



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-5KR-B3950-1% \_\_\_\_\_

供应商料号  
Part Number \_\_\_\_\_

日期  
Date \_\_\_\_\_ 2024-08-13 \_\_\_\_\_

<p>客户承认 Customer Acknowledgement</p>	<p>供应商承认 Supplier Acknowledgement</p> 
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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-5KR-B3950-1%**

## 3) RATING

3-1) Rated zero-power resistance  $R_{25} : 5k\Omega \pm 1\%$  (at 25°C)

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

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

3-3) Dissipation factor.  $\geq 2 \text{ mW/}^\circ\text{C}$  (in air)

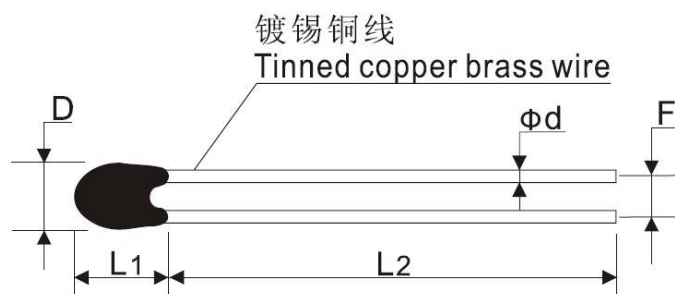
3-4) Thermal time constant.  $\leq 12 \text{ s}$  (in air)

3-5) Maximum power rating.  $\leq 50 \text{ mW}$  (at 25°C)

3-6) Category temperature range :  $-40 \sim 120 \text{ }^\circ\text{C}$

(=Operating temperature range)

## 4) DIMENSIONS UNIT: [mm]



Dmax	Lmax	L2min	$\Phi d \pm 0.05$	$F \pm 0.05$
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 °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  $260^{\circ}\text{C} \pm 10\%$  for  $4 \pm 0.5$  seconds, the change ratio of the rated zero-power resistance shall be within  $\pm 1\%$  of the initial value.

## 7) R-T characteristics

**Resistance**                      **5k Ohms at 25deg. C**  
**B Value**                              **3950K at 25/50 deg. C**

Temp. (deg. C)	R (kOhms)	Temp. (deg. C)	R (kOhms)	Temp. (deg. C)	R (kOhms)	Temp. (deg. C)	R (kOhms)
-30	94.6297	18	6.8623	66	1.0046	114	0.2339
-29	88.7301	19	6.5531	67	0.9705	115	0.2278
-28	83.2387	20	6.2597	68	0.9378	116	0.2219
-27	78.1247	21	5.9812	69	0.9063	117	0.2161
-26	73.3596	22	5.7168	70	0.8761	118	0.2106
-25	68.9175	23	5.4655	71	0.8470	119	0.2052
-24	64.7744	24	5.2269	72	0.8191	120	0.2000
-23	60.9083	25	5.0000	73	0.7922	121	0.1949
-22	57.2989	26	4.7843	74	0.7664	122	0.1900
-21	53.9276	27	4.5792	75	0.7415	123	0.1852
-20	50.7771	28	4.3841	76	0.7176	124	0.1806
-19	47.8316	29	4.1984	77	0.6946	125	0.1761
-18	45.0766	30	4.0217	78	0.6724	126	0.1718
-17	42.4984	31	3.8535	79	0.6511	127	0.1676
-16	40.0847	32	3.6932	80	0.6306	128	0.1635
-15	37.8240	33	3.5406	81	0.6108	129	0.1595
-14	35.7056	34	3.3951	82	0.5917	130	0.1556
-13	33.7196	35	3.2564	83	0.5734	131	0.1519
-12	31.8570	36	3.1243	84	0.5557	132	0.1483
-11	30.1094	37	2.9982	85	0.5386	133	0.1447
-10	28.4690	38	2.8779	86	0.5221	134	0.1413
-9	26.9286	39	2.7632	87	0.5063	135	0.1380
-8	25.4814	40	2.6537	88	0.4910	136	0.1347
-7	24.1213	41	2.5491	89	0.4763	137	0.1316
-6	22.8424	42	2.4493	90	0.4620	138	0.1286
-5	21.6396	43	2.3539	91	0.4483	139	0.1256
-4	20.5077	44	2.2628	92	0.4350	140	0.1227
-3	19.4422	45	2.1757	93	0.4223	141	0.1199
-2	18.4388	46	2.0925	94	0.4099	142	0.1172
-1	17.4935	47	2.0129	95	0.3980	143	0.1145
0	16.6026	48	1.9368	96	0.3865	144	0.1120
1	15.7627	49	1.8640	97	0.3754	145	0.1095
2	14.9705	50	1.7943	98	0.3646	146	0.1070
3	14.2230	51	1.7277	99	0.3542	147	0.1047
4	13.5176	52	1.6638	100	0.3442	148	0.1024
5	12.8515	53	1.6027	101	0.3345	149	0.1001
6	12.2223	54	1.5442	102	0.3251	150	0.0979
7	11.6278	55	1.4881	103	0.3161		

8	11.0659	56	1.4344	104	0.3073		
9	10.5346	57	1.3829	105	0.2989		
10	10.0321	58	1.3336	106	0.2907		
11	9.5565	59	1.2862	107	0.2827		
12	9.1065	60	1.2409	108	0.2751		
13	8.6803	61	1.1973	109	0.2676		
14	8.2767	62	1.1555	110	0.2604		
15	7.8943	63	1.1155	111	0.2535		
16	7.5318	64	1.0770	112	0.2468		
17	7.1882	65	1.0400	113	0.2402		