Ultra-Stable Miniature Thermistor

ATH100K1R3B3950K0.5%

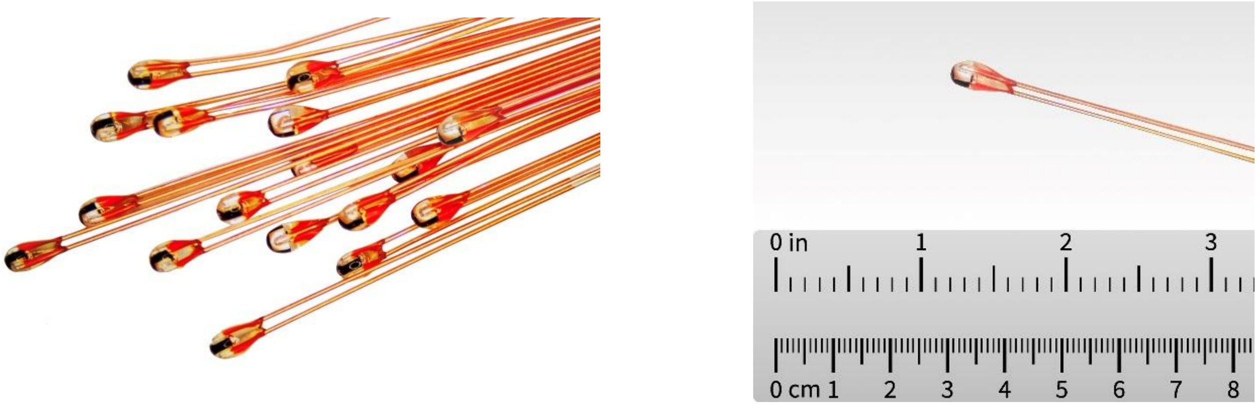

Figure 1. The Physical Photo of ATH100K1R3B3950K0.5%

MAIN FEATURES

Glass Encapsulated for Long Term Stability & Reliability
High Stability: <0.1°C/year
Small Size: ϕ1.3mm ×2.4mm
High Resistance Accuracy: 0.5%
Quick Response Time: 7s
Wide Temp. Range: –40°C to 250°C
Leads: dumet wires (copper-clad FeNi)
100% Lead (Pb)-free and RoHS Compliant

APPLICATIONS

The ATH100K1R3B3950K0.5% thermistor is ideal for temperature sensing in high-precision devices such as laser diodes and optical components that require accurate temperature monitoring. In addition, due to its low cost, it is also suitable for use in automotive electronics, industrial electronics, and home appliances where cost-effective temperature sensing is required.

DESCRIPTION

Figure 1 displays the ATH100K1R3B3950K0.5% thermistor, which boasts high precision and a glass encapsulation design. In contrast to conventional epoxy-encapsulated thermistors, the ATH100K1R3B3950K0.5% offers superior long-term stability and a wider temperature range. Moreover, it has a compact size and a quick response time.

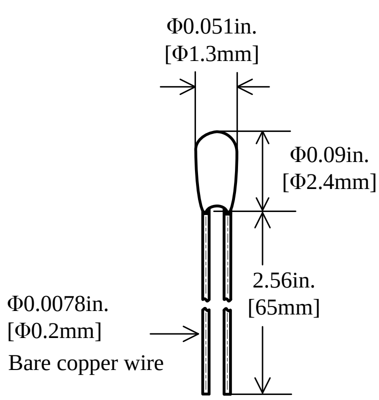

Figure 2. Side View of ATH100K1R3B3950K0.5%

SPECIFICATIONS

Parameters	Symbol	Value
Nominal Resistance @ 25°C	R_{25}	10K ± 0.5%
B Value @ 25°C /50°C	$B_{25/50}$	3950K ± 1%
Thermistor Diameter	D_T	1.3 ± 0.2mm
Thermistor Length	L_T	2.4 ± 0.5mm
Lead Diameter	D_L	0.2± 0.05mm
Lead Length	L_L	65 ± 5mm
Dissipation Factor	δ_{th}	0.9mW/°C
Insulation Resistance	R_{is}	≥100MΩ
Maximum Power @ 25°C	P_{max}	35mW
Time Constant	τ_c	7s (in still air @5~25°C)

APPLICATION

One common issue encountered when potting the thermistor into a solid object to sense its temperature is the formation of air bubbles within the epoxy between the thermistor bead and the target object. These air bubbles can significantly delay the thermistor's response time. To address this problem, it is recommended to drill a deep counterbore hole and use thermal conductive epoxy to pot the thermistor at the bottom of the hole, as illustrated in Figure 3. This method effectively reduces the formation of air bubbles and enhances the thermistor's overall performance.

To prevent the formation of air bubbles during the potting process, it is recommended to cure the epoxy at the temperature specified by the manufacturer. For optimal results, curing should be conducted in a vacuum environment and/or on top of a vibration platform to eliminate any remaining air pockets. By taking these measures, the potting process can be optimized, resulting in accurate temperature sensing with the shortest possible response time.

The ATH100K1R3B3950K0.5% thermistor is terminated with leaded bare copper wires. For applications that require insulated lead wires, we offer insulation tubing. For more information, please click **HERE**.

The radial glass bead encapsulation NTC thermistor exhibits superior resistance to heat and climatic conditions and have a long lifetime compared to resin-coated thermistors. It is made of bonding lead wire, gold/silver electrodes and qualified ceramic thermistor chip, which makes it keep stable characteristics. It features long-term stability, reliability, wide temperature range and fast thermal response time. Multiple bead diameters and sensor spec. are available. And they can be easily incorporated into various housing options because of their small size.

Please note that the ATH100K1R3B3950K0.5% thermistor is not designed for direct immersion in water or other electrically conductive or corrosive liquids, due to the non-isolated nature of its leads. Doing so may result in inaccurate resistance readings, damage to the thermistor's leads, or pose a safety hazard.

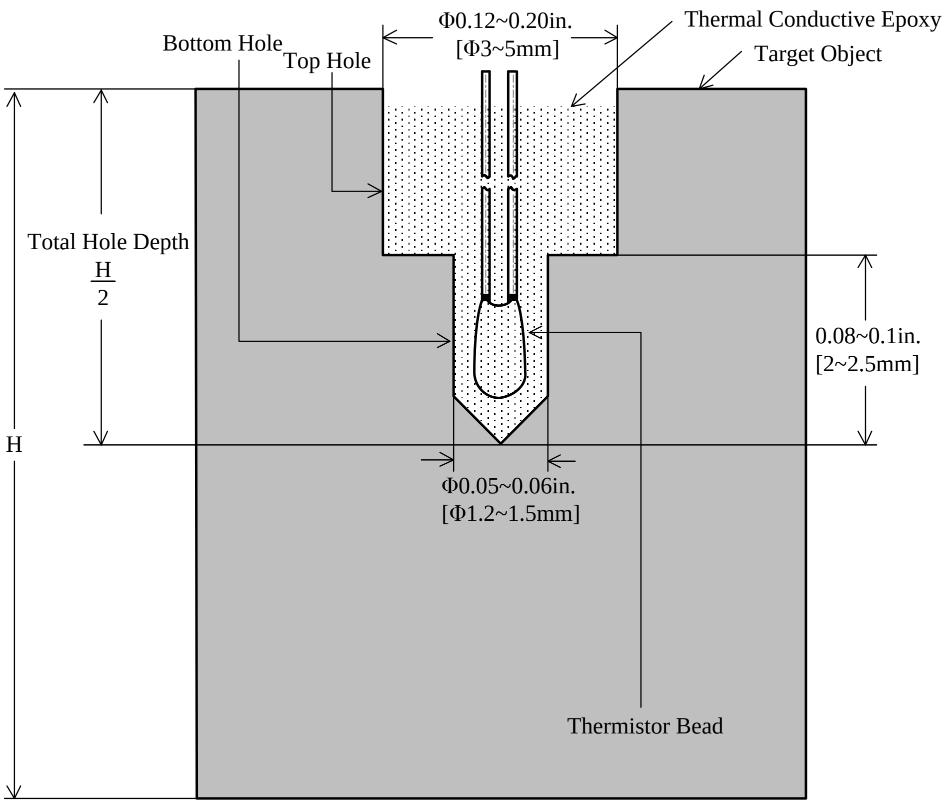

Figure 3. Section View of Recommended Counterbore Hole

PART NUMBER CONVENTION

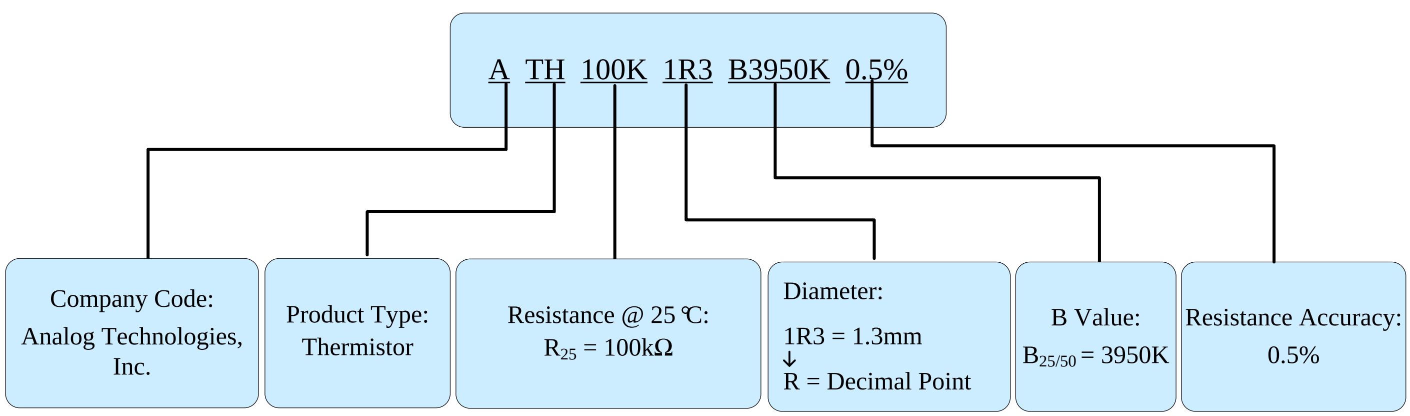

Figure 4. Part Number Convention of ATH100K1R3B3950K0.5%

RESISTANCE TEMPERATURE CHARACTERISTICS

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
-40	2857.561	2971.001	3088.851	3.89	0.35	5.70
-39	2703.131	2808.851	2918.641	3.84	0.34	5.71
-38	2551.981	2650.251	2752.241	3.78	0.32	5.89
-37	2405.691	2496.841	2591.381	3.72	0.31	6.02
-36	2265.331	2349.731	2437.221	3.66	0.30	6.11
-35	2131.581	2209.641	2290.511	3.60	0.29	6.17
-34	2004.821	2076.951	2151.631	3.53	0.28	6.21
-33	1885.191	1951.801	2020.721	3.47	0.28	6.22
-32	1772.661	1834.151	1897.741	3.41	0.27	6.21
-31	1667.071	1723.831	1782.491	3.35	0.27	6.19
-30	1568.181	1620.571	1674.681	3.29	0.27	6.16
-29	1475.681	1524.051	1573.971	3.22	0.26	6.12
-28	1389.251	1433.911	1479.971	3.16	0.26	6.08
-27	1308.531	1349.781	1392.291	3.10	0.26	6.03
-26	1233.151	1271.261	1310.521	3.04	0.25	5.97
-25	1162.771	1198.001	1234.261	2.98	0.25	5.91
-24	1097.041	1129.611	1163.121	2.92	0.25	5.85
-23	1035.621	1065.751	1096.731	2.87	0.25	5.79
-22	978.224	1006.101	1034.741	2.81	0.24	5.74
-21	924.532	950.337	976.838	2.75	0.24	5.68
-20	874.280	898.175	922.701	2.70	0.24	5.62
-19	827.213	849.347	872.052	2.64	0.24	5.57
-18	783.096	803.605	824.630	2.58	0.23	5.51
-17	741.711	760.719	780.194	2.53	0.23	5.46
-16	702.858	720.478	738.521	2.47	0.23	5.42
-15	666.353	682.690	699.410	2.42	0.23	5.37
-14	632.026	647.176	662.672	2.37	0.22	5.32
-13	599.723	613.773	628.136	2.31	0.22	5.28
-12	569.301	582.332	595.646	2.26	0.22	5.24
-11	540.630	552.717	565.059	2.21	0.21	5.20
-10	513.591	524.801	536.241	2.16	0.21	5.17

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
-9	488.073	498.469	509.073	2.11	0.21	5.13
-8	463.975	473.616	483.444	2.06	0.20	5.10
-7	441.206	450.144	459.252	2.00	0.20	5.07
-6	419.679	427.965	436.403	1.95	0.19	5.04
-5	399.315	406.995	414.811	1.90	0.19	5.01
-4	380.043	387.159	394.397	1.85	0.19	4.99
-3	361.796	368.386	375.087	1.80	0.18	4.96
-2	344.511	350.613	356.814	1.75	0.18	4.94
-1	328.130	333.778	339.515	1.71	0.16	5.23
0	310.512	315.681	320.927	1.65	0.17	4.92
1	297.876	302.707	307.609	1.61	0.18	4.51
2	283.906	288.371	292.898	1.56	0.16	4.84
3	270.650	274.774	278.953	1.51	0.16	4.82
4	258.067	261.873	265.728	1.46	0.15	4.80
5	246.121	249.631	253.185	1.41	0.15	4.78
6	234.775	238.010	241.283	1.37	0.14	4.76
7	223.998	226.977	229.989	1.32	0.14	4.74
8	213.759	216.499	219.268	1.27	0.13	4.72
9	204.028	206.546	209.090	1.23	0.12	5.13
10	193.018	195.291	197.585	1.17	0.12	4.72
11	185.987	188.106	190.245	1.13	0.14	4.18
12	177.626	179.567	181.524	1.09	0.12	4.64
13	169.675	171.450	173.239	1.04	0.11	4.62
14	162.113	163.733	165.365	0.99	0.11	4.60
15	154.918	156.395	157.881	0.95	0.10	4.58
16	148.073	149.416	150.767	0.90	0.10	4.56
17	141.558	142.777	144.003	0.86	0.09	4.54
18	135.358	136.462	137.571	0.81	0.09	4.52
19	129.456	130.452	131.454	0.77	0.09	4.50
20	123.836	124.734	125.635	0.72	0.08	4.47
21	118.485	119.290	120.098	0.68	0.08	4.45
22	113.388	114.108	114.830	0.63	0.07	4.43

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
23	108.533	109.174	109.817	0.59	0.07	4.41
24	103.908	104.476	105.044	0.54	0.06	4.39
25	99.501	100.001	100.500	0.50	0.06	4.37
26	95.217	95.737	96.258	0.54	0.06	4.35
27	91.138	91.675	92.214	0.59	0.07	4.33
28	87.252	87.804	88.358	0.63	0.07	4.31
29	83.550	84.115	84.682	0.67	0.08	4.28
30	80.022	80.598	81.176	0.72	0.08	4.26
31	76.660	77.244	77.831	0.76	0.09	4.24
32	73.454	74.046	74.640	0.80	0.09	4.22
33	70.398	70.995	71.595	0.84	0.10	4.20
34	67.484	68.084	68.688	0.88	0.11	4.18
35	64.704	65.307	65.914	0.93	0.11	4.16
36	62.052	62.656	63.264	0.97	0.12	4.13
37	59.521	60.126	60.734	1.01	0.12	4.11
38	57.106	57.709	58.318	1.05	0.13	4.09
39	54.800	55.402	56.009	1.09	0.13	4.07
40	52.598	53.197	53.802	1.13	0.14	4.05
41	50.496	51.091	51.693	1.17	0.15	4.03
42	48.487	49.079	49.677	1.21	0.15	4.01
43	46.568	47.155	47.748	1.25	0.16	3.99
44	44.734	45.316	45.904	1.29	0.16	3.97
45	42.981	43.557	44.140	1.33	0.17	3.95
46	41.304	41.875	42.452	1.37	0.17	3.93
47	39.701	40.265	40.837	1.41	0.18	3.91
48	38.168	38.725	39.290	1.45	0.19	3.89
49	36.701	37.252	37.809	1.49	0.19	3.87
50	35.297	35.841	36.391	1.53	0.20	3.85
51	33.954	34.489	35.033	1.56	0.20	3.84
52	32.667	33.195	33.731	1.60	0.21	3.82
53	31.435	31.956	32.484	1.64	0.22	3.80
54	30.255	30.768	31.288	1.68	0.22	3.78

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
55	29.125	29.630	30.142	1.72	0.23	3.76
56	28.042	28.538	29.043	1.75	0.23	3.75
57	27.004	27.492	27.989	1.79	0.24	3.73
58	26.009	26.489	26.977	1.83	0.25	3.71
59	25.054	25.526	26.007	1.87	0.25	3.69
60	24.139	24.603	25.075	1.90	0.26	3.68
61	23.261	23.717	24.181	1.94	0.26	3.66
62	22.419	22.867	23.323	1.98	0.27	3.64
63	21.611	22.050	22.498	2.01	0.28	3.63
64	20.835	21.266	21.706	2.05	0.28	3.61
65	20.090	20.514	20.945	2.08	0.29	3.60
66	19.375	19.790	20.214	2.12	0.30	3.58
67	18.688	19.096	19.512	2.16	0.30	3.57
68	18.028	18.428	18.836	2.19	0.31	3.55
69	17.394	17.786	18.187	2.23	0.31	3.54
70	16.785	17.169	17.562	2.26	0.32	3.52
71	16.200	16.576	16.961	2.30	0.33	3.51
72	15.637	16.006	16.383	2.33	0.33	3.50
73	15.096	15.457	15.827	2.36	0.34	3.48
74	14.575	14.930	15.292	2.40	0.35	3.47
75	14.075	14.422	14.777	2.43	0.35	3.46
76	13.593	13.933	14.282	2.47	0.36	3.44
77	13.130	13.463	13.804	2.50	0.37	3.43
78	12.684	13.010	13.345	2.54	0.37	3.42
79	12.255	12.574	12.902	2.57	0.38	3.40
80	11.842	12.155	12.476	2.61	0.38	3.39
81	11.444	11.750	12.065	2.64	0.39	3.38
82	11.061	11.361	11.669	2.68	0.40	3.36
83	10.692	10.986	11.287	2.71	0.40	3.35
84	10.337	10.625	10.920	2.74	0.31	4.47
85	9.758	10.036	10.320	2.80	0.41	3.41
86	9.665	9.941	10.224	2.81	0.67	2.11

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
87	9.347	9.617	9.894	2.84	0.43	3.31
88	9.041	9.305	9.576	2.87	0.44	3.29
89	8.746	9.004	9.270	2.91	0.44	3.28
90	8.462	8.714	8.974	2.94	0.45	3.26
91	8.187	8.435	8.689	2.98	0.46	3.25
92	7.923	8.165	8.414	3.01	0.46	3.25
93	7.668	7.905	8.148	3.04	0.47	3.23
94	7.422	7.654	7.892	3.07	0.48	3.23
95	7.185	7.411	7.645	3.10	0.48	3.22
96	6.956	7.177	7.406	3.14	0.49	3.20
97	6.735	6.952	7.175	3.16	0.50	3.19
98	6.522	6.734	6.953	3.20	0.50	3.18
99	6.317	6.524	6.738	3.23	0.38	4.29
100	5.974	6.174	6.380	3.29	0.51	3.23
101	5.927	6.125	6.330	3.29	0.85	1.94
102	5.742	5.936	6.136	3.32	0.53	3.13
103	5.563	5.753	5.949	3.35	0.54	3.12
104	5.391	5.577	5.769	3.39	0.54	3.11
105	5.225	5.406	5.594	3.41	0.55	3.10
106	5.064	5.242	5.426	3.45	0.56	3.08
107	4.909	5.083	5.263	3.48	0.57	3.08
108	4.759	4.929	5.105	3.51	0.57	3.07
109	4.614	4.780	4.953	3.55	0.58	3.05
110	4.474	4.637	4.806	3.58	0.59	3.04
111	4.339	4.498	4.663	3.60	0.59	3.03
112	4.209	4.364	4.526	3.63	0.60	3.01
113	4.082	4.235	4.393	3.67	0.61	3.00
114	3.961	4.110	4.264	3.69	0.61	3.00
115	3.843	3.988	4.140	3.72	0.62	3.00
116	3.729	3.871	4.019	3.75	0.63	2.97
117	3.619	3.758	3.903	3.78	0.64	2.95
118	3.512	3.649	3.790	3.81	0.65	2.95

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T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
119	3.409	3.543	3.681	3.84	0.65	2.95
120	3.310	3.440	3.576	3.87	0.66	2.94
121	3.214	3.341	3.474	3.89	0.67	2.90
122	3.121	3.246	3.376	3.93	0.68	2.90
123	3.031	3.153	3.280	3.95	0.68	2.90
124	2.944	3.063	3.188	3.98	0.69	2.87
125	2.859	2.977	3.098	4.01	0.70	2.86
126	2.778	2.893	3.012	4.04	0.70	2.87
127	2.699	2.811	2.928	4.07	0.72	2.85
128	2.623	2.733	2.847	4.10	0.73	2.82
129	2.549	2.657	2.768	4.12	0.73	2.82
130	2.478	2.583	2.692	4.14	0.73	2.83
131	2.409	2.511	2.619	4.18	0.74	2.81
132	2.342	2.442	2.547	4.20	0.76	2.76
133	2.277	2.376	2.478	4.23	0.77	2.76
134	2.214	2.311	2.411	4.26	0.77	2.77
135	2.154	2.248	2.347	4.29	0.78	2.76
136	2.095	2.187	2.284	4.32	0.79	2.74
137	2.038	2.128	2.223	4.35	0.80	2.73
138	1.983	2.071	2.164	4.37	0.81	2.70
139	1.929	2.016	2.107	4.41	0.82	2.68
140	1.878	1.963	2.052	4.43	0.83	2.67
141	1.828	1.911	1.998	4.45	0.83	2.67
142	1.779	1.861	1.946	4.49	0.84	2.66
143	1.732	1.812	1.896	4.53	0.85	2.65
144	1.687	1.765	1.847	4.53	0.86	2.63
145	1.642	1.719	1.799	4.57	0.87	2.62
146	1.600	1.675	1.753	4.57	0.88	2.60
147	1.558	1.632	1.709	4.63	0.89	2.60
148	1.518	1.590	1.666	4.65	0.90	2.58
149	1.479	1.550	1.624	4.68	0.92	2.55
150	1.441	1.511	1.583	4.70	0.91	2.58

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T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
151	1.405	1.472	1.544	4.72	0.93	2.55
152	1.369	1.436	1.505	4.74	0.94	2.51
153	1.335	1.400	1.468	4.75	0.94	2.54
154	1.301	1.365	1.432	4.80	0.95	2.53
155	1.269	1.331	1.397	4.81	0.97	2.48
156	1.237	1.299	1.363	4.85	0.98	2.46
157	1.207	1.267	1.330	4.85	0.98	2.49
158	1.177	1.236	1.298	4.89	0.99	2.47
159	1.149	1.206	1.267	4.89	1.00	2.45
160	1.121	1.177	1.237	4.93	1.02	2.42
161	1.094	1.149	1.208	4.96	1.04	2.39
162	1.067	1.122	1.179	4.99	1.04	2.41
163	1.042	1.095	1.152	5.02	1.06	2.37
164	1.017	1.070	1.125	5.05	1.08	2.34
165	0.993	1.045	1.099	5.07	1.06	2.39
166	0.970	1.020	1.073	5.05	1.07	2.35
167	0.947	0.997	1.049	5.12	1.11	2.31
168	0.925	0.974	1.025	5.13	1.09	2.36
169	0.903	0.951	1.002	5.21	1.13	2.31
170	0.883	0.930	0.979	5.16	1.12	2.31
171	0.862	0.908	0.957	5.23	1.13	2.31
172	0.843	0.888	0.936	5.24	1.16	2.25
173	0.824	0.868	0.915	5.24	1.17	2.25
174	0.805	0.849	0.895	5.30	1.18	2.24
175	0.787	0.830	0.875	5.30	1.16	2.29
176	0.769	0.811	0.856	5.36	1.21	2.22
177	0.752	0.794	0.837	5.35	1.21	2.20
178	0.736	0.776	0.819	5.35	1.19	2.26
179	0.720	0.759	0.801	5.34	1.23	2.17
180	0.704	0.743	0.784	5.38	1.25	2.15
181	0.689	0.727	0.767	5.36	1.22	2.20
182	0.674	0.711	0.751	5.41	1.24	2.18

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,

T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
183	0.659	0.696	0.735	5.46	1.27	2.16
184	0.645	0.681	0.720	5.51	1.29	2.13
185	0.631	0.667	0.705	5.55	1.32	2.10
186	0.618	0.653	0.690	5.51	1.29	2.14
187	0.605	0.639	0.676	5.56	1.31	2.11
188	0.592	0.626	0.662	5.59	1.35	2.08
189	0.580	0.613	0.648	5.55	1.36	2.04
190	0.568	0.601	0.635	5.57	1.34	2.08
191	0.556	0.588	0.622	5.61	1.32	2.13
192	0.545	0.576	0.610	5.64	1.41	2.00
193	0.533	0.565	0.598	5.75	1.41	2.04
194	0.523	0.553	0.586	5.70	1.37	2.08
195	0.512	0.542	0.574	5.72	1.41	2.03
196	0.502	0.531	0.563	5.74	1.45	1.98
197	0.492	0.521	0.552	5.76	1.43	2.02
198	0.482	0.510	0.541	5.78	1.40	2.06
199	0.472	0.500	0.530	5.80	1.53	1.90
200	0.463	0.491	0.520	5.80	1.50	1.93
201	0.454	0.481	0.510	5.82	1.47	1.98
202	0.445	0.472	0.500	5.83	1.45	2.01
203	0.436	0.462	0.490	5.84	1.42	2.06
204	0.428	0.453	0.481	5.85	1.56	1.88
205	0.419	0.445	0.472	5.96	1.56	1.91
206	0.411	0.436	0.463	5.96	1.53	1.95
207	0.403	0.428	0.454	5.96	1.59	1.87
208	0.395	0.420	0.446	6.07	1.59	1.90
209	0.388	0.412	0.437	5.95	1.53	1.94
210	0.381	0.404	0.429	5.94	1.50	1.98
211	0.373	0.396	0.421	6.06	1.60	1.89
212	0.366	0.389	0.413	6.04	1.68	1.80
213	0.359	0.382	0.406	6.15	1.68	1.83
214	0.353	0.375	0.398	6.00	1.61	1.87

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
215	0.346	0.368	0.391	6.11	1.61	1.90
216	0.339	0.361	0.384	6.23	1.61	1.94
217	0.333	0.354	0.377	6.21	1.69	1.84
218	0.327	0.348	0.370	6.18	1.65	1.87
219	0.321	0.341	0.363	6.16	1.62	1.91
220	0.315	0.335	0.356	6.12	1.71	1.79
221	0.309	0.329	0.350	6.23	1.71	1.82
222	0.303	0.323	0.344	6.35	1.71	1.86
223	0.298	0.317	0.338	6.31	1.67	1.89
224	0.292	0.311	0.331	6.27	1.77	1.77
225	0.287	0.306	0.326	6.37	1.77	1.80
226	0.282	0.300	0.320	6.33	1.73	1.83
227	0.277	0.295	0.314	6.27	1.68	1.86
228	0.272	0.289	0.308	6.23	1.64	1.90
229	0.267	0.284	0.303	6.34	1.80	1.76
230	0.262	0.279	0.298	6.45	1.80	1.79
231	0.257	0.274	0.292	6.39	1.75	1.82
232	0.253	0.269	0.287	6.32	1.70	1.86
233	0.248	0.264	0.282	6.44	1.89	1.70
234	0.243	0.260	0.277	6.54	1.89	1.73
235	0.239	0.255	0.272	6.47	1.83	1.76
236	0.235	0.251	0.267	6.37	1.78	1.79
237	0.231	0.246	0.263	6.50	1.78	1.83
238	0.226	0.242	0.258	6.61	1.78	1.86
239	0.222	0.237	0.253	6.54	1.72	1.90
240	0.218	0.233	0.249	6.65	1.94	1.72
241	0.214	0.229	0.244	6.55	1.88	1.75
242	0.210	0.225	0.240	6.67	1.88	1.78
243	0.207	0.221	0.236	6.56	1.81	1.81
244	0.203	0.217	0.232	6.68	1.81	1.84
245	0.199	0.213	0.228	6.81	1.81	1.88
246	0.196	0.209	0.224	6.70	1.75	1.91

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 0.5%,						
T (°C)	Resistance (kΩ)			Relative Resistance Variation at a Specific Temperature (±%)	Temperature Measurement Error at a Specific Temperature (±°C)	Temperature Coefficient (%/°C)
	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
247	0.192	0.205	0.220	6.83	2.00	1.71
248	0.189	0.202	0.216	6.68	1.93	1.73
249	0.185	0.198	0.212	6.82	1.93	1.77
250	0.182	0.195	0.208	6.67	1.92	1.77

To ensure optimal performance and reliability, it is recommended to follow proper storage procedures for the ATH100K1R3B3950K0.5% thermistor. Here are some guidelines:

1. Store the thermistors only in their original packaging and do not open the package before storage.
2. The recommended storage temperature is between −25 ℃ to +45 ℃, with a relative humidity of less than 75% on average and a maximum of 95%. Dew precipitation is not allowed.
3. Do not expose the thermistors to heat or direct sunlight during storage as this may cause deformation of the packing material or sticking of the thermistors, leading to difficulties during mounting.
4. Avoid contamination of the thermistor's surface during storage, handling, and processing.
5. Do not store the thermistor in harmful environments containing corrosive gases like SOx, Cl, etc.
6. After opening the factory seals, such as polyvinyl-sealed packages, it is recommended to use the thermistors as soon as possible.
7. For optimal soldering performance, it is recommended to solder the thermistors within 12 months for SMDs and 24 months for leaded components after shipment from the manufacturer, ATI.

When handling NTC thermistors, it is important to prevent them from being dropped, as this could cause chip-offs and damage to the components. To avoid any damage, components should not be touched with bare hands, and gloves are recommended. It is also important to prevent any contamination of the thermistor surface during handling to ensure accurate readings.

When soldering the ATH100K1R3B3950K0.5% thermistor, it is important to use a resin-type or non-activated flux. Insufficient preheating can cause ceramic cracks, so proper preheating is recommended. Rapid cooling by dipping in solvent is not recommended. It is also recommended to completely remove any flux residue after soldering to prevent contamination or damage to the thermistor.

NOTICE

1. It is important to carefully read and follow the warnings, cautions, and product-specific notes provided with electronic components. These instructions are designed to ensure the safe and proper use of the component and to prevent damage to the component or surrounding equipment. Failure to follow these instructions could result in malfunction or failure of the component, damage to surrounding equipment, or even injury or harm to individuals. Always take the necessary precautions and seek professional assistance if unsure about proper use or handling of electronic components.
2. Please note that the products and specifications described in this publication are subject to change without prior notice as we continuously improve our products. Therefore, we recommend checking the product descriptions and specifications before placing an order to ensure that they are still applicable. We also reserve the right to discontinue the production and delivery of certain products, which means that not all products named in this publication may always be available.
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4. ATI warrants its products to perform according to specifications for one year from the date of sale, except when damaged due to excessive abuse. If a product fails to meet specifications within one year of the sale, it can be exchanged free of charge.
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9. ATI retains ownership of all rights for special technologies, techniques, and designs for its products and projects, as well as any modifications, improvements, and inventions made by ATI.
10. Please note that despite operating the passive electronic components as specified, malfunctions or failures before the end of their usual service life may still occur in individual cases due to the current state of the art. Therefore, in customer applications that require a high level of operational safety, especially those in which the malfunction or failure of a passive electronic component could pose a threat to human life or health (such as in accident prevention or life-saving systems), it is essential to ensure through suitable design of the customer application or other measures taken by the customer (such as the installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of a passive electronic component malfunction or failure.