Temperature Measurement NTC Thermistor

RND components

Features

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Applications

- [illegible]
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PART NUMBER

Example: RND 155MF52A2 152J3470

RND 155MF52A2	152	J	3470
Type	Zero Power Resistance @ 25 ℃	Tolerance	B Constant
	152 = 1.5 kΩ	F = ± 1%	3470 = 3470 K
		G = ± 2%	3950 = 3950 K
		H = ± 3%	4100 = 4100 K
		J = ±5 %	4500 = 4500 K

Electrical Characteristics

	Item	Symbol	Test conditions	Unit	Specification
1.1	Zero Power Resistance at 25℃	R25	Ta=25±0.05℃Test Power≤0.1mW	KΩ	1.5±5%
1.2	B-value	B25/50	B=[(Ta×Tb)/(Tb-Ta)]×ln(Ra/Rb) Tb=50℃±0.01℃	K	3470±1%
1.3	Thermal dissipation Coefficient	δ	In still air	mW/℃	≥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	/	/	℃	-55℃ ～ 125℃
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℃ for 2-3sec	coverage area ≥ 95%.
2.3	Welding heat resistant	Tin pan temperature: 260℃ ±5℃, 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℃±2℃， Humidity： 93±2%， Time ： 500hrs	R25 ΔR/R≤±2%，
2.5	Rapid changes in temperature	-55℃30min→25℃5min→125℃30min→25℃5min，5cycles	R25 ΔR/R≤±2%
2.6	High temperature storage	Temp : 125℃±5℃, Time :1000hrs	R25 ΔR/R≤±2%
2.7	Low temperature storage	Temp : -55℃, Time :1000hrs	R25 ΔR/R≤±2%

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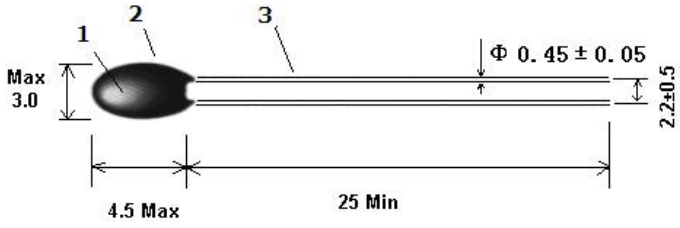
Caution

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℃, and time＜3 secs,
3.4 Storage temp: -10℃～40℃；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 ℃/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=1.5KΩ TOLERANCE:±5% B25/50=3470K TOLERANCE:±1% P234-20							
TEMP(℃)	RESISTANCE(KΩ)			RESIST-TOL(%)		TEMP-TOL(℃)	
	MIN	CENTER	MAX	△R	-△R	△T	-△T
-55	59.287	64.803	70.654	9.029	-8.511	1.403	-1.322
-54	55.570	60.700	66.137	8.958	-8.451	1.405	-1.326
-53	52.156	56.934	61.995	8.888	-8.392	1.407	-1.329
-52	49.010	53.466	58.182	8.820	-8.334	1.409	-1.332
-51	46.103	50.264	54.663	8.752	-8.278	1.411	-1.334
-50	43.409	47.298	51.407	8.686	-8.222	1.412	-1.337
-49	40.907	44.546	48.386	8.621	-8.167	1.414	-1.339
-48	38.579	41.986	45.578	8.557	-8.113	1.415	-1.342
-47	36.408	39.600	42.963	8.493	-8.059	1.417	-1.344
-46	34.380	37.373	40.524	8.431	-8.006	1.418	-1.346
-45	32.484	35.291	38.244	8.368	-7.953	1.419	-1.348
-44	30.708	33.342	36.112	8.307	-7.901	1.420	-1.351
-43	29.043	31.516	34.115	8.246	-7.849	1.421	-1.353
-42	27.480	29.804	32.244	8.186	-7.797	1.422	-1.355
-41	26.012	28.196	30.488	8.126	-7.746	1.423	-1.356
-40	24.632	26.686	28.839	8.066	-7.695	1.424	-1.358
-39	23.335	25.266	27.290	8.007	-7.645	1.425	-1.360
-38	22.113	23.931	25.833	7.948	-7.595	1.425	-1.362
-37	20.964	22.675	24.464	7.890	-7.545	1.426	-1.364
-36	19.881	21.492	23.175	7.832	-7.495	1.427	-1.366
-35	18.860	20.378	21.962	7.775	-7.446	1.428	-1.367
-34	17.898	19.328	20.820	7.718	-7.397	1.429	-1.369
-33	16.991	18.339	19.744	7.661	-7.348	1.429	-1.371
-32	16.136	17.407	18.731	7.605	-7.300	1.430	-1.372
-31	15.329	16.527	17.775	7.550	-7.252	1.431	-1.374
-30	14.567	15.698	16.875	7.494	-7.204	1.431	-1.376
-29	13.848	14.916	16.026	7.439	-7.157	1.432	-1.377
-28	13.169	14.178	15.225	7.385	-7.110	1.432	-1.379
-27	12.528	13.481	14.469	7.331	-7.063	1.433	-1.380

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-26	11.923	12.823	13.756	7.277	-7.016	1.433	-1.382
-25	11.351	12.201	13.083	7.224	-6.970	1.434	-1.383
-24	10.810	11.614	12.447	7.171	-6.924	1.434	-1.385
-23	10.299	11.059	11.847	7.118	-6.879	1.434	-1.386
-22	9.815	10.535	11.280	7.066	-6.833	1.435	-1.387
-21	9.358	10.039	10.744	7.015	-6.788	1.435	-1.389
-20	8.925	9.570	10.237	6.964	-6.744	1.435	-1.390
-19	8.515	9.127	9.758	6.913	-6.700	1.435	-1.391
-18	8.127	8.707	9.304	6.862	-6.656	1.435	-1.392
-17	7.760	8.309	8.875	6.813	-6.612	1.436	-1.393
-16	7.411	7.933	8.469	6.763	-6.569	1.435	-1.394
-15	7.081	7.576	8.084	6.714	-6.526	1.435	-1.395
-14	6.768	7.237	7.720	6.665	-6.483	1.435	-1.396
-13	6.471	6.917	7.375	6.617	-6.441	1.435	-1.397
-12	6.189	6.613	7.047	6.569	-6.398	1.435	-1.397
-11	5.922	6.324	6.736	6.521	-6.357	1.434	-1.398
-10	5.668	6.050	6.441	6.474	-6.315	1.434	-1.398
-9	5.426	5.789	6.162	6.427	-6.274	1.433	-1.399
-8	5.197	5.542	5.896	6.381	-6.233	1.432	-1.399
-7	4.978	5.307	5.643	6.335	-6.192	1.432	-1.399
-6	4.770	5.083	5.403	6.289	-6.152	1.431	-1.400
-5	4.573	4.870	5.175	6.244	-6.112	1.430	-1.400
-4	4.384	4.668	4.957	6.198	-6.072	1.429	-1.400
-3	4.205	4.475	4.751	6.154	-6.032	1.428	-1.400
-2	4.034	4.291	4.554	6.109	-5.993	1.427	-1.399
-1	3.871	4.116	4.366	6.065	-5.954	1.425	-1.399
0	3.701	3.934	4.171	6.017	-5.911	1.429	-1.404
1	3.567	3.790	4.017	5.977	-5.876	1.423	-1.398
2	3.426	3.638	3.854	5.934	-5.838	1.421	-1.398
3	3.290	3.493	3.699	5.891	-5.799	1.419	-1.397
4	3.161	3.355	3.551	5.848	-5.761	1.418	-1.397
5	3.038	3.222	3.409	5.806	-5.723	1.416	-1.396
6	2.920	3.096	3.274	5.763	-5.685	1.414	-1.395
7	2.807	2.975	3.145	5.721	-5.648	1.413	-1.394
8	2.699	2.859	3.021	5.679	-5.610	1.411	-1.394
9	2.595	2.748	2.903	5.637	-5.573	1.409	-1.393
10	2.496	2.643	2.790	5.596	-5.536	1.407	-1.392
11	2.401	2.541	2.682	5.555	-5.499	1.405	-1.391
12	2.310	2.444	2.579	5.514	-5.462	1.403	-1.390
13	2.223	2.351	2.480	5.473	-5.426	1.402	-1.390
14	2.140	2.262	2.385	5.432	-5.389	1.400	-1.389
15	2.060	2.176	2.294	5.391	-5.353	1.399	-1.389
16	1.983	2.095	2.207	5.351	-5.316	1.398	-1.389

17	1.909	2.016	2.123	5.311	-5.280	1.397	-1.389
18	1.839	1.941	2.043	5.271	-5.244	1.397	-1.390
19	1.771	1.868	1.966	5.231	-5.208	1.398	-1.392
20	1.706	1.799	1.892	5.191	-5.172	1.402	-1.397
21	1.643	1.732	1.822	5.151	-5.137	1.408	-1.404
22	1.583	1.668	1.754	5.112	-5.101	1.422	-1.419
23	1.526	1.607	1.689	5.072	-5.065	1.454	-1.452
24	1.470	1.548	1.626	5.033	-5.030	1.570	-1.569
25	1.424	1.500	1.575	5.000	-5.000	1.570	-1.570
26	1.365	1.437	1.510	5.044	-5.040	1.193	-1.192
27	1.315	1.385	1.455	5.083	-5.075	1.288	-1.286
28	1.267	1.335	1.403	5.122	-5.110	1.334	-1.331
29	1.220	1.287	1.353	5.160	-5.145	1.366	-1.362
30	1.176	1.240	1.305	5.199	-5.180	1.392	-1.387
31	1.133	1.196	1.258	5.237	-5.214	1.416	-1.409
32	1.092	1.153	1.214	5.276	-5.249	1.438	-1.430
33	1.053	1.112	1.171	5.314	-5.283	1.459	-1.450
34	1.015	1.072	1.129	5.352	-5.318	1.479	-1.469
35	0.979	1.034	1.090	5.390	-5.352	1.499	-1.488
36	0.944	0.997	1.052	5.428	-5.386	1.519	-1.507
37	0.910	0.962	1.015	5.466	-5.420	1.538	-1.525
38	0.878	0.928	0.979	5.504	-5.454	1.558	-1.543
39	0.847	0.896	0.945	5.542	-5.487	1.577	-1.561
40	0.817	0.864	0.913	5.579	-5.521	1.596	-1.580
41	0.788	0.834	0.881	5.617	-5.555	1.616	-1.598
42	0.760	0.805	0.851	5.654	-5.588	1.635	-1.616
43	0.734	0.778	0.822	5.691	-5.621	1.654	-1.634
44	0.708	0.751	0.794	5.728	-5.654	1.674	-1.652
45	0.684	0.725	0.767	5.765	-5.687	1.693	-1.670
46	0.660	0.700	0.741	5.802	-5.720	1.713	-1.689
47	0.637	0.676	0.716	5.838	-5.753	1.733	-1.707
48	0.616	0.653	0.692	5.875	-5.785	1.752	-1.726
49	0.594	0.631	0.669	5.911	-5.817	1.772	-1.744
50	0.574	0.610	0.646	5.948	-5.850	1.792	-1.763
51	0.555	0.590	0.625	5.984	-5.882	1.813	-1.782
52	0.536	0.570	0.604	6.020	-5.914	1.833	-1.800
53	0.518	0.551	0.584	6.055	-5.945	1.853	-1.819
54	0.501	0.533	0.565	6.091	-5.977	1.874	-1.839
55	0.484	0.515	0.547	6.127	-6.008	1.894	-1.858
56	0.468	0.498	0.529	6.162	-6.040	1.915	-1.877
57	0.453	0.482	0.512	6.197	-6.071	1.936	-1.896
58	0.438	0.466	0.496	6.232	-6.102	1.957	-1.916
59	0.424	0.451	0.480	6.267	-6.133	1.978	-1.936

60	0.410	0.437	0.464	6.302	-6.163	1.999	-1.955
61	0.397	0.423	0.450	6.336	-6.194	2.021	-1.975
62	0.384	0.409	0.436	6.370	-6.224	2.042	-1.995
63	0.372	0.397	0.422	6.404	-6.254	2.064	-2.015
64	0.360	0.384	0.409	6.438	-6.284	2.086	-2.036
65	0.349	0.372	0.396	6.472	-6.313	2.108	-2.056
66	0.338	0.361	0.384	6.506	-6.343	2.130	-2.077
67	0.327	0.349	0.372	6.539	-6.372	2.152	-2.097
68	0.317	0.339	0.361	6.572	-6.401	2.175	-2.118
69	0.307	0.328	0.350	6.605	-6.430	2.197	-2.139
70	0.298	0.318	0.340	6.638	-6.459	2.220	-2.160
71	0.289	0.309	0.329	6.671	-6.488	2.243	-2.181
72	0.280	0.299	0.320	6.703	-6.516	2.266	-2.203
73	0.272	0.291	0.310	6.735	-6.544	2.289	-2.224
74	0.263	0.282	0.301	6.767	-6.573	2.312	-2.245
75	0.256	0.274	0.292	6.799	-6.600	2.335	-2.267
76	0.248	0.266	0.284	6.831	-6.628	2.359	-2.289
77	0.241	0.258	0.276	6.862	-6.656	2.383	-2.311
78	0.234	0.250	0.268	6.894	-6.683	2.406	-2.333
79	0.227	0.243	0.260	6.925	-6.710	2.430	-2.355
80	0.220	0.236	0.253	6.956	-6.737	2.455	-2.377
81	0.214	0.230	0.246	6.986	-6.764	2.479	-2.400
82	0.208	0.223	0.239	7.017	-6.790	2.503	-2.422
83	0.202	0.217	0.232	7.047	-6.817	2.528	-2.445
84	0.196	0.211	0.226	7.078	-6.843	2.552	-2.468
85	0.191	0.205	0.220	7.108	-6.869	2.577	-2.490
86	0.186	0.199	0.214	7.137	-6.895	2.602	-2.513
87	0.180	0.194	0.208	7.167	-6.921	2.627	-2.536
88	0.175	0.189	0.202	7.197	-6.947	2.652	-2.559
89	0.171	0.183	0.197	7.226	-6.972	2.677	-2.583
90	0.166	0.179	0.192	7.255	-6.998	2.702	-2.606
91	0.162	0.174	0.186	7.284	-7.023	2.727	-2.629
92	0.157	0.169	0.182	7.313	-7.048	2.753	-2.653
93	0.153	0.165	0.177	7.342	-7.073	2.778	-2.676
94	0.149	0.160	0.172	7.371	-7.098	2.804	-2.700
95	0.145	0.156	0.168	7.399	-7.122	2.830	-2.724
96	0.141	0.152	0.163	7.428	-7.147	2.856	-2.748
97	0.137	0.148	0.159	7.456	-7.171	2.881	-2.771
98	0.134	0.144	0.155	7.484	-7.196	2.907	-2.795
99	0.130	0.140	0.151	7.513	-7.220	2.933	-2.819
100	0.127	0.137	0.147	7.541	-7.244	2.960	-2.843
101	0.124	0.133	0.143	7.569	-7.269	2.986	-2.867
102	0.120	0.130	0.140	7.597	-7.293	3.012	-2.891

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103	0.117	0.126	0.136	7.625	-7.317	3.038	-2.915
104	0.114	0.123	0.133	7.653	-7.341	3.064	-2.940
105	0.111	0.120	0.129	7.680	-7.365	3.091	-2.964
106	0.108	0.117	0.126	7.708	-7.389	3.117	-2.988
107	0.106	0.114	0.123	7.736	-7.412	3.143	-3.012
108	0.103	0.111	0.120	7.764	-7.436	3.170	-3.036
109	0.100	0.108	0.117	7.792	-7.460	3.196	-3.060
110	0.098	0.105	0.114	7.819	-7.484	3.223	-3.084
111	0.095	0.103	0.111	7.847	-7.508	3.249	-3.109
112	0.093	0.100	0.108	7.875	-7.532	3.275	-3.133
113	0.090	0.098	0.105	7.903	-7.556	3.302	-3.157
114	0.088	0.095	0.103	7.931	-7.580	3.328	-3.181
115	0.085	0.093	0.100	7.959	-7.604	3.355	-3.205
116	0.083	0.090	0.097	7.987	-7.628	3.381	-3.229
117	0.081	0.088	0.095	8.016	-7.652	3.407	-3.253
118	0.079	0.086	0.092	8.044	-7.677	3.433	-3.276
119	0.077	0.083	0.090	8.073	-7.701	3.459	-3.300
120	0.075	0.081	0.088	8.102	-7.726	3.485	-3.324
121	0.073	0.079	0.085	8.130	-7.750	3.511	-3.347
122	0.071	0.077	0.083	8.160	-7.775	3.537	-3.371
123	0.069	0.075	0.081	8.189	-7.800	3.563	-3.394
124	0.067	0.073	0.079	8.218	-7.825	3.589	-3.417
125	0.065	0.071	0.077	8.248	-7.851	3.615	-3.440