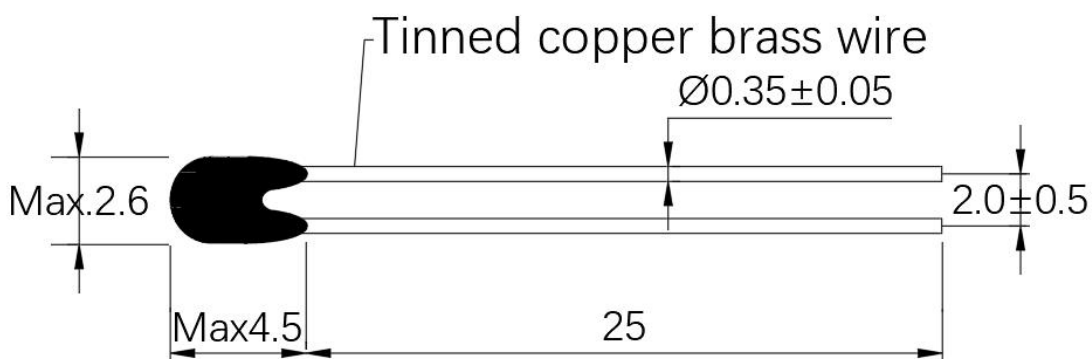
3-4) Thermal time constant. :Approx. 7 s (in air)

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

3-6) Category temperature range : -40 ~ 120 °C

(=Operating temperature range)

4) DIMENSIONS UNIT: [mm]



5) Climatic test

5-1) Dry Heat

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

5-2) Damp heat

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

5-3) Cold

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

5-4) Humidity load

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

5-5) Change of temperature

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

.Room ambient temperature.(Initial value)

.At -30 °C, for 30 minutes.

.Room ambient temperature, for 3 minutes.

.At + 90 °C, 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 $\pm 1\%$ of the initial value.

5-6) High temperature load

After DC 1mA current was applied to the test samples in the temperature of 110 °C for 1,000 hours, the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ 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°C ±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

R25=47 KΩ±1%

B25/50=3,950K±1%

TEMP (°C)	RESISTANCE (K Ω)		
	MIN.	CENTER.	MAX.
-40	1540.4309	1611.9801	1686.6837
-39	1441.0493	1506.9668	1575.7421
-38	1348.7614	1409.5148	1472.8575
-37	1263.0138	1319.0293	1377.3915
-36	1183.3013	1234.9680	1288.7618
-35	1109.1597	1156.8328	1206.4344
-34	1040.1637	1084.1678	1129.9205
-33	975.9238	1016.5554	1058.7727
-32	916.0812	953.6116	992.5802
-31	860.3070	894.9843	930.9663
-30	808.2990	840.3505	873.5855
-29	759.7790	789.4128	820.1204
-28	714.4911	741.8979	770.2789
-27	672.2000	697.5544	723.7928
-26	632.6885	656.1511	680.4156
-25	595.7567	617.4744	639.9198
-24	561.2203	581.3282	602.0964
-23	528.9089	547.5311	566.7523
-22	498.6658	515.9163	533.7100
-21	470.3458	486.3293	502.8056
-20	443.8150	458.6278	473.8876
-19	418.9494	432.6802	446.8164

-18	395.6345	408.3649	421.4629
-17	373.7641	385.5693	397.7076
-16	353.2402	364.1894	375.4403
-15	333.9720	344.1288	354.5591
-14	315.8748	325.2982	334.9692
-13	298.8708	307.6149	316.5832
-12	282.8875	291.0024	299.3201
-11	267.8575	275.3893	283.1046
-10	253.7184	260.7097	267.8670
-9	240.4121	246.9025	253.5427
-8	227.8849	233.9106	240.0716
-7	216.0865	221.6812	227.3979
-6	204.9704	210.1651	215.4699
-5	194.4932	199.3167	204.2394
-4	184.6145	189.0934	193.6616
-3	175.2967	179.4556	183.6949
-2	166.5047	170.3665	174.3004
-1	158.2059	161.7917	165.4421
0	150.3699	153.6991	157.0864
1	142.9682	146.0591	149.2019
2	135.9744	138.8437	141.7594
3	129.3636	132.0270	134.7317
4	123.1129	125.5847	128.0933
5	117.2004	119.4941	121.8205
6	111.6062	113.7342	115.8912
7	106.3113	108.2852	110.2847
8	101.2981	103.1285	104.9816
9	96.5500	98.2470	99.9638
10	92.0515	93.6244	95.2145
11	87.7883	89.2455	90.7178
12	83.7467	85.0963	86.4590
13	79.9140	81.1634	82.4241
14	76.2783	77.4344	78.6002
15	72.8283	73.8976	74.9751
16	69.5538	70.5422	71.5375
17	66.4446	67.3578	68.2766
18	63.4918	64.3348	65.1825
19	60.6865	61.4642	62.2456
20	58.0206	58.7375	59.4573
21	55.4865	56.1468	56.8092
22	53.0770	53.6845	54.2935

23	50.7852	51.3436	51.9029
24	48.6049	49.1175	49.6305
25	46.5300	47.0000	47.4700
26	44.5159	44.9852	45.4550
27	42.5997	43.0677	43.5364
28	40.7764	41.2421	41.7090
29	39.0408	39.5037	39.9682
30	37.3883	37.8479	38.3092
31	35.8146	36.2702	36.7280
32	34.3154	34.7667	35.2204
33	32.8869	33.3334	33.7826
34	31.5253	31.9668	32.4111
35	30.2273	30.6633	31.1025
36	28.9895	29.4198	29.8536
37	27.8088	28.2332	28.6613
38	26.6823	27.1007	27.5228
39	25.6073	26.0194	26.4354
40	24.5812	24.9868	25.3967
41	23.6014	24.0006	24.4040
42	22.6657	23.0583	23.4553
43	21.7719	22.1578	22.5483
44	20.9179	21.2971	21.6810
45	20.1017	20.4742	20.8515
46	19.3215	19.6872	20.0579
47	18.5755	18.9345	19.2985
48	17.8621	18.2144	18.5717
49	17.1796	17.5252	17.8759
50	16.5266	16.8656	17.2097
51	15.9017	16.2340	16.5716
52	15.3036	15.6293	15.9603
53	14.7309	15.0501	15.3747
54	14.1824	14.4952	14.8134
55	13.6571	13.9635	14.2753
56	13.1538	13.4539	13.7595
57	12.6715	12.9654	13.2648
58	12.2093	12.4971	12.7903
59	11.7661	12.0479	12.3351
60	11.3412	11.6170	11.8983
61	10.9337	11.2037	11.4791
62	10.5428	10.8070	11.0767
63	10.1678	10.4263	10.6903

64	9.8079	10.0608	10.3193
65	9.4624	9.7099	9.9629
66	9.1308	9.3729	9.6205
67	8.8124	9.0492	9.2916
68	8.5065	8.7383	8.9754
69	8.2128	8.4394	8.6715
70	7.9305	8.1522	8.3793
71	7.6593	7.8761	8.0983
72	7.3987	7.6107	7.8280
73	7.1481	7.3555	7.5681
74	6.9072	7.1100	7.3180
75	6.6755	6.8738	7.0773
76	6.4527	6.6466	6.8456
77	6.2383	6.4279	6.6227
78	6.0320	6.2175	6.4079
79	5.8335	6.0149	6.2012
80	5.6425	5.8198	6.0021
81	5.4586	5.6319	5.8102
82	5.2815	5.4510	5.6254
83	5.1109	5.2767	5.4473
84	4.9467	5.1088	5.2756
85	4.7884	4.9469	5.1102
86	4.6360	4.7909	4.9506
87	4.4890	4.6406	4.7968
88	4.3474	4.4956	4.6484
89	4.2109	4.3558	4.5053
90	4.0793	4.2210	4.3672
91	3.9524	4.0910	4.2340
92	3.8300	3.9655	4.1054
93	3.7119	3.8445	3.9814
94	3.5980	3.7276	3.8616
95	3.4881	3.6149	3.7459
96	3.3820	3.5060	3.6342
97	3.2797	3.4009	3.5263
98	3.1808	3.2994	3.4221
99	3.0854	3.2014	3.3215
100	2.9933	3.1067	3.2242
101	2.9043	3.0153	3.1302
102	2.8183	2.9269	3.0394
103	2.7352	2.8415	2.9516
104	2.6550	2.7589	2.8667

105	2.5775	2.6791	2.7846
106	2.5025	2.6020	2.7052
107	2.4301	2.5274	2.6284
108	2.3600	2.4553	2.5541
109	2.2923	2.3855	2.4823
110	2.2268	2.3180	2.4127
111	2.1635	2.2527	2.3454
112	2.1022	2.1895	2.2803
113	2.0429	2.1284	2.2172
114	1.9855	2.0692	2.1562
115	1.9300	2.0119	2.0971
116	1.8763	1.9565	2.0399
117	1.8243	1.9028	1.9844
118	1.7739	1.8508	1.9307
119	1.7252	1.8004	1.8787
120	1.6780	1.7516	1.8283