



Specifications Approval Sheet

CUSTOMER: _____

CUSTOMER P/N: _____

PART NAME: _____ Glass-sealed Radial Type Thermistor _____

PART NUMBER: _____ GT103F3435B-R _____

DATE: _____

Manufacturer:

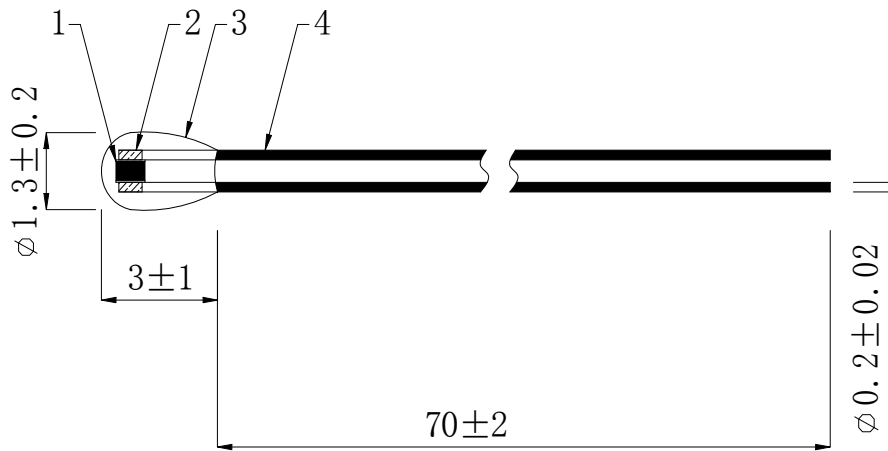
Draft	Check	Approval

For Customer Approval:

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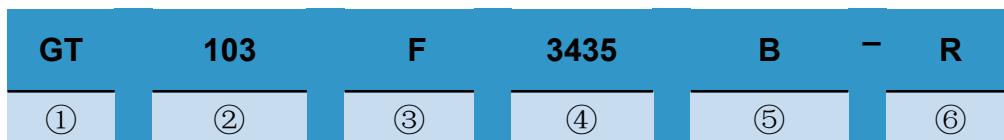
1. Structure, Dimensions & Materials

mm



No	Material	Specification
1	Chip	R25=10k $\Omega \pm 1\%$ B(25/85)=3435K $\pm 1\%$
2	Silver paste	Silver
3	Glass Tube	Glass
4	Lead Wire	Dumet Wire

2. Part Number Identification



① Product Series Code		② Resistance @ ④		③ Resistance tolerance		④ Test Temp. of Resistance		⑤ Test Temp. of B-value		⑥ Outline
GT	GT Series of Thermistors	103	10K Ω	F	1%	3435	3435K	B	25/85	R: radial type

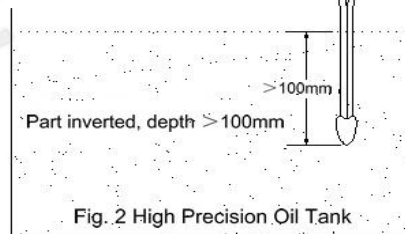
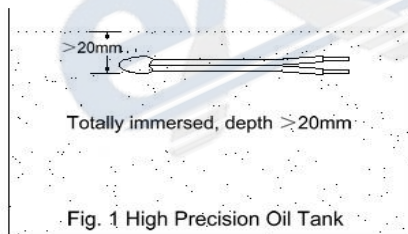
3、 Electronic Parameter Specification

No	Item	Symbol	Test condition	Min	Nor	Max	Unit
(1)	Resistance @25°C	R	Ta= 25 °C PT≦0.1mw	9.9	10	10.1	KΩ
(2)	B-value	B _{25/85}	$B=LN \frac{R_{T1}}{R_{T2}} / (\frac{1}{T1} - \frac{1}{T2})$	3400.65	3435	3469.35	K
(3)	Dissipation factor	δ	Ta=25±0.5°C	1.2	/	/	mw/°C
(4)	Thermal time constant	τ	Ta=25±0.5°C	/	/	1.5	Sec
(5)	Rated power	/	Ta=25±0.5°C	/	/	60	mW
(6)	Operating temp. range	/	/	-40	/	+250	°C

Note: Test condition:

(1). Resistance @25°C:

Place the product in the 25°C±0.05°C high precision thermostatic oil tank, test it after 10 min



(2). Beta Value:

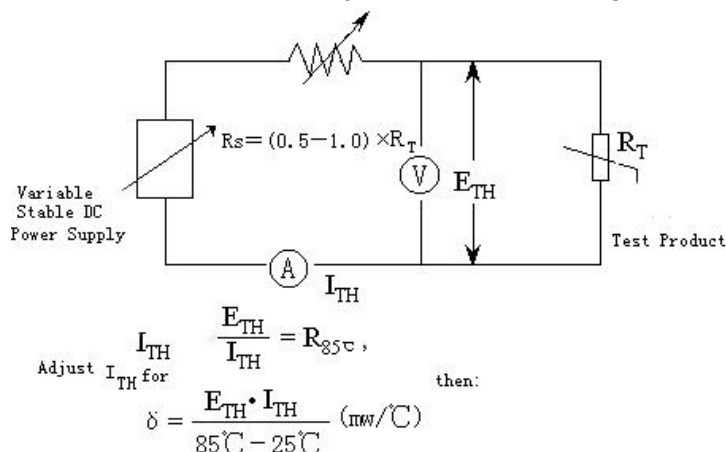
Test equipment: High precision thermostatic oil tank

According to the part number, test the resistance at T1 and T2.

In the oil tank, test the resistance value of 25±0.05°C and 85±0.05°C. B-value is an index of the thermal sensitivity expressed by the formula:

$$B_{t1/t2} = \ln(R_{t1}/R_{t2}) / (1/(t1+273.15) - 1/(t2+273.15))$$

(3).Dissipation Factor (δ): The product will be join with the following circuit at 25±0.5°C in still air.



(4). Thermal Time Constant (τ):

Test equipment: $25 \pm 0.5^\circ\text{C}$ thermostatic water tank & $85 \pm 0.5^\circ\text{C}$ thermostatic water tank

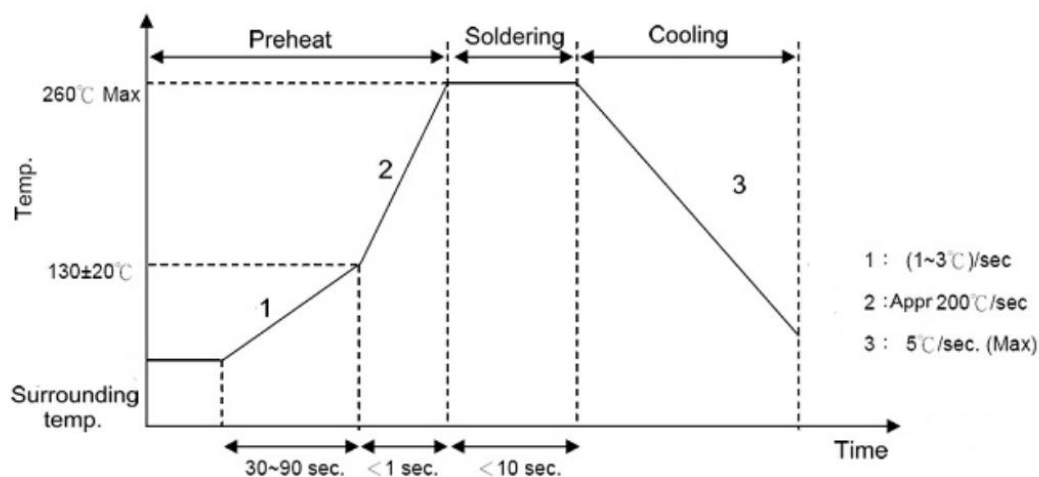
Connect the product to the resistance meter, place it in the 25°C water until the resistance become stable, and then move it to 85°C water from 25°C water, in the meanwhile, set off the timer when the product be take out of the 25°C water tank, once the product rise to the temperature which is 63.2% of the temperature difference, timer should be stopped, this time period represents the thermal time constant.

4、 Reliability Characteristics

No	Item	Requirement	Testing method and condition
5-1	High temp test	R/R $25 \pm 1.2\%$ B/B $\pm 1.2\%$	$250 \pm 5^\circ\text{C}$ in air for 1000 hrs, stay at room temp. for 1hrs.
5-2	Low temp test	R/R $25 \pm 1.2\%$ B/B $\pm 1.2\%$	$-40 \pm 5^\circ\text{C}$ in air for 1000 hrs, stay at room temp. for 1hrs.
5-3	Temperature cycle	R/R $25 \pm 1.2\%$ B/B $\pm 1.2\%$	$-30^\circ\text{C} \times 1\text{hrs} \rightarrow \text{Room temp.} \times 30\text{mins} \rightarrow 150^\circ\text{C} \times 1\text{hrs}$, stay at room temp. for 1hrs.
5-4	Lead wire strength tensile	R/R $25 \pm 1.2\%$ B/B $\pm 1.2\%$	Apply 5N force to the lead wire for 30 Sec

5、 Recommended welding conditions

(1). Wave soldering curve



(2). Soldering iron manual welding condition

Item	Condition
Temperature of iron tip	360°C (max)
weld time	3 Sec (max)
Distance between welding position and packaging layer	2mm (min)

6、 Storage & Packing method

- (1) The height of each pile should be no more than 4 levels during storage and transportation
- (2) Put desiccant in each packing bag; Protect it from the rain, snow and mechanical damage
- (3) ROHS label should be placed in the each packing bag and self-adhesive label should be pasted outside
- (4) . Should not close to the acidoid, alkali and corrosion gas or radioactive source.

Storage temperature: 15°C~40°C, working humidity ≤75%

6、R-T Table

Part No.: GT103F3435B-R

R25=10kΩ±1%

B(25/85)=3435K±1%

Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)	Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)
-40	198.9	207.1	215.6	-3	31.05	31.73	32.42
-39	188.0	195.6	203.5	-2	29.71	30.34	30.99
-38	177.7	184.8	192.2	-1	28.43	29.02	29.63
-37	168.1	174.7	181.5	0	27.21	27.77	28.34
-36	159.0	165.2	171.6	1	26.05	26.57	27.10
-35	150.5	156.2	162.2	2	24.95	25.44	25.93
-34	142.5	147.9	153.4	3	23.90	24.36	24.82
-33	135.0	140.0	145.2	4	22.90	23.33	23.76
-32	127.9	132.6	137.4	5	21.95	22.35	22.75
-31	121.2	125.6	130.1	6	21.04	21.41	21.79
-30	114.9	119.0	123.2	7	20.18	20.53	20.88
-29	109.0	112.8	116.8	8	19.35	19.68	20.01
-28	103.5	107.0	110.7	9	18.57	18.87	19.18
-27	98.22	101.5	105.0	10	17.82	18.11	18.40
-26	93.27	96.37	99.56	11	17.10	17.37	17.64
-25	88.60	91.49	94.48	12	16.42	16.67	16.93
-24	84.19	86.90	89.69	13	15.77	16.01	16.24
-23	80.03	82.56	85.17	14	15.15	15.37	15.59
-22	76.10	78.47	80.90	15	14.56	14.76	14.97
-21	72.39	74.60	76.88	16	13.99	14.19	14.38
-20	68.88	70.95	73.08	17	13.45	13.63	13.81
-19	65.56	67.50	69.49	18	12.94	13.10	13.27
-18	62.43	64.24	66.10	19	12.44	12.60	12.75
-17	59.46	61.16	62.90	20	11.97	12.12	12.26
-16	56.65	58.24	59.87	21	11.52	11.65	11.79
-15	53.99	55.48	57.00	22	11.09	11.21	11.34
-14	51.48	52.87	54.29	23	10.67	10.79	10.91
-13	49.09	50.40	51.73	24	10.28	10.39	10.49
-12	46.83	48.05	49.30	25	9.900	10.00	10.10
-11	44.69	45.83	47.00	26	9.533	9.633	9.733
-10	42.66	43.73	44.82	27	9.182	9.282	9.382
-9	40.73	41.73	42.76	28	8.846	8.945	9.045
-8	38.90	39.84	40.80	29	8.524	8.623	8.722
-7	37.16	38.04	38.94	30	8.215	8.313	8.412
-6	35.52	36.34	37.18	31	7.919	8.017	8.115
-5	33.95	34.72	35.51	32	7.635	7.732	7.830
-4	32.46	33.19	33.92	33	7.363	7.460	7.556



Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)	Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)
34	7.103	7.198	7.294	73	1.992	2.045	2.098
35	6.852	6.947	7.042	74	1.934	1.986	2.038
36	6.612	6.706	6.800	75	1.878	1.928	1.980
37	6.382	6.474	6.568	76	1.824	1.873	1.924
38	6.161	6.252	6.344	77	1.771	1.820	1.870
39	5.948	6.039	6.130	78	1.720	1.768	1.817
40	5.744	5.834	5.924	79	1.671	1.718	1.766
41	5.548	5.637	5.726	80	1.624	1.670	1.717
42	5.360	5.447	5.535	81	1.578	1.623	1.670
43	5.179	5.265	5.352	82	1.534	1.578	1.624
44	5.006	5.090	5.176	83	1.491	1.535	1.579
45	4.838	4.922	5.007	84	1.449	1.492	1.536
46	4.678	4.760	4.844	85	1.409	1.451	1.494
47	4.523	4.605	4.687	86	1.370	1.411	1.454
48	4.375	4.455	4.536	87	1.333	1.373	1.415
49	4.232	4.311	4.391	88	1.296	1.336	1.376
50	4.094	4.172	4.251	89	1.260	1.299	1.340
51	3.962	4.038	4.116	90	1.226	1.264	1.304
52	3.834	3.909	3.985	91	1.193	1.230	1.269
53	3.710	3.785	3.860	92	1.161	1.197	1.235
54	3.592	3.665	3.739	93	1.129	1.165	1.203
55	3.477	3.549	3.622	94	1.099	1.134	1.171
56	3.367	3.438	3.509	95	1.070	1.104	1.140
57	3.261	3.330	3.401	96	1.041	1.075	1.111
58	3.159	3.227	3.296	97	1.013	1.047	1.082
59	3.060	3.127	3.195	98	0.987	1.020	1.054
60	2.965	3.031	3.098	99	0.961	0.993	1.026
61	2.873	2.938	3.004	100	0.935	0.967	1.000
62	2.785	2.848	2.913	101	0.911	0.942	0.974
63	2.699	2.762	2.825	102	0.887	0.917	0.949
64	2.617	2.678	2.741	103	0.863	0.893	0.924
65	2.537	2.598	2.659	104	0.841	0.870	0.901
66	2.460	2.520	2.580	105	0.819	0.848	0.878
67	2.386	2.445	2.504	106	0.798	0.826	0.855
68	2.315	2.372	2.431	107	0.777	0.805	0.834
69	2.246	2.302	2.359	108	0.757	0.784	0.813
70	2.179	2.234	2.291	109	0.737	0.764	0.792
71	2.115	2.169	2.224	110	0.719	0.745	0.772
72	2.052	2.106	2.160	111	0.700	0.726	0.753



Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)	Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)
112	0.682	0.708	0.734	151	0.269	0.282	0.295
113	0.665	0.690	0.716	152	0.264	0.276	0.289
114	0.648	0.673	0.698	153	0.258	0.270	0.283
115	0.632	0.656	0.681	154	0.252	0.264	0.277
116	0.616	0.640	0.664	155	0.247	0.259	0.271
117	0.601	0.624	0.648	156	0.242	0.253	0.265
118	0.586	0.609	0.632	157	0.236	0.248	0.260
119	0.571	0.594	0.617	158	0.231	0.243	0.254
120	0.557	0.579	0.602	159	0.227	0.238	0.249
121	0.544	0.565	0.587	160	0.222	0.233	0.244
122	0.530	0.551	0.573	161	0.217	0.228	0.239
123	0.517	0.538	0.559	162	0.213	0.223	0.234
124	0.505	0.525	0.546	163	0.208	0.218	0.229
125	0.492	0.512	0.533	164	0.204	0.214	0.225
126	0.481	0.500	0.521	165	0.200	0.210	0.220
127	0.469	0.488	0.508	166	0.196	0.205	0.216
128	0.458	0.477	0.496	167	0.192	0.201	0.211
129	0.447	0.466	0.485	168	0.188	0.197	0.207
130	0.436	0.455	0.474	169	0.184	0.193	0.203
131	0.426	0.444	0.463	170	0.180	0.189	0.199
132	0.416	0.434	0.452	171	0.177	0.186	0.195
133	0.406	0.424	0.442	172	0.173	0.182	0.191
134	0.397	0.414	0.431	173	0.170	0.178	0.187
135	0.388	0.404	0.422	174	0.166	0.175	0.184
136	0.379	0.395	0.412	175	0.163	0.171	0.180
137	0.370	0.386	0.403	176	0.160	0.168	0.177
138	0.361	0.377	0.394	177	0.157	0.165	0.173
139	0.353	0.369	0.385	178	0.153	0.162	0.170
140	0.345	0.360	0.376	179	0.150	0.158	0.167
141	0.337	0.352	0.368	180	0.148	0.155	0.164
142	0.330	0.344	0.360	181	0.145	0.152	0.161
143	0.322	0.337	0.352	182	0.142	0.150	0.158
144	0.315	0.329	0.344	183	0.139	0.147	0.155
145	0.308	0.322	0.336	184	0.137	0.144	0.152
146	0.301	0.315	0.329	185	0.134	0.141	0.149
147	0.294	0.308	0.322	186	0.131	0.139	0.146
148	0.288	0.301	0.315	187	0.129	0.136	0.143
149	0.282	0.295	0.308	188	0.127	0.133	0.141
150	0.275	0.288	0.302	189	0.124	0.131	0.138



Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)	Temp(°C)	R _{min} (KΩ)	R _{nor} (KΩ)	R _{max} (KΩ)
190	0.122	0.129	0.136	221	0.070	0.075	0.079
191	0.120	0.126	0.133	222	0.069	0.073	0.078
192	0.117	0.124	0.131	223	0.068	0.072	0.077
193	0.115	0.122	0.128	224	0.067	0.071	0.075
194	0.113	0.119	0.126	225	0.066	0.070	0.074
195	0.111	0.117	0.124	226	0.065	0.069	0.073
196	0.109	0.115	0.122	227	0.064	0.068	0.072
197	0.107	0.113	0.120	228	0.063	0.067	0.071
198	0.105	0.111	0.117	229	0.062	0.066	0.070
199	0.103	0.109	0.115	230	0.061	0.064	0.069
200	0.101	0.107	0.113	231	0.060	0.063	0.067
201	0.100	0.105	0.111	232	0.059	0.062	0.066
202	0.098	0.103	0.109	233	0.058	0.061	0.065
203	0.096	0.102	0.107	234	0.057	0.061	0.064
204	0.094	0.100	0.106	235	0.056	0.060	0.063
205	0.093	0.098	0.104	236	0.055	0.059	0.062
206	0.091	0.096	0.102	237	0.054	0.058	0.061
207	0.090	0.095	0.100	238	0.053	0.057	0.060
208	0.088	0.093	0.099	239	0.053	0.056	0.060
209	0.086	0.091	0.097	240	0.052	0.055	0.059
210	0.085	0.090	0.095	241	0.051	0.054	0.058
211	0.083	0.088	0.094	242	0.050	0.053	0.057
212	0.082	0.087	0.092	243	0.049	0.053	0.056
213	0.081	0.085	0.090	244	0.049	0.052	0.055
214	0.079	0.084	0.089	245	0.048	0.051	0.054
215	0.078	0.083	0.087	246	0.047	0.050	0.054
216	0.077	0.081	0.086	247	0.047	0.050	0.053
217	0.075	0.080	0.085	248	0.046	0.049	0.052
218	0.074	0.078	0.083	249	0.045	0.048	0.051
219	0.073	0.077	0.082	250	0.044	0.047	0.051
220	0.072	0.076	0.080				