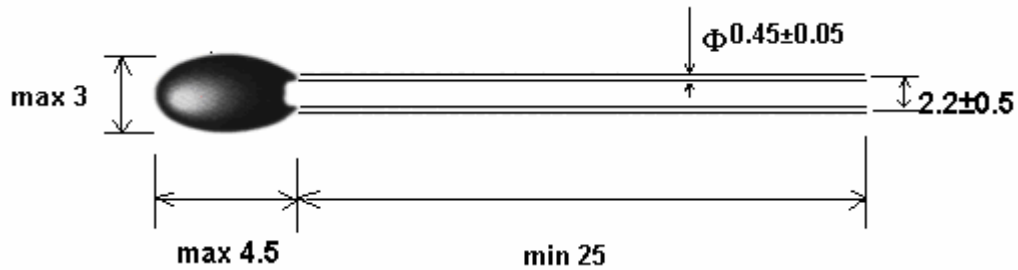


Specifications for NTC Thermistor

1、Dimensions(mm)



2、Materials

Coating		Lead wire
Material	Color	Material
Modified Resin	Black	CP wire

3、Ordering information

MF52	A2	103	F	3380
Pearl-shape temp measurement NTC Thermistor	CP wires	Resistance	Tolerance	B value (25/50)
		$10 \times 10^3 = 10K\Omega$	$\pm 1\%$	3380K

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 Ω	$10 \pm 1\%$
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	$3380 \pm 1\%$
4.3	Thermal dissipation Coefficient	δ	In still air	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	/	/	°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±5°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±5°C for 5±1sec with 6mm space from the body.	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.3	Terminal strength	Pull strength: 5N, time: 10sec	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.4	Temperature cycle	-55°C 30min→25°C 5min→125°C 30min→25°C 5min, 5cycles, recover 4hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.5	High temperature	Temperature: 125°C, time: 16hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.6	Low temperature	Temperature: -55°C, Time: 2hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.7	Low atmospheric pressure	Atmospheric pressure: 40±0.1Kpa, time :4hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.8	Steady humidity and heat	Temp: 40°C, humidity: 93%, Time : 500±12hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$, Withstanding voltage $\geq 700V/AC$ 1min Insulating resistance $\geq 100M\Omega$
5.9	Damp heat	Temp: 25~40°C, humidity: 90%, Time: 24hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$, Withstanding voltage $\geq 700V/AC$ 1min Insulating resistance $\geq 100M\Omega$
5.10	Zero power endurance at upper category temperature	Temp : 125°C±2°C, Time :1000±24hrs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.11	Vibrate	Frequency : 10~500HZ, swing : 0.75m or 98m/S ² , time :2hurs	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$
5.12	Bump	Acceleration: 250m/S ² , pulse duration : 6mS, Bump times: 4000times	No obvious damage, R25 $\Delta R/R \leq \pm 2\%$

-42	215.263	224.306	233.707	4.190	-4.031	0.699	-0.673
-41	203.482	211.910	220.665	4.131	-3.977	0.695	-0.669
-40	192.415	200.272	208.429	4.072	-3.923	0.690	-0.665
-39	182.017	189.343	196.944	4.014	-3.869	0.686	-0.661
-38	172.242	179.075	186.160	3.956	-3.815	0.681	-0.657
-37	163.051	169.425	176.031	3.898	-3.762	0.676	-0.652
-36	154.405	160.353	166.513	3.841	-3.709	0.671	-0.648
-35	146.269	151.820	157.567	3.785	-3.656	0.666	-0.644
-34	138.610	143.793	149.155	3.728	-3.604	0.661	-0.639
-33	131.398	136.238	141.242	3.672	-3.552	0.656	-0.635
-32	124.605	129.125	133.796	3.617	-3.500	0.651	-0.630
-31	118.203	122.426	126.787	3.561	-3.449	0.646	-0.626
-30	112.169	116.115	120.187	3.507	-3.397	0.641	-0.621
-29	106.479	110.166	113.970	3.452	-3.347	0.636	-0.616
-28	101.111	104.558	108.112	3.398	-3.296	0.631	-0.612
-27	96.046	99.269	102.590	3.345	-3.246	0.625	-0.607
-26	91.265	94.279	97.382	3.291	-3.196	0.620	-0.602
-25	86.751	89.570	92.471	3.238	-3.146	0.614	-0.597
-24	82.487	85.123	87.836	3.186	-3.097	0.609	-0.592
-23	78.457	80.925	83.461	3.134	-3.048	0.603	-0.587
-22	74.649	76.958	79.330	3.082	-2.999	0.597	-0.581
-21	71.048	73.209	75.428	3.030	-2.951	0.592	-0.576
-20	67.643	69.665	71.741	2.979	-2.903	0.586	-0.571
-19	64.420	66.314	68.256	2.928	-2.855	0.580	-0.566
-18	61.371	63.144	64.961	2.878	-2.807	0.574	-0.560
-17	58.484	60.144	61.845	2.828	-2.760	0.568	-0.555
-16	55.749	57.304	58.897	2.778	-2.713	0.562	-0.549
-15	53.159	54.615	56.106	2.729	-2.666	0.556	-0.543
-14	50.704	52.069	53.464	2.680	-2.620	0.550	-0.538
-13	48.378	49.656	50.962	2.631	-2.573	0.544	-0.532
-12	46.171	47.369	48.592	2.583	-2.527	0.538	-0.526
-11	44.079	45.201	46.346	2.535	-2.482	0.531	-0.520
-10	42.093	43.144	44.218	2.487	-2.436	0.525	-0.514
-9	40.208	41.194	42.199	2.440	-2.391	0.519	-0.508
-8	38.419	39.343	40.284	2.392	-2.346	0.512	-0.502
-7	36.720	37.586	38.467	2.346	-2.302	0.506	-0.496
-6	35.106	35.917	36.743	2.299	-2.257	0.499	-0.490
-5	33.572	34.333	35.106	2.253	-2.213	0.492	-0.484
-4	32.115	32.827	33.552	2.207	-2.169	0.486	-0.477
-3	30.729	31.396	32.075	2.162	-2.126	0.479	-0.471
-2	29.410	30.036	30.672	2.116	-2.082	0.472	-0.465
-1	28.156	28.743	29.338	2.072	-2.039	0.465	-0.458
0	26.963	27.513	28.070	2.027	-1.996	0.458	-0.451
1	25.827	26.342	26.864	1.983	-1.954	0.451	-0.445
2	24.746	25.228	25.717	1.938	-1.911	0.444	-0.438

3	23.716	24.167	24.626	1.895	-1.869	0.437	-0.431
4	22.734	23.158	23.586	1.851	-1.827	0.430	-0.424
5	21.799	22.196	22.597	1.808	-1.786	0.423	-0.417
6	20.908	21.279	21.655	1.765	-1.744	0.415	-0.411
7	20.058	20.406	20.757	1.722	-1.703	0.408	-0.403
8	19.248	19.573	19.902	1.680	-1.662	0.401	-0.396
9	18.475	18.779	19.087	1.638	-1.621	0.393	-0.389
10	17.731	18.016	18.303	1.596	-1.581	0.386	-0.382
11	17.033	17.299	17.568	1.555	-1.541	0.378	-0.375
12	16.361	16.610	16.861	1.513	-1.501	0.370	-0.367
13	15.719	15.952	16.187	1.472	-1.461	0.363	-0.360
14	15.105	15.323	15.543	1.432	-1.421	0.355	-0.352
15	14.520	14.723	14.928	1.391	-1.382	0.347	-0.345
16	13.960	14.150	14.341	1.351	-1.343	0.339	-0.337
17	13.425	13.602	13.780	1.311	-1.304	0.331	-0.329
18	12.913	13.079	13.245	1.271	-1.265	0.323	-0.322
19	12.424	12.578	12.733	1.231	-1.226	0.315	-0.314
20	11.956	12.099	12.244	1.192	-1.188	0.307	-0.306
21	11.508	11.642	11.776	1.153	-1.150	0.299	-0.298
22	11.079	11.204	11.329	1.114	-1.112	0.291	-0.290
23	10.669	10.785	10.901	1.076	-1.074	0.282	-0.282
24	10.276	10.384	10.491	1.038	-1.037	0.274	-0.274
25	9.900	10.000	10.100	1.000	-1.000	0.266	-0.266
26	9.532	9.632	9.732	1.037	-1.037	0.277	-0.277
27	9.180	9.280	9.379	1.075	-1.073	0.289	-0.289
28	8.843	8.942	9.042	1.112	-1.110	0.301	-0.301
29	8.520	8.619	8.718	1.150	-1.146	0.313	-0.312
30	8.210	8.309	8.407	1.187	-1.183	0.325	-0.324
31	7.914	8.012	8.110	1.224	-1.219	0.338	-0.336
32	7.630	7.727	7.824	1.260	-1.254	0.350	-0.348
33	7.357	7.453	7.550	1.297	-1.290	0.362	-0.360
34	7.096	7.191	7.287	1.333	-1.325	0.375	-0.372
35	6.845	6.940	7.035	1.369	-1.360	0.387	-0.385
36	6.605	6.698	6.793	1.405	-1.395	0.400	-0.397
37	6.374	6.467	6.560	1.441	-1.430	0.412	-0.409
38	6.153	6.244	6.336	1.476	-1.465	0.425	-0.422
39	5.940	6.030	6.122	1.512	-1.499	0.438	-0.434
40	5.736	5.825	5.915	1.547	-1.533	0.451	-0.447
41	5.540	5.628	5.717	1.582	-1.567	0.464	-0.459
42	5.351	5.438	5.526	1.616	-1.601	0.477	-0.472
43	5.170	5.256	5.343	1.651	-1.634	0.490	-0.485
44	4.996	5.081	5.167	1.686	-1.667	0.503	-0.497
45	4.829	4.913	4.997	1.720	-1.701	0.516	-0.510
46	4.669	4.751	4.834	1.754	-1.733	0.529	-0.523
47	4.514	4.595	4.677	1.788	-1.766	0.543	-0.536

48	4.365	4.445	4.526	1.822	-1.799	0.556	-0.549
49	4.222	4.301	4.381	1.855	-1.831	0.570	-0.563
50	4.090	4.168	4.246	1.887	-1.862	0.584	-0.576
51	3.952	4.029	4.106	1.922	-1.895	0.597	-0.589
52	3.825	3.900	3.976	1.955	-1.927	0.611	-0.602
53	3.702	3.776	3.851	1.988	-1.959	0.625	-0.616
54	3.584	3.657	3.731	2.021	-1.990	0.639	-0.629
55	3.470	3.542	3.615	2.053	-2.022	0.653	-0.643
56	3.361	3.431	3.503	2.086	-2.053	0.667	-0.656
57	3.255	3.324	3.395	2.118	-2.084	0.681	-0.670
58	3.153	3.222	3.291	2.150	-2.114	0.695	-0.684
59	3.055	3.122	3.191	2.182	-2.145	0.710	-0.698
60	2.961	3.027	3.094	2.214	-2.175	0.724	-0.712
61	2.870	2.934	3.000	2.245	-2.206	0.739	-0.726
62	2.782	2.845	2.910	2.277	-2.236	0.753	-0.740
63	2.697	2.760	2.823	2.308	-2.266	0.768	-0.754
64	2.615	2.677	2.739	2.339	-2.296	0.783	-0.768
65	2.536	2.597	2.658	2.370	-2.325	0.797	-0.782
66	2.460	2.520	2.580	2.401	-2.355	0.812	-0.796
67	2.387	2.445	2.505	2.432	-2.384	0.827	-0.811
68	2.316	2.373	2.432	2.462	-2.413	0.842	-0.825
69	2.247	2.304	2.361	2.493	-2.442	0.857	-0.840
70	2.181	2.237	2.293	2.523	-2.471	0.872	-0.854
71	2.118	2.172	2.227	2.553	-2.500	0.888	-0.869
72	2.056	2.109	2.164	2.583	-2.528	0.903	-0.884
73	1.996	2.049	2.102	2.613	-2.556	0.918	-0.898
74	1.939	1.990	2.043	2.643	-2.585	0.934	-0.913
75	1.883	1.934	1.985	2.673	-2.613	0.949	-0.928
76	1.829	1.879	1.930	2.702	-2.641	0.965	-0.943
77	1.777	1.826	1.876	2.731	-2.668	0.981	-0.958
78	1.727	1.775	1.824	2.761	-2.696	0.997	-0.973
79	1.678	1.725	1.774	2.790	-2.724	1.012	-0.988
80	1.631	1.678	1.725	2.818	-2.751	1.028	-1.004
81	1.586	1.631	1.678	2.847	-2.778	1.044	-1.019
82	1.542	1.586	1.632	2.876	-2.805	1.060	-1.034
83	1.499	1.543	1.588	2.904	-2.832	1.077	-1.050
84	1.458	1.501	1.545	2.933	-2.859	1.093	-1.065
85	1.418	1.461	1.504	2.961	-2.886	1.109	-1.081
86	1.380	1.421	1.464	2.989	-2.912	1.126	-1.097
87	1.342	1.383	1.425	3.017	-2.938	1.142	-1.112
88	1.306	1.346	1.387	3.045	-2.965	1.159	-1.128
89	1.271	1.310	1.351	3.073	-2.991	1.175	-1.144
90	1.237	1.276	1.315	3.100	-3.017	1.192	-1.160
91	1.204	1.242	1.281	3.128	-3.043	1.209	-1.176
92	1.172	1.210	1.248	3.155	-3.068	1.226	-1.192

93	1.142	1.178	1.216	3.182	-3.094	1.243	-1.208
94	1.112	1.147	1.184	3.210	-3.119	1.260	-1.224
95	1.083	1.118	1.154	3.237	-3.145	1.277	-1.240
96	1.055	1.089	1.125	3.263	-3.170	1.294	-1.257
97	1.027	1.061	1.096	3.290	-3.195	1.311	-1.273
98	1.001	1.034	1.068	3.317	-3.220	1.328	-1.290
99	0.975	1.008	1.042	3.343	-3.245	1.346	-1.306
100	0.950	0.983	1.016	3.370	-3.270	1.363	-1.323
101	0.926	0.958	0.990	3.396	-3.294	1.381	-1.339
102	0.903	0.934	0.966	3.422	-3.319	1.398	-1.356
103	0.880	0.911	0.942	3.448	-3.343	1.416	-1.373
104	0.858	0.888	0.919	3.474	-3.367	1.434	-1.390
105	0.837	0.866	0.896	3.500	-3.391	1.452	-1.407
106	0.816	0.845	0.875	3.526	-3.415	1.470	-1.424
107	0.796	0.824	0.853	3.552	-3.439	1.488	-1.441
108	0.776	0.804	0.833	3.577	-3.463	1.506	-1.458
109	0.757	0.785	0.813	3.602	-3.487	1.524	-1.475
110	0.739	0.766	0.793	3.628	-3.510	1.542	-1.492
111	0.721	0.747	0.775	3.653	-3.534	1.561	-1.510
112	0.703	0.729	0.756	3.678	-3.557	1.579	-1.527
113	0.687	0.712	0.738	3.703	-3.580	1.597	-1.545
114	0.670	0.695	0.721	3.728	-3.603	1.616	-1.562
115	0.654	0.679	0.704	3.753	-3.626	1.635	-1.580
116	0.639	0.663	0.688	3.777	-3.649	1.653	-1.597
117	0.624	0.647	0.672	3.802	-3.672	1.672	-1.615
118	0.609	0.632	0.656	3.826	-3.695	1.691	-1.633
119	0.595	0.618	0.641	3.851	-3.717	1.710	-1.651
120	0.581	0.603	0.627	3.875	-3.740	1.729	-1.669
121	0.567	0.589	0.612	3.899	-3.762	1.748	-1.687
122	0.554	0.576	0.599	3.923	-3.785	1.767	-1.705
123	0.541	0.563	0.585	3.947	-3.807	1.786	-1.723
124	0.529	0.550	0.572	3.971	-3.829	1.806	-1.741
125	0.517	0.538	0.559	3.995	-3.851	1.825	-1.759

