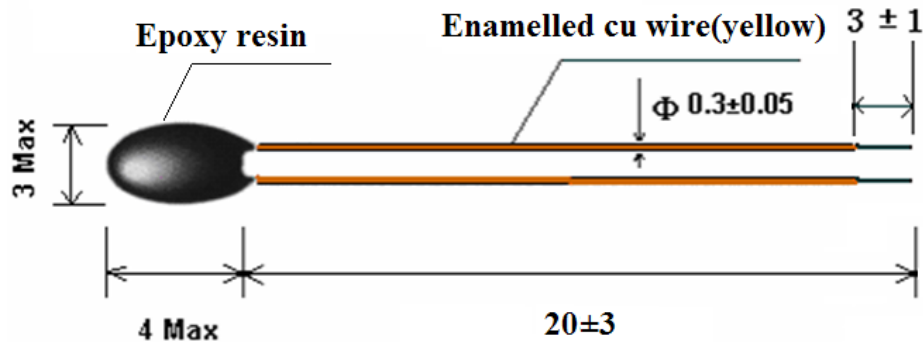


Specifications for NTC Thermistor

Part No.	MF52B2 104H4250
Operating criteria	Q/320115SHD03-2011

1、Dimensions(mm)



2、Materials

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

3、Ordering information

MF52	B	104	H	4250
Pearl-Shape Temp Measurement NTC Thermistor	Enamelled cu wire	Resistance	Tolerance	B-value (25/50)
		$10 \times 10^4 = 100K\Omega$	±3%	4250K

4、Electrical characteristics

	Item	Symbol	Test conditions	Unit	Specification
4.1	Zero Power Resistance at 25℃	R_{25}	$T_a = 25 \pm 0.05^\circ\text{C}$ Test Power $\leq 0.1\text{mW}$ Test in fluid liquid	K Ω	100±3%
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	4250±1%
4.3	Thermal dissipation Coefficient	δ	In still air	mW/℃	≥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 $\Delta R/R \leq \pm 2\%$

6、Soldering conditions

When soldering, space between iron tip and thermistor body must be more than 10mm, temperature should be less than 350℃, soldering time should be as short as possible.

7、Storage conditions

7.1 Storage temp: -10℃ ~ 40℃;

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 (RLSHD000645310002C)

8.4  CQC Certification (CQC07001019009)

8.5  The Hi&Tech product of Jiangsu province (070115G0058N)

R&T Table

R25=100K Ω TOLERANCE: ± 3%				B25/50=4250K TOLERANCE: ± 1% (P195)			
TEMP (°C)	RESISTANCE (K Ω)			RESISST-TOL (%)		TEMP-TOL (°C)	
	MIN	CENTER	MAX	△R	-△R	△T	-△T
-55	14738.900	15985.700	17322.300	8.361	-7.799	0.964	-0.899
-54	13230.500	14334.000	15515.600	8.243	-7.698	0.964	-0.900
-53	11909.700	12889.300	13937.000	8.128	-7.600	0.963	-0.900
-52	10749.400	11621.500	12553.200	8.016	-7.504	0.962	-0.901
-51	9726.810	10505.400	11336.100	7.907	-7.411	0.962	-0.901
-50	8822.820	9519.670	10262.300	7.801	-7.320	0.961	-0.901
-49	8021.340	8646.560	9312.130	7.697	-7.230	0.960	-0.902
-48	7308.710	7870.990	8468.890	7.596	-7.143	0.959	-0.902
-47	6673.360	7180.160	7718.490	7.497	-7.058	0.958	-0.901
-46	6105.420	6563.190	7048.930	7.401	-6.974	0.956	-0.901
-45	5596.460	6010.780	6449.970	7.306	-6.892	0.955	-0.901
-44	5139.250	5514.970	5912.840	7.214	-6.812	0.954	-0.900

-43	4727.560	5068.910	5430.020	7.123	-6.734	0.952	-0.900
-42	4356.040	4666.700	4995.020	7.035	-6.657	0.950	-0.899
-41	4020.030	4303.240	4602.260	6.948	-6.581	0.949	-0.899
-40	3715.510	3974.110	4246.870	6.863	-6.506	0.947	-0.898
-39	3438.980	3675.460	3924.660	6.780	-6.433	0.945	-0.897
-38	3187.380	3403.940	3631.950	6.698	-6.362	0.943	-0.896
-37	2958.040	3156.640	3365.540	6.617	-6.291	0.941	-0.894
-36	2748.620	2930.980	3122.630	6.538	-6.221	0.939	-0.893
-35	2557.060	2724.720	2900.770	6.460	-6.153	0.936	-0.892
-34	2381.540	2535.880	2697.780	6.384	-6.085	0.934	-0.890
-33	2220.480	2362.700	2511.770	6.309	-6.019	0.932	-0.889
-32	2072.440	2203.650	2341.050	6.235	-5.954	0.929	-0.887
-31	1936.190	2057.360	2184.140	6.162	-5.889	0.926	-0.885
-30	1810.600	1922.600	2039.700	6.090	-5.825	0.924	-0.883
-29	1694.680	1798.320	1906.570	6.019	-5.762	0.921	-0.881
-28	1587.560	1683.530	1783.690	5.949	-5.700	0.918	-0.879
-27	1488.430	1577.380	1670.140	5.880	-5.639	0.915	-0.877
-26	1396.590	1479.100	1565.070	5.812	-5.578	0.912	-0.875
-25	1311.400	1388.000	1467.740	5.745	-5.518	0.908	-0.873
-24	1232.300	1303.460	1377.480	5.678	-5.458	0.905	-0.870
-23	1158.770	1224.920	1293.680	5.613	-5.400	0.902	-0.868
-22	1090.350	1151.890	1215.800	5.548	-5.341	0.898	-0.865
-21	1026.620	1083.900	1143.340	5.484	-5.284	0.895	-0.862
-20	967.210	1020.550	1075.870	5.420	-5.227	0.891	-0.859
-19	911.763	961.479	1012.990	5.357	-5.170	0.887	-0.856
-18	859.975	906.332	954.327	5.295	-5.114	0.884	-0.853
-17	811.565	854.811	899.552	5.233	-5.059	0.880	-0.850
-16	766.274	806.639	848.366	5.172	-5.004	0.876	-0.847
-15	723.870	761.563	800.498	5.112	-4.949	0.872	-0.844
-14	684.138	719.352	755.698	5.052	-4.895	0.868	-0.840
-13	646.883	679.795	713.738	4.993	-4.841	0.863	-0.837
-12	611.926	642.699	674.411	4.934	-4.788	0.859	-0.834
-11	579.105	607.888	637.528	4.875	-4.734	0.855	-0.830
-10	548.268	575.201	602.913	4.817	-4.682	0.850	-0.826
-9	519.278	544.488	570.408	4.760	-4.629	0.846	-0.822
-8	492.009	515.613	539.864	4.703	-4.578	0.841	-0.819
-7	466.342	488.452	511.148	4.646	-4.526	0.836	-0.815
-6	442.173	462.887	484.135	4.590	-4.475	0.832	-0.811
-5	419.399	438.812	458.711	4.534	-4.423	0.827	-0.807
-4	397.932	416.130	434.769	4.479	-4.373	0.822	-0.802
-3	377.684	394.749	412.212	4.424	-4.322	0.817	-0.798
-2	358.579	374.584	390.951	4.369	-4.272	0.812	-0.794
-1	340.544	355.558	370.900	4.314	-4.222	0.807	-0.790
0	323.511	337.600	351.984	4.260	-4.173	0.802	-0.785

1	307.418	320.640	334.130	4.207	-4.123	0.796	-0.781
2	292.207	304.619	317.272	4.153	-4.074	0.791	-0.776
3	277.824	289.477	301.348	4.100	-4.025	0.786	-0.771
4	264.219	275.162	286.300	4.047	-3.976	0.780	-0.766
5	251.344	261.622	272.075	3.995	-3.928	0.775	-0.762
6	239.158	248.812	258.623	3.943	-3.880	0.769	-0.757
7	227.618	236.688	245.898	3.891	-3.832	0.763	-0.752
8	216.687	225.209	233.856	3.839	-3.784	0.758	-0.747
9	206.329	214.338	222.458	3.788	-3.736	0.752	-0.742
10	196.950	204.500	212.147	3.739	-3.691	0.744	-0.735
11	187.204	194.280	201.442	3.686	-3.642	0.740	-0.731
12	178.377	185.029	191.756	3.635	-3.595	0.734	-0.726
13	170.003	176.257	182.576	3.585	-3.548	0.728	-0.721
14	162.057	167.937	173.874	3.535	-3.501	0.722	-0.715
15	154.514	160.044	165.623	3.485	-3.455	0.716	-0.710
16	147.354	152.554	157.796	3.435	-3.408	0.710	-0.704
17	140.554	145.445	150.371	3.386	-3.362	0.703	-0.698
18	134.095	138.695	143.324	3.337	-3.316	0.697	-0.693
19	127.958	132.285	136.636	3.288	-3.271	0.691	-0.687
20	122.126	126.197	130.286	3.239	-3.225	0.684	-0.681
21	116.583	120.412	124.255	3.191	-3.180	0.678	-0.675
22	111.313	114.915	118.527	3.143	-3.134	0.671	-0.669
23	106.301	109.690	113.086	3.095	-3.089	0.664	-0.663
24	101.534	104.723	107.914	3.047	-3.044	0.658	-0.657
25	97.000	100.000	103.000	3.000	-3.000	0.652	-0.652
26	92.599	95.507	98.417	3.047	-3.044	0.665	-0.664
27	88.415	91.233	94.057	3.094	-3.088	0.679	-0.677
28	84.436	87.167	89.905	3.141	-3.133	0.693	-0.691
29	80.651	83.297	85.953	3.188	-3.177	0.707	-0.704
30	77.050	79.614	82.190	3.235	-3.220	0.721	-0.718
31	73.623	76.107	78.605	3.281	-3.264	0.735	-0.731
32	70.361	72.768	75.190	3.327	-3.307	0.750	-0.745
33	67.256	69.588	71.936	3.374	-3.351	0.764	-0.759
34	64.300	66.559	68.836	3.420	-3.394	0.778	-0.773
35	61.485	63.674	65.881	3.465	-3.436	0.793	-0.786
36	58.804	60.924	63.063	3.511	-3.479	0.808	-0.800
37	56.250	58.303	60.377	3.557	-3.521	0.823	-0.814
38	53.816	55.805	57.816	3.602	-3.564	0.837	-0.828
39	51.497	53.424	55.372	3.647	-3.606	0.852	-0.843
40	49.287	51.153	53.042	3.692	-3.648	0.867	-0.857
41	47.180	48.987	50.818	3.737	-3.689	0.883	-0.871
42	45.171	46.921	48.696	3.782	-3.731	0.898	-0.886
43	43.255	44.951	46.671	3.826	-3.772	0.913	-0.900
44	41.428	43.070	44.738	3.871	-3.813	0.928	-0.915

45	39.685	41.276	42.892	3.915	-3.854	0.944	-0.929
46	38.022	39.563	41.130	3.959	-3.895	0.959	-0.944
47	36.436	37.928	39.447	4.003	-3.935	0.975	-0.959
48	34.921	36.367	37.839	4.047	-3.976	0.991	-0.973
49	33.476	34.877	36.304	4.090	-4.016	1.007	-0.988
50	32.010	33.365	34.745	4.136	-4.058	1.021	-1.001
51	30.779	32.093	33.434	4.177	-4.096	1.038	-1.018
52	29.521	30.794	32.094	4.220	-4.135	1.055	-1.033
53	28.319	29.553	30.813	4.263	-4.175	1.071	-1.049
54	27.171	28.367	29.588	4.305	-4.214	1.087	-1.064
55	26.074	27.233	28.417	4.348	-4.253	1.103	-1.079
56	25.026	26.149	27.297	4.390	-4.292	1.120	-1.095
57	24.025	25.112	26.226	4.433	-4.331	1.136	-1.110
58	23.067	24.121	25.201	4.475	-4.369	1.153	-1.126
59	22.152	23.173	24.220	4.517	-4.407	1.170	-1.141
60	21.277	22.267	23.282	4.558	-4.446	1.186	-1.157
61	20.440	21.399	22.384	4.600	-4.484	1.203	-1.173
62	19.639	20.569	21.524	4.641	-4.521	1.220	-1.189
63	18.874	19.775	20.701	4.682	-4.559	1.237	-1.205
64	18.141	19.015	19.913	4.723	-4.596	1.255	-1.221
65	17.440	18.287	19.159	4.764	-4.634	1.272	-1.237
66	16.769	17.591	18.436	4.805	-4.671	1.289	-1.253
67	16.127	16.923	17.744	4.846	-4.707	1.307	-1.269
68	15.512	16.284	17.080	4.886	-4.744	1.324	-1.286
69	14.923	15.672	16.445	4.926	-4.781	1.342	-1.302
70	14.359	15.086	15.835	4.966	-4.817	1.360	-1.319
71	13.819	14.524	15.251	5.006	-4.853	1.377	-1.335
72	13.302	13.986	14.692	5.046	-4.889	1.395	-1.352
73	12.806	13.470	14.155	5.085	-4.925	1.413	-1.369
74	12.332	12.975	13.640	5.124	-4.960	1.431	-1.385
75	11.876	12.501	13.147	5.164	-4.996	1.450	-1.402
76	11.440	12.046	12.673	5.203	-5.031	1.468	-1.419
77	11.022	11.610	12.219	5.241	-5.066	1.486	-1.436
78	10.621	11.192	11.783	5.280	-5.101	1.505	-1.454
79	10.236	10.791	11.365	5.318	-5.135	1.523	-1.471
80	9.868	10.406	10.963	5.357	-5.170	1.542	-1.488
81	9.514	10.036	10.578	5.395	-5.204	1.561	-1.505
82	9.174	9.682	10.208	5.433	-5.238	1.579	-1.523
83	8.849	9.341	9.852	5.470	-5.272	1.598	-1.540
84	8.536	9.014	9.511	5.508	-5.306	1.617	-1.558
85	8.236	8.701	9.183	5.545	-5.339	1.637	-1.576
86	7.948	8.399	8.868	5.583	-5.373	1.656	-1.593
87	7.671	8.110	8.565	5.620	-5.406	1.675	-1.611
88	7.406	7.832	8.275	5.657	-5.439	1.694	-1.629

89	7.150	7.564	7.995	5.693	-5.472	1.714	-1.647
90	6.905	7.308	7.726	5.730	-5.504	1.734	-1.665
91	6.670	7.061	7.468	5.766	-5.537	1.753	-1.684
92	6.444	6.824	7.220	5.802	-5.569	1.773	-1.702
93	6.226	6.596	6.981	5.838	-5.601	1.793	-1.720
94	6.017	6.376	6.751	5.874	-5.633	1.813	-1.739
95	5.816	6.166	6.530	5.910	-5.665	1.833	-1.757
96	5.623	5.963	6.317	5.945	-5.696	1.853	-1.776
97	5.437	5.768	6.113	5.980	-5.728	1.873	-1.794
98	5.259	5.580	5.916	6.015	-5.759	1.894	-1.813
99	5.087	5.399	5.726	6.050	-5.790	1.914	-1.832
100	4.921	5.226	5.544	6.085	-5.821	1.935	-1.851
101	4.762	5.058	5.368	6.119	-5.851	1.955	-1.870
102	4.609	4.897	5.198	6.154	-5.882	1.976	-1.889
103	4.462	4.742	5.035	6.188	-5.912	1.997	-1.908
104	4.320	4.593	4.878	6.222	-5.942	2.018	-1.927
105	4.183	4.449	4.727	6.256	-5.972	2.039	-1.947
106	4.051	4.310	4.581	6.289	-6.002	2.060	-1.966
107	3.925	4.177	4.441	6.323	-6.031	2.081	-1.985
108	3.802	4.048	4.305	6.356	-6.061	2.103	-2.005
109	3.685	3.924	4.175	6.389	-6.090	2.124	-2.025
110	3.571	3.804	4.049	6.422	-6.119	2.146	-2.044
111	3.462	3.689	3.927	6.455	-6.148	2.167	-2.064
112	3.357	3.578	3.810	6.487	-6.177	2.189	-2.084
113	3.255	3.471	3.697	6.520	-6.205	2.211	-2.104
114	3.158	3.367	3.588	6.552	-6.233	2.233	-2.124
115	3.063	3.268	3.483	6.584	-6.262	2.255	-2.144
116	2.972	3.172	3.381	6.616	-6.290	2.277	-2.165
117	2.884	3.079	3.284	6.647	-6.317	2.299	-2.185
118	2.800	2.989	3.189	6.679	-6.345	2.321	-2.205
119	2.718	2.903	3.098	6.710	-6.373	2.344	-2.226
120	2.639	2.819	3.009	6.741	-6.400	2.366	-2.246
121	2.563	2.739	2.924	6.772	-6.427	2.389	-2.267
122	2.489	2.661	2.842	6.803	-6.454	2.411	-2.288
123	2.418	2.586	2.763	6.834	-6.481	2.434	-2.309
124	2.350	2.513	2.686	6.864	-6.507	2.457	-2.329
125	2.283	2.443	2.612	6.894	-6.534	2.480	-2.350

