Ultra-Stable Miniature Thermistor

ATH100KR8B3950K

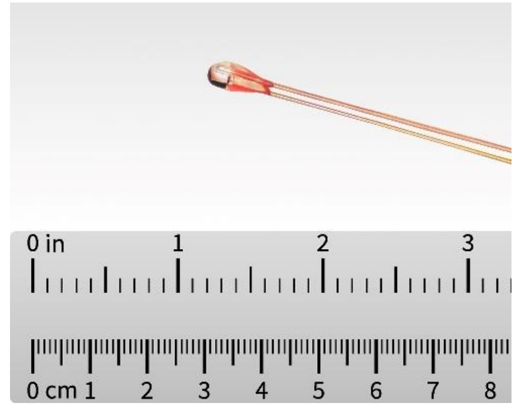

Figure 1. The Physical Photo of ATH100KR8B3950K

MAIN FEATURES

Glass Encapsulated for Long Term Stability & Reliability
High Stability: <0.1°C/year
Small Size: ϕ0.8mm ×1.8mm
High Resistance Accuracy: 1%
Quick Response Time: 2.3s
Wide Temp. Range: –40°C to 300°C
Leads: dumet wires (copper-clad FeNi)
100% Lead (Pb)-free and RoHS Compliant

APPLICATIONS

The ATH100KR8B3950K 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 ATH100KR8B3950K thermistor, which boasts high precision and a glass encapsulation design. In contrast to conventional epoxy-encapsulated thermistors, the ATH100KR8B3950K offers superior long-term stability and a wider temperature range. Moreover, it has a compact size and a quick response time.

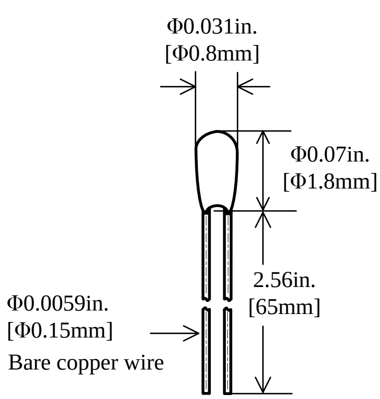

Figure 2. Side View of ATH100KR8B3950K

SPECIFICATIONS

Parameters	Symbol	Value
Nominal Resistance @ 25°C	R_{25}	100K ± 1%
B Value @ 25°C /50°C	$B_{25/50}$	3950K ± 1%
Thermistor Diameter	D_T	0.8 ± 0.2mm
Thermistor Length	L_T	1.8 ± 0.5mm
Lead Diameter	D_L	0.15± 0.05mm
Lead Length	L_L	65 ± 2mm
Dissipation Factor	δ_{th}	0.6mW/°C
Insulation Resistance	R_{is}	≥100MΩ
Maximum Power @ 25°C	P_{max}	50mW
Time Constant	τ_c	2.3s (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 ATH100KR8B3950K 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 ATH100KR8B3950K 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.

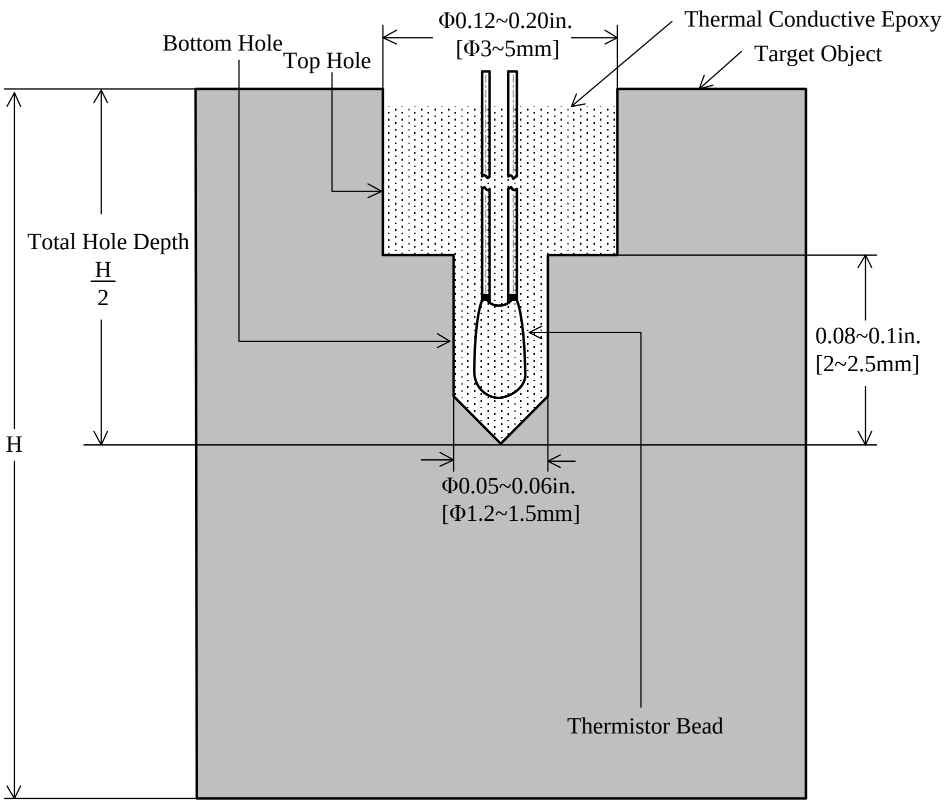

Figure 3. Section View of Recommended Counterbore Hole

PART NUMBER CONVENTION

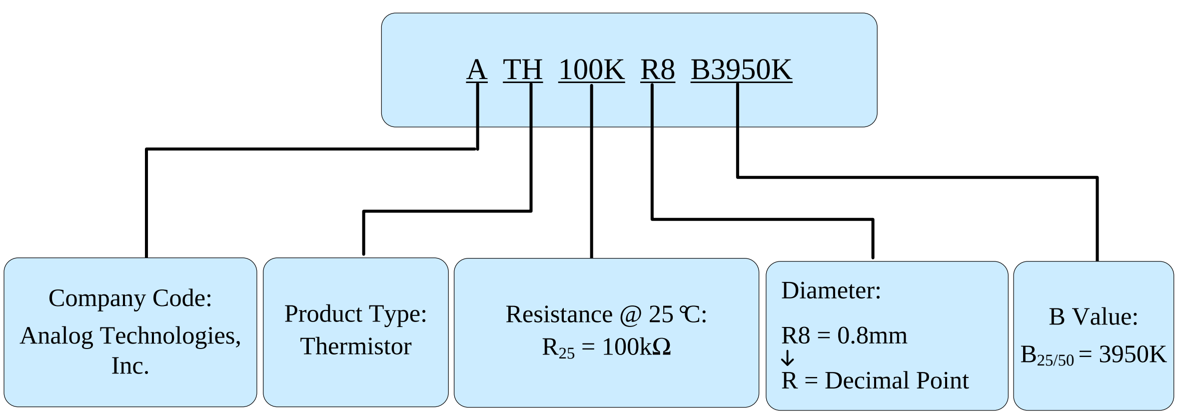

Figure 4. Part Number Convention of ATH100KR8B3950K

RESISTANCE TEMPERATURE CHARACTERISTICS

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,						
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	3011.238	3152.028	3292.819	4.47	0.36	6.34
−39	2827.808	2958.371	3088.933	4.41	0.35	6.33
−38	2656.510	2777.614	2898.718	4.36	0.35	6.29
−37	2496.486	2608.840	2721.194	4.31	0.34	6.26
−36	2346.940	2451.198	2555.456	4.25	0.34	6.22
−35	2207.139	2303.903	2400.667	4.20	0.34	6.18
−34	2076.401	2166.227	2256.053	4.15	0.34	6.15
−33	1954.096	2037.497	2120.899	4.09	0.33	6.11
−32	1839.640	1917.091	1994.541	4.04	0.33	6.08
−31	1732.494	1804.431	1876.367	3.99	0.33	6.04
−30	1632.155	1698.982	1765.808	3.93	0.33	6.01
−29	1538.159	1600.248	1662.338	3.88	0.32	5.97
−28	1450.074	1507.772	1565.469	3.83	0.32	5.94
−27	1367.502	1421.126	1474.750	3.77	0.32	5.91
−26	1290.070	1339.915	1389.760	3.72	0.32	5.87
−25	1217.435	1263.773	1310.111	3.67	0.31	5.84
−24	1149.275	1192.359	1235.443	3.61	0.31	5.80
−23	1085.294	1125.357	1165.420	3.56	0.31	5.77
−22	1025.217	1062.474	1099.731	3.51	0.31	5.74
−21	968.785	1003.437	1038.089	3.45	0.30	5.67
−20	916.442	948.698	980.954	3.40	0.30	5.58
−19	867.530	897.568	927.607	3.35	0.30	5.55
−18	821.029	848.989	876.949	3.29	0.30	5.57
−17	776.956	802.972	828.988	3.24	0.29	5.57
−16	735.279	759.481	783.683	3.19	0.29	5.56
−15	695.936	718.448	740.959	3.13	0.28	5.55
−14	658.844	679.781	700.718	3.08	0.28	5.52
−13	623.901	643.374	662.846	3.03	0.28	5.49
−12	590.999	609.110	627.221	2.97	0.27	5.46
−11	560.027	576.872	593.716	2.92	0.27	5.42
−10	530.872	546.539	562.206	2.87	0.27	5.39

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,						
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	503.422	517.995	532.568	2.81	0.26	5.35
−8	477.572	491.127	504.682	2.76	0.26	5.31
−7	453.217	465.825	478.434	2.71	0.26	5.27
−6	430.262	441.989	453.717	2.65	0.25	5.24
−5	408.615	419.522	430.430	2.60	0.25	5.20
−4	388.190	398.334	408.478	2.55	0.25	5.17
−3	368.908	378.342	387.775	2.49	0.24	5.14
−2	350.696	359.467	368.238	2.44	0.24	5.11
−1	333.485	341.639	349.793	2.39	0.24	5.07
0	317.213	324.791	332.369	2.33	0.23	5.05
1	301.819	308.861	315.903	2.28	0.23	5.02
2	287.252	293.794	300.336	2.23	0.22	4.99
3	273.461	279.536	285.611	2.17	0.22	4.96
4	260.399	266.039	271.679	2.12	0.21	4.94
5	248.025	253.259	258.493	2.07	0.21	4.91
6	236.299	241.154	246.009	2.01	0.21	4.89
7	225.183	229.685	234.187	1.96	0.20	4.86
8	214.644	218.816	222.988	1.91	0.20	4.84
9	204.650	208.514	212.379	1.85	0.19	4.81
10	195.171	198.748	202.325	1.80	0.19	4.79
11	186.178	189.488	192.797	1.75	0.18	4.76
12	177.646	180.706	183.766	1.69	0.18	4.73
13	169.550	172.377	175.204	1.64	0.17	4.71
14	161.866	164.476	167.086	1.59	0.17	4.68
15	154.573	156.980	159.387	1.53	0.16	4.65
16	147.650	149.868	152.086	1.48	0.16	4.62
17	141.076	143.118	145.159	1.43	0.16	4.60
18	134.833	136.711	138.588	1.37	0.15	4.57
19	128.903	130.628	132.352	1.32	0.15	4.54
20	123.270	124.851	126.432	1.27	0.14	4.51
21	117.916	119.364	120.812	1.21	0.14	4.48
22	112.826	114.151	115.475	1.16	0.13	4.45

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,						
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	107.987	109.195	110.404	1.11	0.13	4.43
24	103.383	104.483	105.584	1.05	0.12	4.40
25	99.001	100.001	101.001	1.00	0.11	4.37
26	94.753	95.735	96.717	1.03	0.12	4.35
27	90.709	91.673	92.636	1.05	0.12	4.33
28	86.857	87.802	88.747	1.08	0.12	4.31
29	83.185	84.112	85.038	1.10	0.13	4.29
30	79.682	80.590	81.499	1.13	0.13	4.27
31	76.338	77.228	78.118	1.15	0.14	4.26
32	73.142	74.014	74.886	1.18	0.14	4.25
33	70.087	70.940	71.794	1.20	0.14	4.24
34	67.161	67.997	68.833	1.23	0.15	4.24
35	64.358	65.176	65.994	1.26	0.15	4.19
36	61.737	62.538	63.338	1.28	0.16	4.12
37	59.238	60.022	60.805	1.31	0.16	4.10
38	56.854	57.621	58.388	1.33	0.16	4.07
39	54.579	55.329	56.080	1.36	0.17	4.05
40	52.407	53.141	53.875	1.38	0.17	4.03
41	50.332	51.050	51.769	1.41	0.18	4.00
42	48.350	49.052	49.755	1.43	0.18	3.98
43	46.455	47.142	47.829	1.46	0.18	3.96
44	44.643	45.315	45.987	1.48	0.19	3.94
45	42.910	43.567	44.224	1.51	0.19	3.93
46	41.251	41.894	42.537	1.53	0.20	3.91
47	39.664	40.293	40.921	1.56	0.20	3.89
48	38.144	38.759	39.373	1.59	0.20	3.87
49	36.689	37.290	37.891	1.61	0.21	3.86
50	35.296	35.883	36.470	1.64	0.21	3.84
51	33.961	34.535	35.109	1.66	0.22	3.82
52	32.682	33.243	33.804	1.69	0.22	3.81
53	31.456	32.005	32.553	1.71	0.23	3.79
54	30.282	30.818	31.353	1.74	0.23	3.77

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,

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	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	29.156	29.680	30.203	1.76	0.23	3.75
56	28.077	28.589	29.100	1.79	0.24	3.74
57	27.043	27.543	28.042	1.81	0.24	3.72
58	26.051	26.540	27.028	1.84	0.25	3.70
59	25.101	25.578	26.055	1.86	0.25	3.68
60	24.189	24.656	25.122	1.89	0.26	3.66
61	23.315	23.771	24.226	1.92	0.26	3.65
62	22.477	22.922	23.367	1.94	0.27	3.63
63	21.674	22.109	22.543	1.97	0.27	3.61
64	20.903	21.328	21.753	1.99	0.28	3.59
65	20.163	20.579	20.994	2.02	0.28	3.57
66	19.454	19.860	20.266	2.04	0.29	3.55
67	18.774	19.170	19.567	2.07	0.29	3.53
68	18.121	18.509	18.896	2.09	0.30	3.50
69	17.494	17.873	18.252	2.12	0.30	3.48
70	16.893	17.263	17.634	2.15	0.31	3.46
71	16.315	16.677	17.039	2.17	0.32	3.44
72	15.761	16.115	16.469	2.20	0.32	3.42
73	15.228	15.574	15.920	2.22	0.33	3.40
74	14.716	15.055	15.393	2.25	0.33	3.38
75	14.224	14.555	14.886	2.27	0.34	3.37
76	13.751	14.075	14.398	2.30	0.34	3.35
77	13.296	13.612	13.929	2.33	0.35	3.33
78	12.858	13.167	13.477	2.35	0.35	3.32
79	12.436	12.739	13.041	2.37	0.36	3.30
80	12.030	12.326	12.622	2.40	0.37	3.27
81	11.642	11.932	12.221	2.43	0.37	3.25
82	11.267	11.551	11.834	2.45	0.38	3.24
83	10.905	11.182	11.459	2.48	0.38	3.24
84	10.555	10.826	11.097	2.50	0.39	3.23
85	10.218	10.483	10.748	2.53	0.39	3.22
86	9.893	10.152	10.411	2.55	0.40	3.20

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	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	9.579	9.833	10.086	2.58	0.40	3.19
88	9.277	9.525	9.773	2.60	0.41	3.17
89	8.986	9.228	9.471	2.63	0.42	3.16
90	8.705	8.942	9.180	2.66	0.42	3.14
91	8.434	8.667	8.899	2.68	0.43	3.12
92	8.174	8.401	8.628	2.70	0.44	3.10
93	7.923	8.145	8.368	2.73	0.44	3.09
94	7.681	7.899	8.116	2.75	0.45	3.07
95	7.448	7.661	7.874	2.78	0.46	3.05
96	7.222	7.431	7.640	2.81	0.46	3.03
97	7.005	7.210	7.414	2.84	0.47	3.02
98	6.796	6.996	7.196	2.86	0.48	3.01
99	6.594	6.789	6.985	2.88	0.48	2.99
100	6.398	6.590	6.782	2.91	0.49	2.97
101	6.210	6.397	6.585	2.93	0.49	2.96
102	6.027	6.211	6.395	2.96	0.50	2.95
103	5.851	6.031	6.211	2.98	0.51	2.94
104	5.681	5.857	6.033	3.00	0.51	2.92
105	5.516	5.689	5.861	3.03	0.52	2.91
106	5.356	5.526	5.695	3.07	0.53	2.90
107	5.202	5.368	5.533	3.08	0.53	2.89
108	5.053	5.215	5.378	3.12	0.54	2.88
109	4.908	5.067	5.226	3.14	0.55	2.87
110	4.768	4.924	5.080	3.17	0.55	2.86
111	4.633	4.786	4.938	3.19	0.56	2.85
112	4.502	4.652	4.801	3.21	0.57	2.84
113	4.375	4.522	4.668	3.24	0.57	2.82
114	4.253	4.397	4.540	3.26	0.58	2.81
115	4.134	4.275	4.416	3.30	0.59	2.79
116	4.020	4.158	4.296	3.32	0.60	2.77
117	3.909	4.045	4.180	3.35	0.61	2.75
118	3.803	3.935	4.068	3.37	0.62	2.73

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	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	3.700	3.830	3.960	3.39	0.63	2.70
120	3.601	3.728	3.855	3.41	0.66	2.56
121	3.514	3.639	3.764	3.44	0.70	2.46
122	3.426	3.549	3.672	3.47	0.68	2.53
123	3.338	3.459	3.580	3.50	0.68	2.58
124	3.252	3.371	3.489	3.52	0.67	2.62
125	3.166	3.283	3.399	3.55	0.67	2.65
126	3.083	3.197	3.311	3.57	0.67	2.66
127	0.001	3.113	0.001	0.00	0.00	2.67
128	2.921	3.031	3.141	3.62	0.68	2.67
129	2.843	2.951	3.058	3.65	0.68	2.67
130	2.768	2.873	2.979	3.67	0.68	2.68
131	2.693	2.796	2.900	3.70	0.69	2.67
132	2.622	2.724	2.825	3.72	0.71	2.64
133	2.553	2.653	2.752	3.75	0.71	2.63
134	2.487	2.585	2.682	3.77	0.72	2.61
135	2.422	2.518	2.613	3.80	0.73	2.61
136	2.360	2.453	2.547	3.82	0.74	2.58
137	2.299	2.391	2.484	3.85	0.75	2.55
138	2.241	2.331	2.421	3.87	0.77	2.53
139	2.185	2.273	2.362	3.90	0.78	2.51
140	2.130	2.217	2.304	3.92	0.79	2.49
141	2.077	2.163	2.248	3.95	0.80	2.46
142	2.027	2.111	2.195	3.98	0.81	2.44
143	1.977	2.060	2.142	4.00	0.82	2.44
144	1.929	2.010	2.091	4.03	0.83	2.42
145	1.883	1.963	2.042	4.05	0.84	2.41
146	1.837	1.916	1.994	4.08	0.85	2.40
147	1.794	1.871	1.947	4.11	0.86	2.38
148	1.751	1.827	1.902	4.13	0.87	2.37
149	1.710	1.784	1.858	4.15	0.88	2.37
150	1.669	1.742	1.815	4.18	0.88	2.37

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	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	1.630	1.702	1.773	4.20	0.89	2.35
152	1.592	1.662	1.732	4.23	0.90	2.36
153	1.554	1.623	1.692	4.26	0.90	2.36
154	1.517	1.585	1.653	4.28	0.91	2.35
155	1.482	1.549	1.615	4.31	0.92	2.34
156	1.447	1.513	1.578	4.33	0.92	2.35
157	1.413	1.478	1.542	4.36	0.93	2.33
158	1.381	1.444	1.507	4.38	0.94	2.33
159	1.348	1.410	1.472	4.41	0.94	2.34
160	1.317	1.378	1.439	4.43	0.95	2.33
161	1.286	1.346	1.406	4.46	0.97	2.30
162	1.257	1.316	1.375	4.48	0.98	2.29
163	1.228	1.286	1.344	4.51	0.99	2.29
164	1.200	1.257	1.314	4.53	1.00	2.27
165	1.173	1.229	1.285	4.56	1.02	2.23
166	1.147	1.202	1.257	4.58	1.05	2.19
167	1.122	1.176	1.230	4.61	1.05	2.19
168	1.097	1.151	1.204	4.63	1.08	2.14
169	1.074	1.127	1.179	4.66	1.11	2.09
170	1.052	1.104	1.155	4.68	1.02	2.30
171	1.025	1.076	1.127	4.71	0.94	2.51
172	1.000	1.050	1.099	4.74	1.00	2.36
173	0.978	1.027	1.075	4.76	1.07	2.22
174	0.956	1.004	1.052	4.79	1.06	2.25
175	0.934	0.981	1.029	4.81	1.12	2.15
176	0.915	0.962	1.008	4.83	1.20	2.02
177	0.897	0.942	0.988	4.86	1.21	2.01
178	0.879	0.924	0.969	4.89	1.17	2.09
179	0.859	0.904	0.948	4.91	1.26	1.94
180	0.845	0.889	0.933	4.94	1.22	2.03
181	0.825	0.868	0.911	4.97	1.19	2.08
182	0.810	0.853	0.896	4.99	1.38	1.81

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,						
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	0.795	0.837	0.879	5.02	1.24	2.02
184	0.778	0.819	0.860	5.04	1.20	2.10
185	0.762	0.802	0.843	5.07	1.23	2.06
186	0.746	0.786	0.826	5.09	1.19	2.14
187	0.729	0.769	0.808	5.11	1.35	1.90
188	0.718	0.757	0.796	5.14	1.29	1.99
189	0.700	0.739	0.777	5.17	1.16	2.23
190	0.686	0.724	0.762	5.19	1.25	2.08
191	0.671	0.708	0.745	5.22	1.34	1.96
192	0.660	0.696	0.733	5.24	1.36	1.93
193	0.646	0.682	0.717	5.27	1.26	2.08
194	0.633	0.668	0.703	5.30	1.20	2.20
195	0.617	0.652	0.687	5.32	1.21	2.20
196	0.605	0.639	0.673	5.35	1.45	1.85
197	0.595	0.629	0.662	5.36	1.40	1.91
198	0.582	0.615	0.648	5.40	1.31	2.06
199	0.570	0.603	0.636	5.42	1.57	1.72
200	0.562	0.594	0.627	5.45	1.45	1.88
201	0.549	0.581	0.613	5.48	1.24	2.20
202	0.538	0.569	0.600	5.50	1.37	2.01
203	0.527	0.558	0.589	5.52	1.46	1.89
204	0.517	0.548	0.578	5.55	1.48	1.88
205	0.507	0.537	0.567	5.57	1.67	1.67
206	0.500	0.530	0.560	5.61	1.68	1.67
207	0.490	0.520	0.549	5.62	1.45	1.94
208	0.481	0.510	0.538	5.65	1.55	1.82
209	0.473	0.501	0.529	5.67	1.72	1.65
210	0.465	0.493	0.521	5.70	1.76	1.62
211	0.457	0.485	0.513	5.71	1.54	1.86
212	0.448	0.475	0.502	5.75	1.50	1.92
213	0.440	0.467	0.494	5.76	1.81	1.60
214	0.434	0.460	0.487	5.80	1.78	1.63

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,

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	0.425	0.452	0.478	5.82	1.60	1.82
216	0.418	0.444	0.470	5.86	1.66	1.77
217	0.410	0.436	0.462	5.87	1.59	1.85
218	0.403	0.428	0.453	5.89	1.53	1.93
219	0.395	0.420	0.444	5.94	1.59	1.87
220	0.388	0.412	0.437	5.95	1.67	1.78
221	0.381	0.405	0.429	5.98	1.70	1.75
222	0.374	0.398	0.422	6.01	1.72	1.75
223	0.367	0.391	0.414	6.01	1.72	1.75
224	0.361	0.384	0.407	6.04	1.73	1.74
225	0.355	0.378	0.400	6.07	1.73	1.75
226	0.348	0.371	0.394	6.09	1.74	1.75
227	0.342	0.365	0.387	6.12	1.77	1.73
228	0.336	0.358	0.380	6.14	1.77	1.73
229	0.330	0.352	0.374	6.16	1.78	1.73
230	0.325	0.346	0.368	6.21	1.81	1.72
231	0.319	0.340	0.361	6.23	1.81	1.72
232	0.314	0.334	0.355	6.25	1.83	1.70
233	0.308	0.329	0.349	6.27	1.84	1.70
234	0.303	0.323	0.344	6.31	1.85	1.70
235	0.298	0.318	0.338	6.32	1.88	1.68
236	0.293	0.313	0.332	6.34	1.89	1.68
237	0.288	0.307	0.327	6.38	1.90	1.68
238	0.283	0.302	0.322	6.39	1.93	1.65
239	0.278	0.297	0.316	6.42	1.95	1.65
240	0.274	0.292	0.311	6.46	1.95	1.66
241	0.269	0.288	0.306	6.47	1.98	1.63
242	0.265	0.283	0.301	6.50	2.02	1.61
243	0.260	0.279	0.297	6.54	2.02	1.62
244	0.256	0.274	0.292	6.53	2.03	1.61
245	0.252	0.270	0.287	6.56	2.08	1.58
246	0.248	0.266	0.283	6.59	2.08	1.58

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,

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	0.244	0.261	0.279	6.62	2.11	1.57
248	0.240	0.257	0.274	6.65	2.14	1.55
249	0.236	0.253	0.270	6.67	2.17	1.54
250	0.233	0.250	0.266	6.69	1.94	1.72
251	0.228	0.245	0.261	6.72	1.91	1.76
252	0.225	0.241	0.257	6.75	2.14	1.58
253	0.221	0.237	0.253	6.77	2.14	1.58
254	0.218	0.233	0.249	6.79	2.17	1.56
255	0.214	0.230	0.246	6.83	2.21	1.54
256	0.211	0.226	0.242	6.83	2.21	1.55
257	0.208	0.223	0.238	6.87	2.19	1.57
258	0.204	0.219	0.235	6.91	2.23	1.55
259	0.201	0.216	0.231	6.92	2.27	1.53
260	0.198	0.213	0.228	6.96	2.28	1.53
261	0.195	0.210	0.224	6.97	2.28	1.53
262	0.192	0.206	0.221	6.98	2.29	1.53
263	0.189	0.203	0.218	7.04	2.31	1.53
264	0.186	0.200	0.214	7.05	2.31	1.52
265	0.183	0.197	0.211	7.08	2.36	1.50
266	0.180	0.194	0.208	7.11	2.38	1.49
267	0.178	0.191	0.205	7.11	2.39	1.49
268	0.175	0.189	0.202	7.14	2.40	1.49
269	0.172	0.186	0.199	7.16	2.42	1.48
270	0.170	0.183	0.196	7.19	2.44	1.48
271	0.167	0.180	0.193	7.21	2.45	1.47
272	0.165	0.178	0.191	7.23	2.47	1.46
273	0.162	0.175	0.188	7.28	2.45	1.48
274	0.160	0.173	0.185	7.30	2.47	1.48
275	0.158	0.170	0.183	7.32	2.54	1.44
276	0.155	0.168	0.180	7.34	2.56	1.43
277	0.153	0.165	0.177	7.38	2.54	1.45
278	0.151	0.163	0.175	7.40	2.56	1.44

$B_{25/50}$ = 3950K, R_{25} = 100kΩ, T_R = 25°C, $\frac{\Delta R_T}{R_T}$: ± 1%,						
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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
279	0.149	0.161	0.172	7.41	2.59	1.43
280	0.147	0.158	0.170	7.43	2.61	1.42
281	0.144	0.156	0.168	7.47	2.65	1.41
282	0.142	0.154	0.165	7.48	2.61	1.43
283	0.140	0.152	0.163	7.52	2.65	1.42
284	0.138	0.150	0.161	7.56	2.69	1.40
285	0.136	0.147	0.159	7.56	2.72	1.39
286	0.134	0.145	0.156	7.60	2.76	1.38
287	0.132	0.143	0.154	7.64	2.74	1.39
288	0.131	0.141	0.152	7.64	2.70	1.41
289	0.129	0.139	0.150	7.64	2.73	1.40
290	0.127	0.138	0.148	7.67	2.85	1.35
291	0.125	0.136	0.146	7.70	2.82	1.36
292	0.124	0.134	0.144	7.74	2.80	1.38
293	0.122	0.132	0.142	7.77	2.85	1.36
294	0.120	0.130	0.140	7.76	2.89	1.34
295	0.118	0.129	0.139	7.82	2.87	1.36
296	0.117	0.127	0.137	7.85	2.84	1.38
297	0.115	0.125	0.135	7.88	2.98	1.32
298	0.114	0.123	0.133	7.90	2.95	1.34
299	0.112	0.122	0.131	7.93	2.92	1.36
300	0.111	0.120	0.130	7.91	2.91	1.36

To ensure optimal performance and reliability, it is recommended to follow proper storage procedures for the ATH100KR8B3950K 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 ATH100KR8B3950K 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.
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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.

