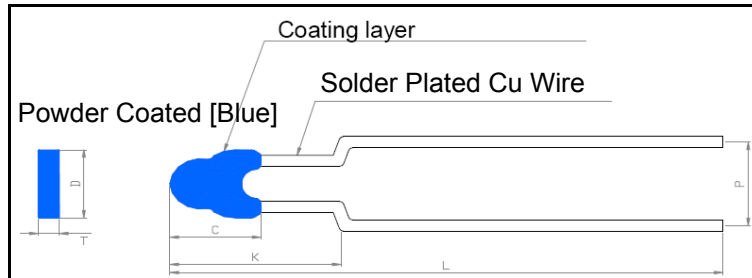


Technical Data

103F-AT-2-3435FA NTC Thermistor Specifications

1 Part Number **103F-AT-2-3435FA**

2 Dimensions



C	D	K	L	P	T	d
5.0max	4.0max	6.5max	32 ± 1	2	3.0max	0.45

3 Rating

- a) Rated zero-power resistance. $R (25^{\circ}\text{C}) = 10 \text{ K}\Omega \pm 1\%$
- b) B constant $B (25/85^{\circ}\text{C}) \quad 3435 \pm 1\%$
 $B (25/50^{\circ}\text{C}) \quad 3370 \pm 1\%$

The B constant is calculated using the zero-power resistance values measured at 25°C and 50°C

- c) Dissipation constant : 1.0 mW / °C Min. (in still air)
- d) Thermal time constant : Approx. 10 sec. (in still air)
- e) Operating temperature : -40°C to +120°C
- f) Power consumption : 5 mW (max.)

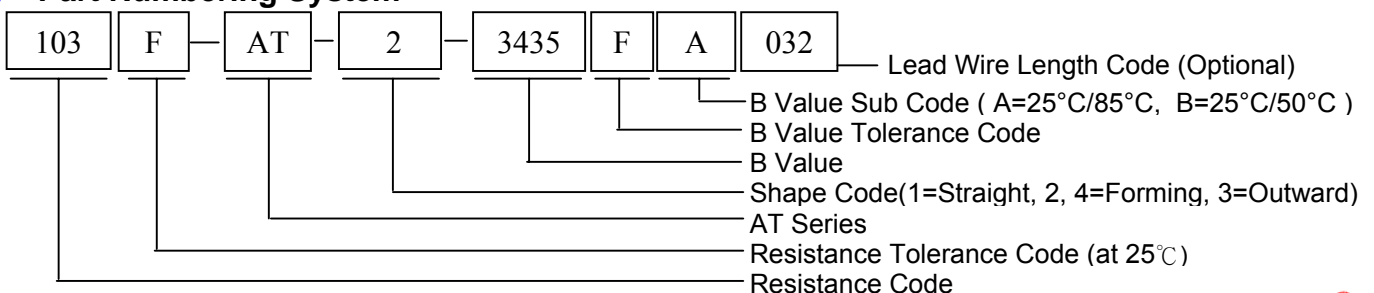
4 Reliability

- a) High Temperature Aging Test (HTAT)
Elements are placed in a chamber of temperature at 110°C ± 5°C for 1,000 hours. Drift of electric characteristics (R25, B25/85) after HTAT are less than ±1%
- b) Low Temperature Aging Test (LTAT)
Elements are placed in an oil bath of temperature at -30°C ± 5°C for 1,000 hours. Drift of electric characteristics (R25, B25/85) after LTAT are less than ±1%
- c) Heat Cycling Test (HCT)
Elements are dipped into an oil bath of temperature at -30°C for 5 minute and then dipped into another bath of temperature at 90°C for 5 minute. Drift of the characteristics (R25, B25/85), after 1,000 times of HCT, are less than ±1%
- d) High Temperature Aging Test at DC 5V
Elements are placed in atmosphere of 110°C ± 5°C at DC 5V for 1,000 hours. Drift of electric characteristics (R25, B25/85) after test are less than ±1%

5 Soldering

- a) Solderability
Terminals shall be immersed into solder bath up to 2.5mm from the body at 255°C ± 5°C for 5 ± 0.5 seconds. More than 90% of its terminals shall be covered with solder.
- b) Resistance to soldering heat
After lead wires are immersed into solder bath up to 2.5mm from the body at 375°C ± 5°C for 3.5 ± 0.5 seconds, the change ratio of R25 shall be within ±1% of the initial value.

6 Part Numbering System



* All coding please see Coding page

Technical Data

103F-AT-2-3435FA NTC Thermistor Specifications

7 R / T table for 103F-AT-2-3435FA

Temperature °C	Minimum (KΩ)	Center (KΩ)	Maximum (KΩ)	Res. Tolerance (%)		Tolerance (°C)	
				ΔR (%)	-ΔR (%)	Max	Min
-40	184.74	192.20	199.95	4.03	-3.88	0.76	-0.73
-39	175.03	182.00	189.23	3.97	-3.83	0.76	-0.73
-38	165.98	172.50	179.26	3.92	-3.78	0.75	-0.72
-37	157.40	163.50	169.81	3.86	-3.73	0.74	-0.72
-36	149.30	155.00	160.90	3.81	-3.68	0.74	-0.71
-35	141.67	147.00	152.51	3.75	-3.63	0.74	-0.71
-34	134.51	139.50	144.66	3.70	-3.58	0.72	-0.69
-33	127.64	132.30	137.12	3.64	-3.52	0.72	-0.70
-32	121.24	125.60	130.11	3.59	-3.47	0.72	-0.69
-31	115.22	119.30	123.52	3.54	-3.42	0.70	-0.68
-30	109.48	113.30	117.24	3.48	-3.37	0.69	-0.67
-29	104.02	107.60	111.29	3.43	-3.32	0.68	-0.66
-28	98.85	102.20	105.65	3.38	-3.27	0.68	-0.66
-27	94.03	97.16	100.39	3.32	-3.23	0.67	-0.65
-26	89.44	92.37	95.39	3.27	-3.18	0.67	-0.65
-25	85.09	87.84	90.67	3.22	-3.13	0.66	-0.64
-24	80.99	83.56	86.21	3.17	-3.08	0.65	-0.64
-23	77.10	79.51	81.99	3.12	-3.03	0.65	-0.63
-22	73.42	75.68	78.00	3.06	-2.98	0.64	-0.62
-21	69.93	72.05	74.22	3.01	-2.94	0.63	-0.61
-20	66.63	68.61	70.64	2.96	-2.89	0.63	-0.61
-19	63.50	65.36	67.26	2.91	-2.84	0.62	-0.60
-18	60.53	62.27	64.05	2.86	-2.79	0.61	-0.60
-17	57.72	59.35	61.02	2.81	-2.75	0.61	-0.59
-16	55.06	56.59	58.16	2.77	-2.70	0.60	-0.58
-15	52.53	53.96	55.43	2.72	-2.65	0.59	-0.58
-14	50.13	51.47	52.84	2.67	-2.61	0.58	-0.57
-13	47.85	49.11	50.40	2.62	-2.56	0.58	-0.56
-12	45.70	46.88	48.09	2.57	-2.52	0.57	-0.55
-11	43.64	44.75	45.88	2.52	-2.47	0.56	-0.55
-10	41.70	42.74	43.80	2.48	-2.43	0.55	-0.54
-9	39.85	40.82	41.81	2.43	-2.38	0.55	-0.53
-8	38.09	39.00	39.93	2.38	-2.34	0.54	-0.53
-7	36.42	37.28	38.15	2.34	-2.29	0.53	-0.52
-6	34.83	35.63	36.45	2.29	-2.25	0.53	-0.52
-5	33.33	34.08	34.85	2.25	-2.21	0.51	-0.50
-4	31.89	32.59	33.31	2.20	-2.16	0.51	-0.50
-3	30.52	31.18	31.85	2.16	-2.12	0.50	-0.49
-2	29.22	29.84	30.47	2.11	-2.08	0.50	-0.49
-1	27.99	28.57	29.16	2.07	-2.03	0.48	-0.48
0	26.81	27.35	27.90	2.02	-1.99	0.48	-0.47
1	25.69	26.20	26.72	1.98	-1.95	0.47	-0.46
2	24.62	25.10	25.59	1.93	-1.91	0.46	-0.46
3	23.60	24.05	24.50	1.89	-1.86	0.45	-0.45
4	22.63	23.05	23.48	1.85	-1.82	0.45	-0.44
5	21.71	22.10	22.50	1.80	-1.78	0.44	-0.43
6	20.82	21.19	21.56	1.76	-1.74	0.43	-0.43
7	19.98	20.33	20.68	1.72	-1.70	0.42	-0.42
8	19.18	19.50	19.83	1.68	-1.66	0.41	-0.41
9	18.41	18.71	19.02	1.63	-1.62	0.41	-0.40
10	17.68	17.96	18.25	1.59	-1.58	0.40	-0.40

R (25°C) = 10 KΩ ± 1%

B (25/85°C) 3435 ± 1%

B (25/50°C) 3370 ± 1%

Technical Data

103F-AT-2-3435FA NTC Thermistor Specifications

Temperature °C	Minimum (KΩ)	Center (KΩ)	Maximum (KΩ)	Res. Tolerance (%)		Tolerance (°C)	
				ΔR (%)	-ΔR (%)	Max	Min
10	17.68	17.96	18.25	1.59	-1.58	0.40	-0.40
11	16.98	17.25	17.52	1.55	-1.54	0.39	-0.39
12	16.32	16.57	16.82	1.51	-1.50	0.38	-0.38
13	15.68	15.91	16.14	1.47	-1.46	0.38	-0.37
14	15.07	15.29	15.51	1.43	-1.42	0.36	-0.36
15	14.49	14.69	14.89	1.39	-1.38	0.36	-0.36
16	13.93	14.12	14.31	1.35	-1.34	0.35	-0.35
17	13.40	13.58	13.76	1.31	-1.30	0.34	-0.34
18	12.89	13.06	13.23	1.27	-1.26	0.33	-0.33
19	12.41	12.56	12.71	1.23	-1.23	0.33	-0.33
20	11.95	12.09	12.23	1.19	-1.19	0.31	-0.31
21	11.50	11.63	11.76	1.15	-1.15	0.31	-0.31
22	11.08	11.20	11.32	1.11	-1.11	0.30	-0.30
23	10.66	10.78	10.90	1.08	-1.07	0.29	-0.29
24	10.27	10.38	10.49	1.04	-1.04	0.28	-0.28
25	9.90	10.00	10.10	1.00	-1.00	0.27	-0.27
26	9.53	9.63	9.73	1.04	-1.04	0.28	-0.28
27	9.18	9.28	9.38	1.08	-1.07	0.30	-0.30
28	8.85	8.95	9.05	1.11	-1.11	0.31	-0.31
29	8.53	8.63	8.72	1.15	-1.15	0.32	-0.32
30	8.22	8.32	8.41	1.19	-1.18	0.33	-0.33
31	7.92	8.02	8.12	1.22	-1.22	0.35	-0.34
32	7.64	7.74	7.83	1.26	-1.25	0.36	-0.36
33	7.37	7.46	7.56	1.30	-1.29	0.37	-0.37
34	7.11	7.20	7.30	1.33	-1.32	0.38	-0.38
35	6.86	6.95	7.05	1.37	-1.36	0.39	-0.39
36	6.62	6.71	6.80	1.40	-1.39	0.41	-0.40
37	6.39	6.48	6.57	1.44	-1.43	0.42	-0.42
38	6.16	6.26	6.35	1.47	-1.46	0.43	-0.43
39	5.95	6.04	6.13	1.51	-1.50	0.45	-0.44
40	5.75	5.84	5.93	1.55	-1.53	0.46	-0.45
41	5.55	5.64	5.73	1.58	-1.57	0.47	-0.46
42	5.36	5.45	5.54	1.61	-1.60	0.48	-0.48
43	5.18	5.27	5.35	1.65	-1.63	0.50	-0.49
44	5.01	5.09	5.18	1.68	-1.67	0.51	-0.50
45	4.84	4.92	5.01	1.72	-1.70	0.52	-0.52
46	4.68	4.76	4.85	1.75	-1.73	0.53	-0.53
47	4.52	4.61	4.69	1.79	-1.76	0.55	-0.54
48	4.38	4.46	4.54	1.82	-1.80	0.56	-0.55
49	4.23	4.31	4.39	1.85	-1.83	0.57	-0.57
50	4.09	4.17	4.25	1.89	-1.86	0.59	-0.58
51	3.96	4.04	4.12	1.92	-1.89	0.60	-0.59
52	3.83	3.91	3.98	1.95	-1.93	0.62	-0.61
53	3.71	3.78	3.86	1.99	-1.96	0.63	-0.62
54	3.59	3.66	3.74	2.02	-1.99	0.64	-0.63
55	3.48	3.55	3.62	2.05	-2.02	0.66	-0.65
56	3.37	3.44	3.51	2.08	-2.05	0.67	-0.66
57	3.26	3.33	3.40	2.12	-2.08	0.68	-0.67
58	3.16	3.23	3.30	2.15	-2.11	0.69	-0.68
59	3.06	3.13	3.19	2.18	-2.14	0.71	-0.70
60	2.96	3.03	3.10	2.21	-2.18	0.72	-0.71

R (25°C) = 10 KΩ ± 1%

B (25/85°C) 3435 ± 1%

B (25/50°C) 3370 ± 1%

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Technical Data

103F-AT-2-3435FA

N T C Thermistor Specifications

Temperature °C	Minimum (KΩ)	Center (KΩ)	Maximum (KΩ)	Res. Tolerance (%)		Tolerance (°C)	
				ΔR (%)	-ΔR (%)	Max	Min
60	2.96	3.03	3.10	2.21	-2.18	0.72	-0.71
61	2.87	2.94	3.00	2.25	-2.21	0.73	-0.72
62	2.78	2.85	2.91	2.28	-2.24	0.75	-0.74
63	2.70	2.76	2.82	2.31	-2.27	0.76	-0.74
64	2.62	2.68	2.74	2.34	-2.30	0.78	-0.77
65	2.54	2.60	2.66	2.37	-2.33	0.79	-0.77
66	2.46	2.52	2.58	2.40	-2.36	0.81	-0.79
67	2.39	2.44	2.50	2.43	-2.39	0.81	-0.80
68	2.31	2.37	2.43	2.46	-2.41	0.83	-0.82
69	2.24	2.30	2.36	2.49	-2.44	0.86	-0.84
70	2.18	2.23	2.29	2.53	-2.47	0.85	-0.84
71	2.11	2.17	2.22	2.56	-2.50	0.88	-0.86
72	2.05	2.11	2.16	2.59	-2.53	0.89	-0.87
73	1.99	2.04	2.10	2.62	-2.56	0.91	-0.89
74	1.93	1.99	2.04	2.65	-2.59	0.92	-0.90
75	1.88	1.93	1.98	2.68	-2.62	0.94	-0.92
76	1.82	1.87	1.92	2.71	-2.64	0.96	-0.93
77	1.77	1.82	1.87	2.74	-2.67	0.96	-0.94
78	1.72	1.77	1.82	2.77	-2.70	0.98	-0.95
79	1.67	1.72	1.77	2.79	-2.73	1.00	-0.98
80	1.624	1.67	1.72	2.82	-2.76	1.00	-0.98
81	1.578	1.623	1.67	2.85	-2.78	1.03	-1.00
82	1.534	1.578	1.623	2.88	-2.81	1.06	-1.03
83	1.491	1.535	1.580	2.91	-2.84	1.04	-1.01
84	1.449	1.492	1.536	2.94	-2.87	1.10	-1.07
85	1.410	1.452	1.495	2.97	-2.89	1.08	-1.05
86	1.371	1.412	1.454	3.00	-2.92	1.11	-1.08
87	1.334	1.374	1.416	3.02	-2.95	1.12	-1.09
88	1.297	1.337	1.378	3.05	-2.97	1.13	-1.10
89	1.262	1.301	1.341	3.08	-3.00	1.15	-1.11
90	1.228	1.266	1.305	3.11	-3.03	1.19	-1.16
91	1.195	1.233	1.272	3.14	-3.05	1.17	-1.14
92	1.163	1.200	1.238	3.16	-3.08	1.22	-1.19
93	1.133	1.169	1.206	3.19	-3.10	1.20	-1.17
94	1.102	1.138	1.175	3.22	-3.13	1.26	-1.23
95	1.074	1.109	1.145	3.25	-3.15	1.24	-1.21
96	1.046	1.080	1.115	3.27	-3.18	1.31	-1.27
97	1.019	1.053	1.088	3.30	-3.20	1.29	-1.25
98	0.993	1.026	1.060	3.33	-3.23	1.31	-1.27
99	0.967	1.000	1.034	3.35	-3.25	1.34	-1.30
100	0.943	0.975	1.008	3.38	-3.28	1.35	-1.31
101	0.919	0.951	0.983	3.41	-3.30	1.38	-1.34
102	0.896	0.927	0.959	3.43	-3.33	1.39	-1.35
103	0.874	0.904	0.935	3.46	-3.35	1.41	-1.37
104	0.852	0.882	0.913	3.48	-3.37	1.44	-1.39
105	0.831	0.861	0.891	3.51	-3.40	1.46	-1.41
106	0.811	0.840	0.870	3.53	-3.42	1.48	-1.44
107	0.792	0.820	0.849	3.56	-3.45	1.50	-1.46
108	0.773	0.801	0.829	3.58	-3.47	1.53	-1.48
109	0.755	0.782	0.810	3.61	-3.49	1.54	-1.49
110	0.737	0.764	0.791	3.63	-3.51	1.58	-1.52

R (25°C) = 10 KΩ ± 1%

B (25/85°C) 3435 ± 1%

B (25/50°C) 3370 ± 1%


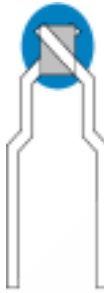


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Technical Data

103F-AT-2-3435FA NTC Thermistor Specifications

Temperature °C	Minimum (KΩ)	Center (KΩ)	Maximum (KΩ)	Res. Tolerance (%)		Tolerance (°C)	
				ΔR (%)	-ΔR (%)	Max	Min
110	0.737	0.764	0.791	3.63	-3.51	1.58	-1.52
111	0.720	0.746	0.773	3.66	-3.54	1.59	-1.54
112	0.703	0.729	0.756	3.68	-3.56	1.63	-1.57
113	0.687	0.712	0.739	3.70	-3.58	1.65	-1.59
114	0.671	0.696	0.722	3.73	-3.60	1.67	-1.62
115	0.656	0.681	0.706	3.75	-3.62	1.70	-1.65
116	0.642	0.666	0.691	3.77	-3.65	1.73	-1.67
117	0.627	0.651	0.676	3.80	-3.67	1.77	-1.71
118	0.614	0.637	0.662	3.82	-3.69	1.79	-1.73
119	0.601	0.624	0.648	3.84	-3.71	1.83	-1.77
120	0.588	0.611	0.634	3.86	-3.73	1.89	-1.83

8 Shape Style

1 Style	2 Style	3 Style	4 Style
			
Straight Leads	Forming Lead	Outward Lead	Forming Lead

R (25°C) = 10 KΩ ± 1%
 B (25/85°C) 3435 ± 1%
 B (25/50°C) 3370 ± 1%

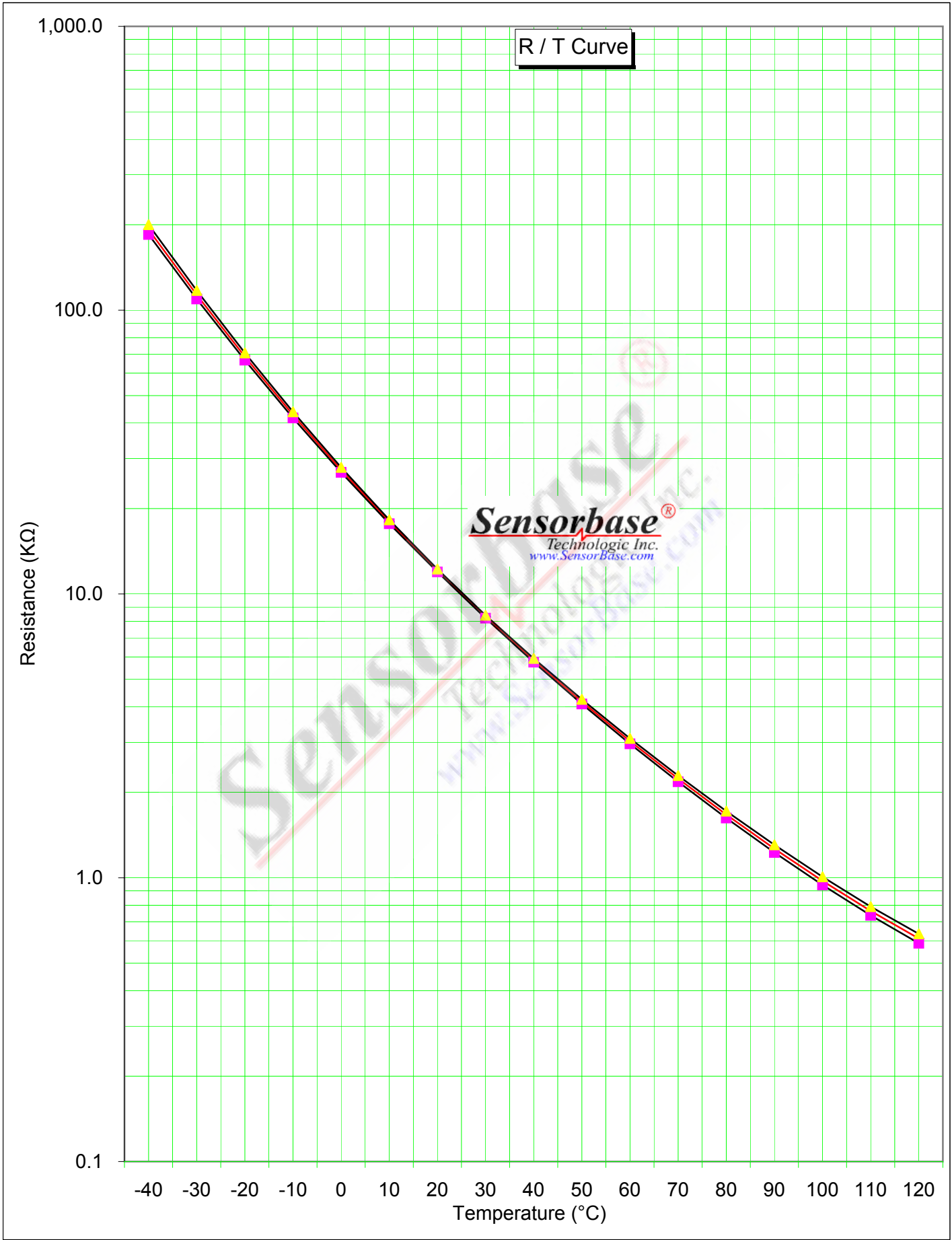
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Technical Data

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N T C Thermistor Specifications

9 R / T Curve



R (25°C) = 10 KΩ ± 1%
B (25/85°C) 3435 ± 1%
B (25/50°C) 3370 ± 1%

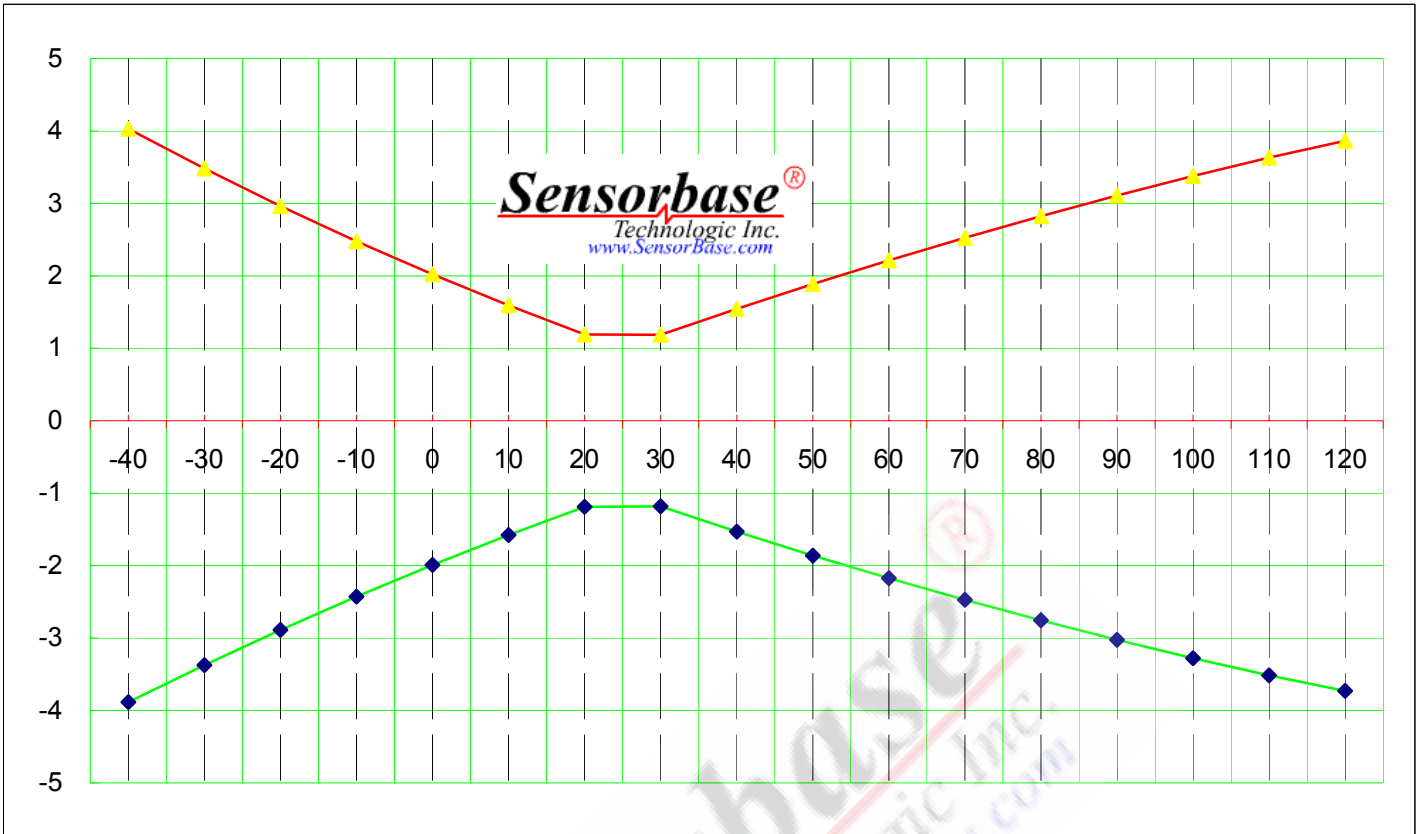
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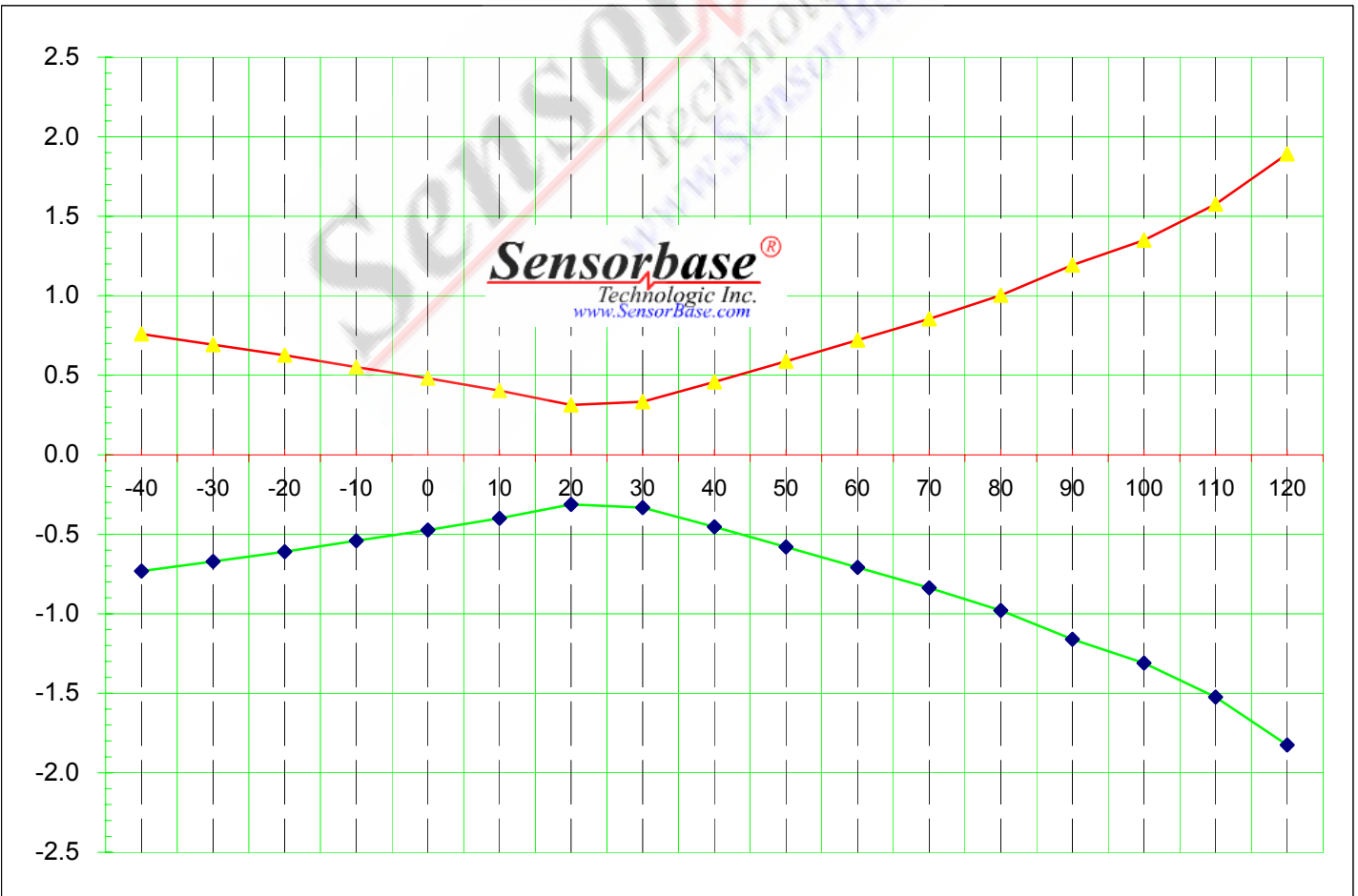
103F-AT-2-3435FA

N T C Thermistor Specifications

10 Resistance Tolerance (%)



11 Temperature Tolerance (°C)



R (25°C) = 10 KΩ ± 1%
 B (25/85°C) 3435 ± 1%
 B (25/50°C) 3370 ± 1%

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