

Temperature Measurement NTC Thermistor



Features

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Applications

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PART NUMBER

Example: RND 155MF52A2 104J4100

RND 155MF52A2	104	J	4100
Type	Zero Power Resistance @ 25 °C 104 = 100 kΩ	Tolerance F = ± 1% G = ± 2% H = ± 3% J = ± 5%	B Constant 3470 = 3470 K 3950 = 3950 K 4100 = 4100 K 4500 = 4500 K

Electrical Characteristics

Item	Symbol	Test conditions	Unit	Specification
1.1	Zero Power Resistance at 25°C	R25 Ta=25±0.05°C Test Power≤0.1mW	KΩ	100±5%
1.2	B-value	B25/50 $B = [(Ta \times Tb) / (Tb - Ta)] \times \ln(Ra / Rb)$ Tb=50°C±0.01°C	K	4100±1%
1.3	Thermal dissipation Coefficient	δ In still air	mW/°C	≥2
1.4	Thermal time constant	τ In still air	sec	≤7
1.5	Insulation resistance	/ 100V/DC 1min	MΩ	≥100
1.6	Operating temperature	/	°C	-55°C ~ 125°C
1.7	Maximum rated power	Pmax /	mW	50
1.8	R&T-table	/	/	See attached table
1.9	Resistance tolerance	/	/	See attached curve

Reliability

Item	Test conditions and methods	Technical requirements
2.1	Terminal strength Fixed resistor end, Pull strength : 5±1 N time: 10±1 sec	No obvious damage, R25 ΔR/R≤±2%
2.2	Solderability Temperature : 245±5°C for 2-3sec	coverage area ≥ 95%.
2.3	Welding heat resistant Tin pan temperature: 260°C ±5°C, immersion depth is apart from the body resistance 6 mm, time 5±1 sec	R25 ΔR/R≤±2%,
2.4	Steady humidity and heat Temp: 40°C±2°C, Humidity: 93±2%, Time : 500hrs	R25 ΔR/R≤±2%,
2.5	Rapid changes in temperature -55°C30min→25°C5min→1 25°C30min→25°C5min, 5cycles	R25 ΔR/R≤±2%
2.6	High temperature storage Temp : 125°C±5°C, Time :1000hrs	R25 ΔR/R≤±2%
2.7	Low temperature storage Temp : -55°C, Time :1000hrs	R25 ΔR/R≤±2%

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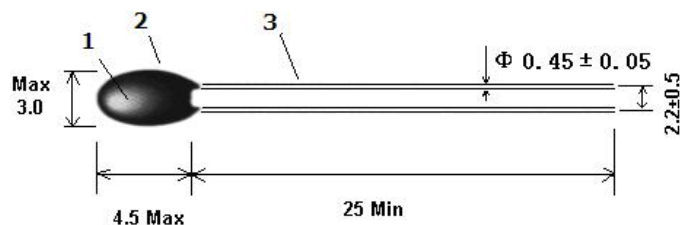
Caution

- 3.1 This product uses: Temperature measurement and control;
- 3.2 Avoid measurement error when current through the thermistor chip resulted in heating element itself;
- 3.3 When soldering iron, the distance between welding place and coating head at least 2mm, welding temp lower than 360°C, and time < 3 secs,
- 3.4 Storage temp: -10°C~40°C ; storage humidity: ≤75% RH;
- 3.5 Avoid putting in air corrosion or sunlight environment;
- 3.6 Remake sealed storage after package opening. The storage life is 1 year. Exceed storage period, can re-inspect per as the items stipulated in the standard. If it meets the requirements, it can still be used.
- 3.7 In the process using heat-shrink tube, blown by hair dryer is not allowed, we suggest put the product into the constant temperature oven and heat shrinkable at 110 °C/10-12min

Certificate

Quality Control System Certification ISO9001 : 2015, IATF16949:2016
Environment Management System Certification ISO14001:2015
Environment Test Report RoHS
CQC Safe Certification

Dimensions



No.	Name	Material specifications	Quantity	note
1	element	NTC Thermistor (chip)	1	
2	Modified resin	Coating types of resin	1	Black
3	Lead wire	CP wire	2	Silver

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R&T Table

R25=100KΩ TOLERANCE:±5%				B25/50=4100K TOLERANCE:±1% P209-14			
TEMP(°C)	RESISTANCE(KΩ)			RESIST-TOL(%)		TEMP-TOL(°C)	
	MIN	CENTER	MAX	△R	-△R	△T	-△T
-55	9542.050	10523.000	11575.700	10.000	-9.321	1.257	-1.171
-54	8853.450	9756.230	10724.100	9.921	-9.253	1.257	-1.173
-53	8224.130	9055.990	9947.060	9.839	-9.185	1.257	-1.174
-52	7647.260	8414.580	9235.750	9.758	-9.118	1.257	-1.174
-51	7117.070	7825.510	8582.960	9.679	-9.052	1.257	-1.175
-50	6628.700	7283.290	7982.530	9.600	-8.987	1.256	-1.176
-49	6177.990	6783.250	7429.190	9.522	-8.922	1.256	-1.177
-48	5761.360	6321.350	6918.420	9.445	-8.858	1.255	-1.177
-47	5375.700	5894.080	6446.280	9.368	-8.794	1.255	-1.178
-46	5018.300	5498.380	6009.340	9.292	-8.731	1.254	-1.178
-45	4686.740	5131.560	5604.560	9.217	-8.668	1.253	-1.179
-44	4378.910	4791.230	5229.260	9.142	-8.605	1.253	-1.179
-43	4092.900	4475.230	4881.050	9.068	-8.543	1.252	-1.179
-42	3827.000	4181.660	4557.760	8.994	-8.481	1.251	-1.180
-41	3579.670	3908.770	4257.450	8.920	-8.419	1.250	-1.180
-40	3349.510	3655.000	3978.370	8.847	-8.357	1.249	-1.180
-39	3135.240	3418.900	3718.900	8.774	-8.296	1.248	-1.180
-38	2935.690	3199.170	3477.580	8.702	-8.235	1.247	-1.180
-37	2749.790	2994.610	3253.060	8.630	-8.175	1.246	-1.180
-36	2576.560	2804.110	3044.120	8.559	-8.114	1.245	-1.181
-35	2415.080	2626.650	2849.610	8.488	-8.054	1.244	-1.181
-34	2264.520	2461.300	2668.490	8.417	-7.994	1.243	-1.181
-33	2124.110	2307.190	2499.790	8.347	-7.935	1.242	-1.181
-32	1993.110	2163.520	2342.620	8.278	-7.876	1.241	-1.181
-31	1870.880	2029.530	2196.140	8.208	-7.817	1.240	-1.181
-30	1756.790	1904.560	2059.590	8.140	-7.758	1.239	-1.180
-29	1650.270	1787.950	1932.270	8.071	-7.700	1.237	-1.180
-28	1550.790	1679.120	1813.520	8.004	-7.642	1.236	-1.180
-27	1457.870	1577.520	1702.720	7.936	-7.584	1.235	-1.180

Temperature Measurement

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-26	1371.030	1482.630	1599.310	7.869	-7.527	1.233	-1.180
-25	1289.860	1394.000	1502.770	7.803	-7.470	1.232	-1.179
-24	1213.960	1311.170	1412.620	7.737	-7.413	1.231	-1.179
-23	1142.970	1233.740	1328.390	7.671	-7.357	1.229	-1.179
-22	1076.550	1161.350	1249.690	7.606	-7.301	1.228	-1.178
-21	1014.390	1093.630	1176.110	7.541	-7.245	1.226	-1.178
-20	956.185	1030.260	1107.300	7.477	-7.190	1.224	-1.177
-19	901.667	970.945	1042.930	7.414	-7.135	1.223	-1.177
-18	850.585	915.399	982.689	7.350	-7.080	1.221	-1.176
-17	802.706	863.365	926.288	7.288	-7.025	1.219	-1.176
-16	757.810	814.603	873.464	7.225	-6.971	1.218	-1.175
-15	715.697	768.890	823.972	7.163	-6.918	1.216	-1.174
-14	676.179	726.018	777.582	7.102	-6.864	1.214	-1.173
-13	639.081	685.795	734.084	7.041	-6.811	1.212	-1.173
-12	604.243	648.043	693.281	6.980	-6.758	1.210	-1.172
-11	571.513	612.596	654.991	6.920	-6.706	1.208	-1.171
-10	540.751	579.300	619.044	6.860	-6.654	1.206	-1.170
-9	511.830	548.011	585.284	6.801	-6.602	1.204	-1.169
-8	484.626	518.599	553.566	6.742	-6.550	1.202	-1.168
-7	459.029	490.939	523.753	6.684	-6.499	1.199	-1.166
-6	434.935	464.916	495.721	6.625	-6.448	1.197	-1.165
-5	412.246	440.425	469.353	6.568	-6.398	1.195	-1.164
-4	390.872	417.365	444.540	6.511	-6.347	1.192	-1.163
-3	370.730	395.646	421.182	6.454	-6.297	1.190	-1.161
-2	351.741	375.182	399.184	6.397	-6.247	1.188	-1.160
-1	333.832	355.891	378.460	6.341	-6.198	1.185	-1.158
0	316.850	337.610	358.830	6.285	-6.148	1.183	-1.157
1	300.990	320.544	340.514	6.230	-6.100	1.180	-1.155
2	285.935	304.353	323.147	6.175	-6.051	1.177	-1.154
3	271.715	289.068	306.761	6.120	-6.003	1.174	-1.152
4	258.281	274.635	291.295	6.066	-5.954	1.172	-1.150
5	245.584	261.001	276.693	6.012	-5.907	1.169	-1.148
6	233.579	248.117	262.901	5.958	-5.859	1.166	-1.147
7	222.225	235.938	249.871	5.905	-5.811	1.163	-1.145
8	211.484	224.421	237.555	5.852	-5.764	1.160	-1.143
9	201.318	213.528	225.911	5.799	-5.717	1.157	-1.141
10	191.694	203.220	214.899	5.747	-5.671	1.154	-1.139
11	182.581	193.463	204.481	5.695	-5.624	1.151	-1.137
12	173.947	184.225	194.621	5.643	-5.578	1.148	-1.135
13	165.766	175.475	185.288	5.592	-5.532	1.145	-1.133
14	158.012	167.186	176.449	5.541	-5.486	1.142	-1.131
15	150.660	159.330	168.077	5.490	-5.441	1.139	-1.128
16	143.687	151.883	160.145	5.439	-5.396	1.136	-1.126

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17	137.072	144.821	152.627	5.389	-5.351	1.133	-1.124
18	130.794	138.123	145.499	5.339	-5.306	1.130	-1.123
19	124.835	131.769	138.739	5.290	-5.261	1.127	-1.121
20	119.177	125.738	132.327	5.240	-5.217	1.124	-1.119
21	113.804	120.012	126.243	5.191	-5.173	1.123	-1.119
22	108.699	114.576	120.469	5.142	-5.129	1.122	-1.119
23	103.849	109.413	114.987	5.094	-5.085	1.124	-1.122
24	99.238	104.507	109.781	5.046	-5.041	1.140	-1.139
25	95.000	100.000	105.000	5.000	-5.000	1.137	-1.137
26	90.601	95.415	100.233	5.049	-5.044	1.079	-1.078
27	86.562	91.202	95.850	5.096	-5.087	1.114	-1.112
28	82.723	87.196	91.681	5.143	-5.130	1.137	-1.134
29	79.072	83.385	87.713	5.190	-5.172	1.158	-1.153
30	75.600	79.759	83.937	5.237	-5.214	1.177	-1.172
31	72.297	76.308	80.341	5.284	-5.256	1.196	-1.189
32	69.155	73.024	76.916	5.330	-5.298	1.214	-1.207
33	66.164	69.896	73.654	5.376	-5.339	1.233	-1.224
34	63.317	66.918	70.547	5.422	-5.380	1.251	-1.241
35	60.607	64.081	67.585	5.468	-5.421	1.270	-1.259
36	58.025	61.378	64.762	5.513	-5.462	1.288	-1.276
37	55.566	58.802	62.071	5.559	-5.503	1.306	-1.293
38	53.223	56.347	59.504	5.604	-5.543	1.325	-1.311
39	50.990	54.006	57.057	5.648	-5.583	1.343	-1.328
40	48.862	51.774	54.721	5.693	-5.623	1.362	-1.345
41	46.833	49.644	52.493	5.737	-5.662	1.381	-1.363
42	44.898	47.613	50.366	5.782	-5.702	1.400	-1.380
43	43.052	45.675	48.336	5.826	-5.741	1.419	-1.398
44	41.291	43.825	46.397	5.869	-5.780	1.438	-1.416
45	39.611	42.059	44.546	5.913	-5.819	1.457	-1.433
46	38.008	40.373	42.777	5.956	-5.857	1.476	-1.451
47	36.477	38.762	41.088	5.999	-5.896	1.495	-1.469
48	35.015	37.224	39.473	6.042	-5.934	1.514	-1.487
49	33.619	35.754	37.930	6.085	-5.972	1.534	-1.505
50	32.285	34.350	36.454	6.128	-6.009	1.553	-1.523
51	31.011	33.007	35.044	6.170	-6.047	1.573	-1.542
52	29.793	31.724	33.694	6.212	-6.084	1.593	-1.560
53	28.629	30.496	32.404	6.254	-6.121	1.613	-1.578
54	27.517	29.323	31.169	6.296	-6.158	1.633	-1.597
55	26.453	28.200	29.987	6.337	-6.194	1.653	-1.615
56	25.435	27.125	28.856	6.378	-6.231	1.673	-1.634
57	24.461	26.097	27.773	6.420	-6.267	1.693	-1.653
58	23.530	25.113	26.736	6.460	-6.303	1.713	-1.672
59	22.638	24.171	25.742	6.501	-6.339	1.734	-1.690

Temperature Measurement NTC Thermistor

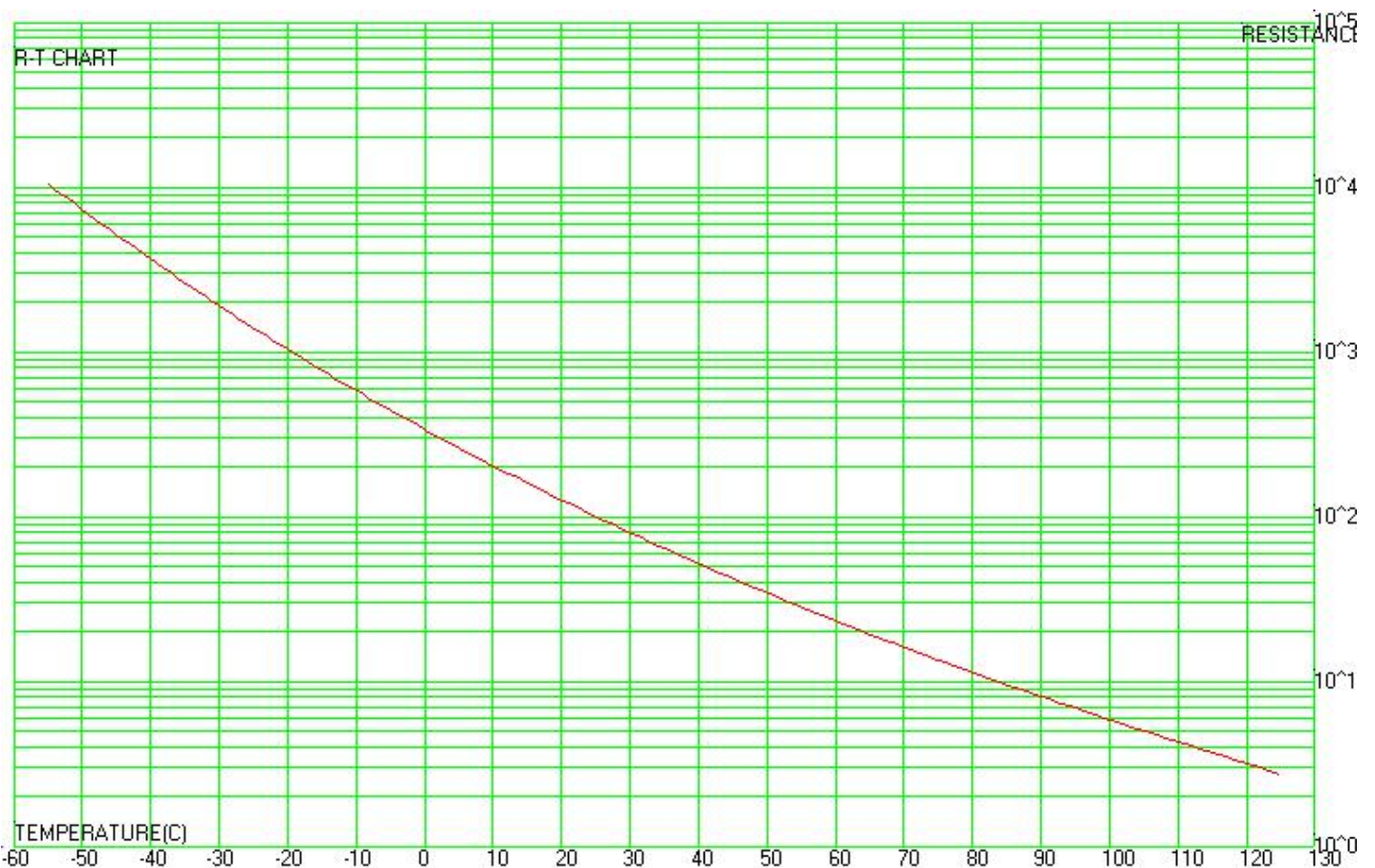


60	21.785	23.268	24.791	6.542	-6.375	1.754	-1.709
61	20.968	22.404	23.879	6.582	-6.410	1.775	-1.729
62	20.186	21.576	23.005	6.622	-6.445	1.796	-1.748
63	19.436	20.783	22.168	6.662	-6.480	1.816	-1.767
64	18.718	20.023	21.365	6.702	-6.515	1.837	-1.786
65	18.030	19.294	20.595	6.741	-6.550	1.858	-1.806
66	17.371	18.595	19.856	6.781	-6.584	1.880	-1.825
67	16.739	17.925	19.148	6.820	-6.619	1.901	-1.845
68	16.133	17.283	18.468	6.859	-6.653	1.922	-1.864
69	15.552	16.666	17.816	6.898	-6.687	1.943	-1.884
70	14.994	16.074	17.190	6.936	-6.720	1.965	-1.904
71	14.459	15.507	16.588	6.975	-6.754	1.987	-1.924
72	13.946	14.962	16.011	7.013	-6.787	2.008	-1.944
73	13.453	14.438	15.456	7.051	-6.820	2.030	-1.964
74	12.980	13.936	14.924	7.089	-6.853	2.052	-1.984
75	12.526	13.453	14.412	7.127	-6.886	2.074	-2.004
76	12.090	12.989	13.920	7.165	-6.919	2.096	-2.024
77	11.671	12.543	13.447	7.202	-6.951	2.118	-2.045
78	11.269	12.115	12.992	7.239	-6.984	2.141	-2.065
79	10.882	11.703	12.555	7.276	-7.016	2.163	-2.085
80	10.510	11.307	12.134	7.313	-7.048	2.185	-2.106
81	10.153	10.927	11.730	7.350	-7.080	2.208	-2.127
82	9.809	10.560	11.340	7.387	-7.111	2.231	-2.147
83	9.479	10.208	10.966	7.423	-7.143	2.253	-2.168
84	9.161	9.869	10.605	7.459	-7.174	2.276	-2.189
85	8.855	9.543	10.258	7.496	-7.205	2.299	-2.210
86	8.560	9.228	9.923	7.532	-7.236	2.322	-2.231
87	8.277	8.926	9.601	7.567	-7.267	2.345	-2.252
88	8.004	8.635	9.291	7.603	-7.298	2.368	-2.273
89	7.742	8.354	8.992	7.639	-7.329	2.392	-2.295
90	7.489	8.084	8.704	7.674	-7.359	2.415	-2.316
91	7.245	7.823	8.426	7.709	-7.390	2.439	-2.337
92	7.010	7.572	8.158	7.744	-7.420	2.462	-2.359
93	6.784	7.330	7.900	7.779	-7.450	2.486	-2.380
94	6.566	7.097	7.651	7.814	-7.480	2.509	-2.402
95	6.355	6.871	7.411	7.849	-7.510	2.533	-2.424
96	6.153	6.654	7.179	7.884	-7.539	2.557	-2.445
97	5.957	6.445	6.955	7.918	-7.569	2.581	-2.467
98	5.768	6.243	6.739	7.953	-7.598	2.605	-2.489
99	5.586	6.048	6.531	7.987	-7.628	2.629	-2.511
100	5.411	5.860	6.330	8.021	-7.657	2.654	-2.533
101	5.241	5.678	6.135	8.055	-7.686	2.678	-2.555
102	5.078	5.502	5.947	8.089	-7.715	2.702	-2.577

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103	4.920	5.333	5.766	8.123	-7.744	2.727	-2.599
104	4.767	5.169	5.591	8.157	-7.773	2.751	-2.622
105	4.620	5.011	5.421	8.190	-7.801	2.776	-2.644
106	4.477	4.858	5.257	8.224	-7.830	2.800	-2.666
107	4.340	4.710	5.099	8.257	-7.858	2.825	-2.689
108	4.207	4.567	4.946	8.291	-7.887	2.850	-2.711
109	4.078	4.429	4.798	8.324	-7.915	2.875	-2.734
110	3.954	4.295	4.654	8.357	-7.943	2.900	-2.756
111	3.834	4.166	4.516	8.390	-7.971	2.925	-2.779
112	3.718	4.041	4.382	8.423	-7.999	2.950	-2.802
113	3.606	3.920	4.252	8.456	-8.027	2.975	-2.824
114	3.497	3.803	4.126	8.489	-8.055	3.001	-2.847
115	3.392	3.690	4.004	8.522	-8.083	3.026	-2.870
116	3.290	3.580	3.887	8.554	-8.111	3.051	-2.893
117	3.191	3.474	3.773	8.587	-8.138	3.077	-2.916
118	3.096	3.371	3.662	8.620	-8.166	3.102	-2.939
119	3.004	3.272	3.555	8.652	-8.193	3.128	-2.962
120	2.914	3.175	3.451	8.685	-8.221	3.154	-2.985
121	2.828	3.082	3.351	8.717	-8.248	3.179	-3.008
122	2.744	2.992	3.253	8.750	-8.275	3.205	-3.031
123	2.663	2.904	3.159	8.782	-8.303	3.231	-3.055
124	2.584	2.819	3.067	8.814	-8.330	3.257	-3.078
125	2.508	2.737	2.979	8.847	-8.357	3.283	-3.101



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