

规格承认书

SPECIFICATION FOR APPROVAL

客户(Customer):

品名(Product Name): NTC热敏传感器 NTC thermal sensor

维宏料号(Part Number): WH103F3950-25

发布日期(Issue Date): 2024.7.17

发布版本(Rev. No.): V1.1

文件编号(Doc. No.): WH-0-01

客户承认Customer Approved

判定结果 Result		
检验 Inspector	审核 Checked	核准 Approved

维宏感应（山东）科技有限公司

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THERMISTOR SPECIFICATIONS

1) Scope

This specifications define ratings, dimension, insulation, climatic test and mechanical characteristics for TJ type thermistor.

2) Part No. : WH103F3950

3) Rating

3-1) Rated zero-power resistance R_{25} : $10\text{ k}\Omega \pm 1\%$ (at 25°C)

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

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

3-3) Dissipation factor. : Approx. $0.7\text{ mW}/^{\circ}\text{C}$ (in air)

3-4) Thermal time constant. : Approx. 5.0 s (in air)

3-5) Maximum power rating. : 3.5 mW (at 25°C)

3-6) Category temperature range : $-30 \sim 120^{\circ}\text{C}$
(=Operating temperature range)

4) Insulation resistance

Insulation resistance shall be more than $100\text{ M}\Omega$ which is measured at DC 100V between film area and terminals.

5) Climatic test

5-1) Dry Heat

After the test samples were exposed in air at $90 \pm 1^{\circ}\text{C}$ 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 $40 \pm 2^{\circ}\text{C}$ 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 $-30 \pm 1^{\circ}\text{C}$ for 1,000 hours, the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ of the initial value.

5-4) Loading

After DC 1mA current was applied to the test samples in the temperature of $40 \pm 2^{\circ}\text{C}$ 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 $-25 \pm 3^{\circ}\text{C}$, for 30 minutes.

.Room ambient temperature, for 3 minutes.

.At $+90 \pm 2^{\circ}\text{C}$, for 30 minutes.

.Room ambient temperature, for 3 minutes.

After the 100 cycles of this process, the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ of the initial value.

6) Mechanical characteristics

6-1) Resistance to soldering heat

The terminals shall be dipped in to a soldering bath having a temperature of $260 \pm 5^{\circ}\text{C}$ to a point 2.0 mm from the body and then be held there for $5 \pm 1\text{s}$, the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ of the initial value.

6-2) Solderability

After dipping the terminal to a depth in a soldering bath of $235 \pm 5^{\circ}\text{C}$ for $2 \pm 0.5\text{s}$. Approximately 90% of terminals should be covered with solder uniformly.

6-3) Free fall

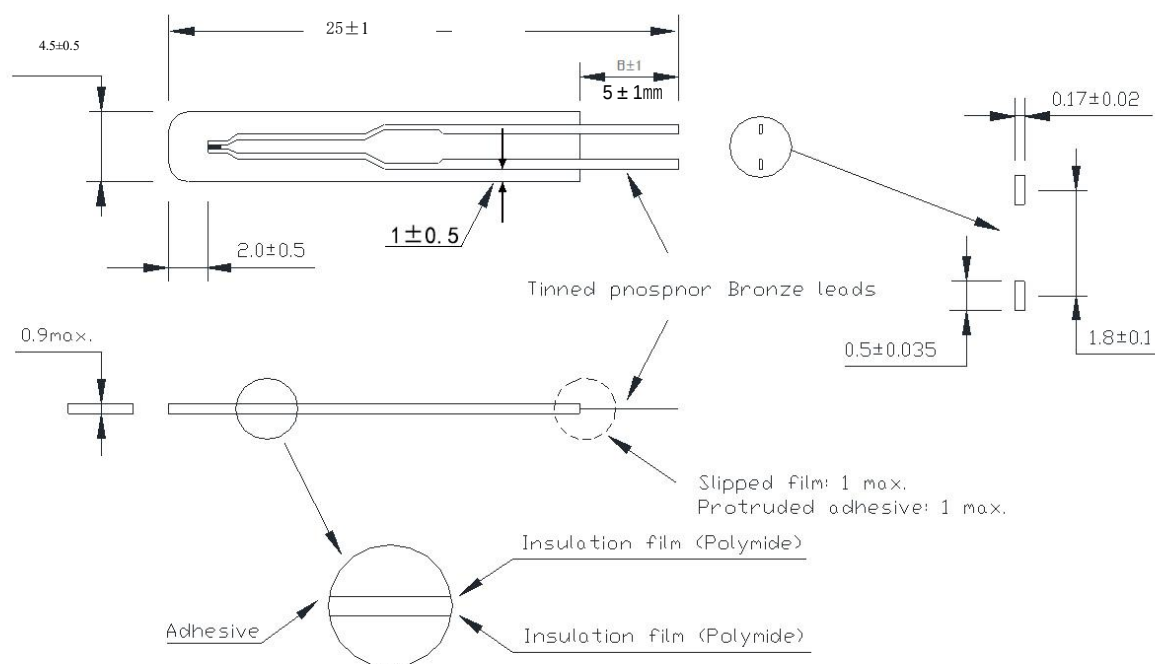
After three times fall to a maple board from 0.75 m high, there shall be no visible damage and the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ of the initial value.

6-4) Robustness of terminations

After 1N loading weight for $10 \pm 1\text{s}$ was applied to the wire terminations, there shall be no visible damage and the change ratio of the rated zero-power resistance shall be within $\pm 1\%$ of the initial value.



7) Dimensions [mm]



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8) R-T Table

$R_{25}=10k\ \Omega \pm 1\%$

$B_{25/50}=3950K \pm 1\%$

TEMP	RESISTANCE		
(°C)	MIN.	CENTER.	MAX.
-30	153.754	159.781	165.808
-29	143.919	149.456	154.994
-28	134.882	139.977	145.072
-27	126.593	131.287	135.981
-26	118.991	123.324	127.656
-25	112.015	116.02	120.024
-24	105.602	109.31	113.018
-23	99.695	103.133	106.572
-22	94.24	97.433	100.626
-21	89.189	92.157	95.126
-20	84.498	87.261	90.024
-19	80.129	82.703	85.278
-18	76.048	78.449	80.85
-17	72.226	74.466	76.706
-16	68.638	70.729	72.82
-15	65.261	67.214	69.167
-14	62.076	63.9	65.725
-13	59.067	60.771	62.476
-12	56.219	57.811	59.404
-11	53.52	55.008	56.496
-10	50.959	52.35	53.74
-9	48.528	49.826	51.125
-8	46.217	47.43	48.643
-7	44.02	45.153	46.285
-6	41.931	42.988	44.045
-5	39.943	40.929	41.915
-4	38.051	38.971	39.891
-3	36.25	37.108	37.966
-2	34.537	35.337	36.136
-1	32.907	33.652	34.397
0	31.356	32.049	32.743
1	29.88	30.526	31.172



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2	28.476	29.078	29.679
3	27.142	27.701	28.26
4	25.872	26.392	26.913
5	24.666	25.149	25.633
6	23.519	23.968	24.417
7	22.429	22.846	23.263
8	21.393	21.78	22.167
9	20.408	20.768	21.127
10	19.521	19.856	20.19
11	18.584	18.893	19.202
12	17.739	18.026	18.312
13	16.937	17.202	17.467
14	16.174	16.42	16.665
15	15.449	15.677	15.904
16	14.761	14.971	15.181
17	14.106	14.3	14.494
18	13.484	13.663	13.842
19	12.892	13.057	13.223
20	12.329	12.482	12.634
21	11.794	11.934	12.075
22	11.285	11.414	11.543
23	10.8	10.919	11.038
24	10.339	10.448	10.557
25	9.9	10	10.1
26	9.473	9.573	9.673
27	9.067	9.167	9.266
28	8.68	8.78	8.879
29	8.312	8.411	8.51
30	7.962	8.06	8.158
31	7.628	7.725	7.822
32	7.309	7.406	7.502
33	7.006	7.101	7.196
34	6.716	6.811	6.905
35	6.44	6.533	6.627
36	6.177	6.269	6.361
37	5.926	6.016	6.107
38	5.686	5.775	5.865
39	5.457	5.545	5.633

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40	5.238	5.325	5.411
41	5.029	5.114	5.2
42	4.829	4.913	4.997
43	4.638	4.721	4.804
44	4.456	4.537	4.618
45	4.281	4.361	4.441
46	4.115	4.193	4.271
47	3.955	4.032	4.109
48	3.803	3.878	3.954
49	3.657	3.731	3.805
50	3.517	3.59	3.662
51	3.383	3.454	3.526
52	3.255	3.325	3.395
53	3.132	3.201	3.269
54	3.015	3.082	3.149
55	2.903	2.968	3.034
56	2.795	2.859	2.924
57	2.692	2.755	2.818
58	2.593	2.655	2.717
59	2.498	2.559	2.619
60	2.407	2.467	2.526
61	2.32	2.378	2.436
62	2.237	2.294	2.35
63	2.157	2.212	2.268
64	2.08	2.134	2.189
65	2.007	2.06	2.113
66	1.936	1.988	2.04
67	1.868	1.919	1.97
68	1.803	1.853	1.903
69	1.741	1.789	1.838
70	1.681	1.728	1.776
71	1.623	1.67	1.716
72	1.568	1.613	1.659
73	1.515	1.559	1.604
74	1.464	1.507	1.551
75	1.415	1.457	1.5
76	1.368	1.409	1.451
77	1.322	1.363	1.404

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78	1.279	1.319	1.359
79	1.237	1.276	1.315
80	1.197	1.235	1.273
81	1.158	1.195	1.233
82	1.121	1.157	1.194
83	1.085	1.121	1.157
84	1.051	1.085	1.12
85	1.017	1.052	1.086
86	0.985	1.019	1.052
87	0.954	0.987	1.02
88	0.925	0.957	0.989
89	0.896	0.927	0.959
90	0.869	0.899	0.93
91	0.842	0.872	0.902
92	0.816	0.846	0.875
93	0.792	0.82	0.849
94	0.768	0.796	0.824
95	0.745	0.772	0.8
96	0.722	0.749	0.776
97	0.701	0.727	0.754
98	0.68	0.706	0.732
99	0.66	0.685	0.711
100	0.641	0.666	0.69
101	0.622	0.646	0.67
102	0.604	0.628	0.651
103	0.586	0.61	0.633
104	0.57	0.592	0.615
105	0.553	0.575	0.598
106	0.537	0.559	0.581
107	0.522	0.543	0.565
108	0.507	0.528	0.549
109	0.493	0.513	0.534
110	0.479	0.499	0.519
111	0.465	0.485	0.504
112	0.452	0.471	0.491
113	0.44	0.458	0.477
114	0.427	0.446	0.464
115	0.415	0.433	0.451
116	0.404	0.421	0.439
117	0.393	0.41	0.427



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118	0.382	0.399	0.415
119	0.371	0.388	0.404
120	0.361	0.377	0.393