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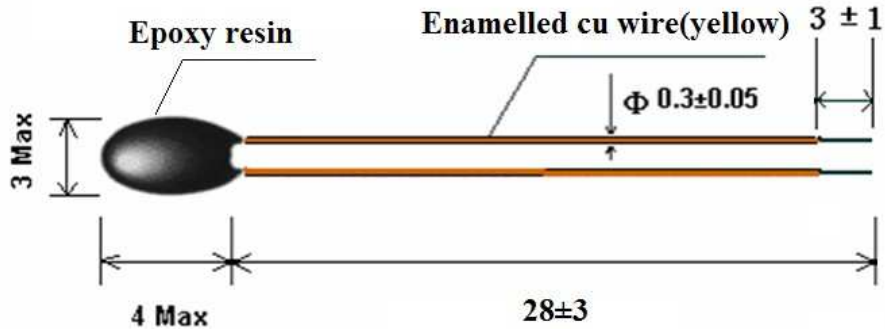
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Specifications for NTC Thermistor

Part No.	NTCM-1K-B3950
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1、Dimensions(mm)



2、Materials

Coating		Lead wire	
Material	Color	Material	Color
Epoxy Resin	Black	Enamelled Cu wire	Yellow

3、Ordering information

MF52	B2	102	F	3950
Pearl-Shape Temp Measurement NTC Thermistor	Enamelled cu wire	Resistance	Tolerance	B-value (25/50)
		$10 \times 10^2 = 1K\Omega$	$\pm 1\%$	3950K

4、Electrical characteristics

	Item	Symbol	Test conditions	Unit	Specification
4.1	Zero Power Resistance at 25°C	R_{25}	$T_a = 25 \pm 0.05^\circ\text{C}$ Test Power $\leq 0.1\text{mW}$ Test in fluid liquid	$K\Omega$	$1 \pm 1\%$
4.2	B-value	$B_{25/50}$	$B = [(T_a \times T_b) / (T_b - T_a)] \times \ln(R_a / R_b)$ $T_b = 50^\circ\text{C} \pm 0.1^\circ\text{C}$	K	$3950 \pm 1\%$
4.3	Thermal dissipation Coefficient	δ	In still air	$\text{mW}/^\circ\text{C}$	≥ 2

4.4	Thermal time constant	τ	In still air	sec	≤ 7
4.5	Insulation resistance	/	100V/DC 1min	M Ω	≥ 100
4.6	Operating temperature	/	/	$^{\circ}\text{C}$	-55 ~ 125
4.7	R&T-table	/	/	/	See attached table
4.8	Resistance tolerance	/	/	/	See attached curve

5、Reliability

	Item	Test conditions and methods	Technical requirements
5.1	Solderability	The lead wire shall be dipped into solder bath of $235\pm 5^{\circ}\text{C}$ for 2~3sec with 6mm space from the body.	Solder dipped on lead wire should be uniform and smooth; the coverage area should be more than 95%.
5.2	Withstand Soldering heat	The lead wire shall be dipped into solder bath of $265\pm 5^{\circ}\text{C}$ for 5 ± 1 sec with 6mm space from the body.	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.3	Terminal strength	Pull strength : 5N , time : 10sec	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.4	Temperature cycle	-55°C 30min \rightarrow 25°C 5min \rightarrow 125°C 30min \rightarrow 25°C 5min , 5cycles ,recover 4hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.5	High temperature	Temperature : 125°C ,time : 16hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.6	Low temperature	Temperature : -55°C ,Time : 2hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.7	Low atmospheric pressure	Atmospheric pressure : $40\pm 0.1\text{Kpa}$, time :4hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.8	Steady humidity and heat	Temp : 40°C ,humidity : 93% , Time : 500 ± 12 hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$, Withstanding voltage $\geq 700\text{V/AC}$ 1min Insulating resistance $\geq 100\text{M}\Omega$
5.9	Damp heat	Temp : $25\sim 40^{\circ}\text{C}$,humidity : 90% , Time : 24hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$, Withstanding voltage $\geq 700\text{V/AC}$ 1min Insulating resistance $\geq 100\text{M}\Omega$
5.1 0	Zero power endurance at upper category temperature	Temp : $125^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Time : 1000 ± 24 hrs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.1 1	Vibrate	Frequency : $10\sim 500\text{HZ}$,swing : 0.75m or 98m/S^2 , time :2hurs	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$
5.1 2	Bump	Acceleration : 250m/S^2 ,pulse duration : 6mS , Bump times : 4000times	No obvious damage, $R_{25} \Delta R/R \leq \pm 2\%$

6、Soldering conditions

When soldering, space between iron tip and thermistor body must be more than 6mm, temperature should be less than 350°C, soldering time should be as short as possible.

7、Storage conditions

- 7.1 Storage temp : -10°C ~ 40°C ;
- 7.2 Storage humidity : ≤75% RH ;
- 7.3 Avoid air corrosion or sunlight
- 7.4 Remake sealed storage after package opening.

8. Certificate

8.1 Quality Control System Certification ISO9001 : 2000 (01110Q20002R3M)

8.2 Environment Management System Certification ISO14001 : 2004 (01110E20031R1M)

8.3 Environment Test Report RoHS (RLSHD000645310001C)

8.4  CQC Certification (CQC07001019009)

R&T Table

R25=1K Ω TOLERANCE: ±1% B25/50=3950K TOLERANCE: ±1% (P199-1)							
TEMP (°C)	RESISTANCE (K Ω)			RESISST-TOL (%)		TEMP-TOL (°C)	
	MIN	CENTER	MAX	△R	-△R	△T	-△T
-55	105.165	111.353	117.894	5.873	-5.557	0.729	-0.690
-54	96.841	102.454	108.381	5.785	-5.478	0.725	-0.687
-53	89.275	94.372	99.750	5.698	-5.400	0.721	-0.684
-52	82.388	87.022	91.906	5.613	-5.324	0.717	-0.680
-51	76.112	80.328	84.769	5.528	-5.248	0.713	-0.677
-50	70.385	74.225	78.267	5.445	-5.173	0.709	-0.674
-49	65.152	68.653	72.335	5.362	-5.099	0.705	-0.670
-48	60.364	63.559	66.916	5.281	-5.026	0.701	-0.667
-47	55.980	58.897	61.961	5.201	-4.953	0.696	-0.663
-46	51.959	54.626	57.425	5.122	-4.882	0.692	-0.660
-45	48.269	50.709	53.266	5.044	-4.811	0.688	-0.656
-44	44.877	47.111	49.451	4.966	-4.741	0.683	-0.652
-43	41.758	43.804	45.947	4.890	-4.672	0.679	-0.648
-42	38.885	40.762	42.724	4.815	-4.603	0.674	-0.644

-41	36.238	37.959	39.759	4.740	-4.535	0.669	-0.640
-40	33.795	35.376	37.027	4.666	-4.468	0.665	-0.636
-39	31.540	32.992	34.507	4.593	-4.401	0.660	-0.632
-38	29.455	30.790	32.182	4.521	-4.335	0.655	-0.628
-37	27.527	28.755	30.034	4.450	-4.270	0.650	-0.624
-36	25.742	26.872	28.048	4.379	-4.205	0.645	-0.619
-35	24.088	25.128	26.211	4.309	-4.140	0.640	-0.615
-34	22.554	23.512	24.509	4.240	-4.077	0.635	-0.611
-33	21.131	22.014	22.932	4.171	-4.013	0.630	-0.606
-32	19.809	20.624	21.470	4.103	-3.951	0.625	-0.601
-31	18.580	19.332	20.112	4.036	-3.889	0.619	-0.597
-30	17.438	18.132	18.852	3.969	-3.827	0.614	-0.592
-29	16.375	17.015	17.680	3.903	-3.766	0.609	-0.587
-28	15.384	15.976	16.590	3.837	-3.705	0.603	-0.582
-27	14.462	15.009	15.575	3.773	-3.645	0.598	-0.577
-26	13.601	14.107	14.630	3.708	-3.585	0.592	-0.572
-25	12.798	13.266	13.750	3.645	-3.526	0.586	-0.567
-24	12.049	12.482	12.929	3.581	-3.467	0.581	-0.562
-23	11.348	11.749	12.163	3.519	-3.409	0.575	-0.557
-22	10.694	11.065	11.447	3.457	-3.351	0.569	-0.551
-21	10.082	10.425	10.779	3.395	-3.293	0.563	-0.546
-20	9.509	9.827	10.155	3.334	-3.236	0.557	-0.541
-19	8.973	9.267	9.571	3.274	-3.179	0.551	-0.535
-18	8.470	8.743	9.024	3.213	-3.123	0.545	-0.530
-17	7.999	8.253	8.513	3.154	-3.067	0.539	-0.524
-16	7.558	7.793	8.034	3.095	-3.011	0.533	-0.518
-15	7.144	7.361	7.585	3.036	-2.956	0.526	-0.512
-14	6.755	6.957	7.164	2.978	-2.901	0.520	-0.507
-13	6.390	6.577	6.769	2.920	-2.847	0.514	-0.501
-12	6.047	6.221	6.399	2.863	-2.793	0.507	-0.495
-11	5.724	5.886	6.051	2.806	-2.739	0.501	-0.489
-10	5.421	5.571	5.724	2.749	-2.685	0.494	-0.483
-9	5.136	5.275	5.417	2.693	-2.632	0.487	-0.476
-8	4.868	4.997	5.128	2.638	-2.580	0.481	-0.470
-7	4.615	4.735	4.857	2.582	-2.527	0.474	-0.464
-6	4.377	4.488	4.601	2.527	-2.475	0.467	-0.457
-5	4.153	4.256	4.361	2.473	-2.423	0.460	-0.451
-4	3.941	4.037	4.135	2.419	-2.372	0.453	-0.444
-3	3.742	3.831	3.921	2.365	-2.320	0.446	-0.438
-2	3.554	3.636	3.720	2.312	-2.269	0.439	-0.431
-1	3.376	3.453	3.531	2.259	-2.219	0.432	-0.425
0	3.208	3.280	3.352	2.206	-2.169	0.425	-0.418
1	3.050	3.116	3.183	2.154	-2.118	0.418	-0.411
2	2.900	2.962	3.024	2.102	-2.069	0.411	-0.404

3	2.759	2.816	2.874	2.051	-2.019	0.403	-0.397
4	2.625	2.678	2.732	2.000	-1.970	0.396	-0.390
5	2.499	2.548	2.598	1.949	-1.921	0.388	-0.383
6	2.379	2.425	2.471	1.898	-1.873	0.381	-0.376
7	2.266	2.308	2.351	1.848	-1.824	0.373	-0.368
8	2.159	2.198	2.238	1.798	-1.776	0.366	-0.361
9	2.058	2.094	2.131	1.749	-1.729	0.358	-0.354
10	1.965	1.998	2.032	1.701	-1.683	0.350	-0.346
11	1.870	1.902	1.933	1.651	-1.634	0.342	-0.339
12	1.784	1.813	1.842	1.602	-1.587	0.334	-0.331
13	1.702	1.729	1.756	1.554	-1.540	0.326	-0.323
14	1.625	1.649	1.674	1.506	-1.494	0.318	-0.316
15	1.551	1.574	1.597	1.459	-1.448	0.310	-0.308
16	1.481	1.502	1.523	1.412	-1.402	0.302	-0.300
17	1.415	1.434	1.454	1.365	-1.356	0.294	-0.292
18	1.351	1.369	1.387	1.318	-1.311	0.286	-0.284
19	1.292	1.308	1.325	1.272	-1.265	0.278	-0.276
20	1.235	1.250	1.265	1.225	-1.221	0.269	-0.268
21	1.181	1.195	1.209	1.180	-1.176	0.261	-0.260
22	1.129	1.142	1.155	1.134	-1.131	0.252	-0.252
23	1.080	1.092	1.104	1.089	-1.087	0.244	-0.243
24	1.034	1.045	1.056	1.044	-1.043	0.235	-0.235
25	0.990	1.000	1.010	1.000	-1.000	0.227	-0.227
26	0.947	0.957	0.967	1.044	-1.043	0.238	-0.238
27	0.906	0.916	0.926	1.088	-1.086	0.250	-0.249
28	0.867	0.877	0.887	1.132	-1.129	0.261	-0.261
29	0.830	0.840	0.850	1.176	-1.172	0.273	-0.272
30	0.795	0.804	0.814	1.219	-1.214	0.285	-0.284
31	0.761	0.771	0.781	1.262	-1.256	0.297	-0.296
32	0.729	0.739	0.748	1.305	-1.298	0.309	-0.307
33	0.699	0.708	0.718	1.348	-1.340	0.321	-0.319
34	0.670	0.679	0.689	1.390	-1.381	0.333	-0.331
35	0.642	0.651	0.661	1.433	-1.422	0.346	-0.343
36	0.616	0.625	0.634	1.475	-1.463	0.358	-0.355
37	0.591	0.600	0.609	1.516	-1.504	0.370	-0.367
38	0.567	0.576	0.585	1.558	-1.544	0.383	-0.379
39	0.544	0.553	0.562	1.599	-1.584	0.396	-0.392
40	0.522	0.531	0.539	1.640	-1.624	0.408	-0.404
41	0.501	0.510	0.518	1.681	-1.663	0.421	-0.416
42	0.481	0.490	0.498	1.722	-1.703	0.434	-0.429
43	0.462	0.471	0.479	1.763	-1.742	0.447	-0.441
44	0.444	0.452	0.461	1.803	-1.781	0.460	-0.454
45	0.427	0.435	0.443	1.843	-1.819	0.473	-0.467
46	0.410	0.418	0.426	1.883	-1.858	0.486	-0.479

47	0.395	0.402	0.410	1.922	-1.896	0.499	-0.492
48	0.379	0.387	0.395	1.962	-1.934	0.512	-0.505
49	0.365	0.372	0.380	2.001	-1.971	0.526	-0.518
50	0.352	0.359	0.366	2.039	-2.008	0.539	-0.531
51	0.338	0.345	0.352	2.079	-2.046	0.553	-0.544
52	0.325	0.332	0.339	2.117	-2.083	0.566	-0.557
53	0.313	0.320	0.327	2.155	-2.120	0.580	-0.570
54	0.302	0.308	0.315	2.194	-2.156	0.594	-0.583
55	0.290	0.297	0.304	2.232	-2.193	0.607	-0.597
56	0.280	0.286	0.293	2.269	-2.229	0.621	-0.610
57	0.270	0.276	0.282	2.307	-2.265	0.635	-0.624
58	0.260	0.266	0.272	2.344	-2.300	0.649	-0.637
59	0.250	0.256	0.263	2.381	-2.336	0.663	-0.651
60	0.241	0.247	0.253	2.418	-2.371	0.678	-0.664
61	0.233	0.239	0.244	2.455	-2.406	0.692	-0.678
62	0.225	0.230	0.236	2.491	-2.441	0.706	-0.692
63	0.217	0.222	0.228	2.528	-2.475	0.721	-0.706
64	0.209	0.215	0.220	2.564	-2.510	0.735	-0.720
65	0.202	0.207	0.212	2.600	-2.544	0.750	-0.734
66	0.195	0.200	0.205	2.636	-2.578	0.765	-0.748
67	0.188	0.193	0.198	2.671	-2.611	0.779	-0.762
68	0.182	0.187	0.192	2.707	-2.645	0.794	-0.776
69	0.175	0.180	0.185	2.742	-2.678	0.809	-0.790
70	0.170	0.174	0.179	2.777	-2.711	0.824	-0.805
71	0.164	0.168	0.173	2.811	-2.744	0.839	-0.819
72	0.158	0.163	0.168	2.846	-2.777	0.854	-0.834
73	0.153	0.157	0.162	2.880	-2.810	0.870	-0.848
74	0.148	0.152	0.157	2.915	-2.842	0.885	-0.863
75	0.143	0.147	0.152	2.949	-2.874	0.900	-0.877
76	0.138	0.143	0.147	2.983	-2.906	0.916	-0.892
77	0.134	0.138	0.142	3.016	-2.938	0.931	-0.907
78	0.130	0.134	0.138	3.050	-2.969	0.947	-0.922
79	0.125	0.129	0.133	3.083	-3.000	0.963	-0.937
80	0.121	0.125	0.129	3.116	-3.032	0.978	-0.952
81	0.118	0.121	0.125	3.149	-3.063	0.994	-0.967
82	0.114	0.117	0.121	3.182	-3.093	1.010	-0.982
83	0.110	0.114	0.117	3.214	-3.124	1.026	-0.997
84	0.107	0.110	0.114	3.247	-3.154	1.042	-1.013
85	0.103	0.107	0.110	3.279	-3.185	1.059	-1.028
86	0.100	0.104	0.107	3.311	-3.215	1.075	-1.044
87	0.097	0.100	0.104	3.343	-3.244	1.091	-1.059
88	0.094	0.097	0.101	3.375	-3.274	1.108	-1.075
89	0.091	0.094	0.098	3.406	-3.304	1.124	-1.090
90	0.089	0.092	0.095	3.437	-3.333	1.141	-1.106

91	0.086	0.089	0.092	3.469	-3.362	1.157	-1.122
92	0.083	0.086	0.089	3.500	-3.391	1.174	-1.138
93	0.081	0.084	0.087	3.530	-3.420	1.191	-1.154
94	0.078	0.081	0.084	3.561	-3.448	1.208	-1.170
95	0.076	0.079	0.082	3.591	-3.477	1.225	-1.186
96	0.074	0.077	0.079	3.622	-3.505	1.242	-1.202
97	0.072	0.074	0.077	3.652	-3.533	1.259	-1.218
98	0.070	0.072	0.075	3.682	-3.561	1.276	-1.234
99	0.068	0.070	0.073	3.712	-3.588	1.293	-1.250
100	0.066	0.068	0.071	3.741	-3.616	1.311	-1.267
101	0.064	0.066	0.069	3.771	-3.643	1.328	-1.283
102	0.062	0.064	0.067	3.800	-3.671	1.346	-1.300
103	0.060	0.063	0.065	3.829	-3.698	1.363	-1.317
104	0.059	0.061	0.063	3.858	-3.725	1.381	-1.333
105	0.057	0.059	0.061	3.887	-3.751	1.399	-1.350
106	0.055	0.058	0.060	3.916	-3.778	1.417	-1.367
107	0.054	0.056	0.058	3.944	-3.804	1.435	-1.384
108	0.052	0.054	0.057	3.973	-3.830	1.453	-1.401
109	0.051	0.053	0.055	4.001	-3.856	1.471	-1.418
110	0.050	0.052	0.054	4.029	-3.882	1.489	-1.435
111	0.048	0.050	0.052	4.057	-3.908	1.507	-1.452
112	0.047	0.049	0.051	4.084	-3.934	1.525	-1.469
113	0.046	0.048	0.050	4.112	-3.959	1.544	-1.486
114	0.044	0.046	0.048	4.139	-3.984	1.562	-1.504
115	0.043	0.045	0.047	4.167	-4.009	1.581	-1.521
116	0.042	0.044	0.046	4.194	-4.034	1.599	-1.539
117	0.041	0.043	0.045	4.221	-4.059	1.618	-1.556
118	0.040	0.042	0.044	4.247	-4.084	1.637	-1.574
119	0.039	0.041	0.042	4.274	-4.108	1.656	-1.592
120	0.038	0.040	0.041	4.300	-4.133	1.675	-1.609
121	0.037	0.039	0.040	4.327	-4.157	1.694	-1.627
122	0.036	0.038	0.039	4.353	-4.181	1.713	-1.645
123	0.035	0.037	0.038	4.379	-4.205	1.732	-1.663
124	0.034	0.036	0.037	4.405	-4.229	1.751	-1.681
125	0.033	0.035	0.036	4.431	-4.252	1.771	-1.699

