Ultra-Stable Miniature Thermistor

ATH100KR8B3950K0.5%

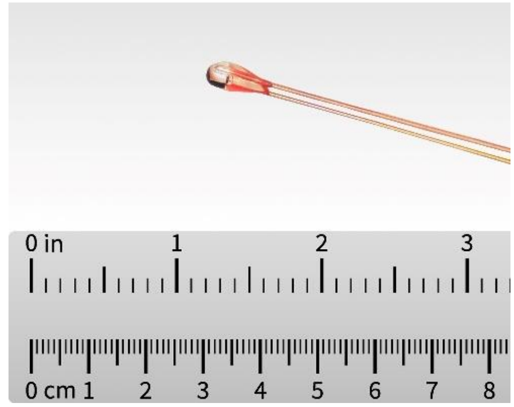

Figure 1. The Physical Photo of ATH100KR8B3950K0.5%

MAIN FEATURES

Glass Encapsulated for Long Term Stability & Reliability
High Stability: <0.1°C/year
Small Size: ϕ0.8mm ×1.8mm
High Resistance Accuracy: 0.5%
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 ATH100KR8B3950K0.5% 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 ATH100KR8B3950K0.5% thermistor, which boasts high precision and a glass encapsulation design. In contrast to conventional epoxy-encapsulated thermistors, the ATH100KR8B3950K0.5% offers superior long-term stability and a wider temperature range. Moreover, it has a compact size and a quick response time.

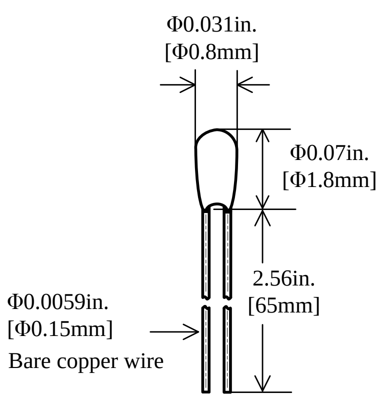

Figure 2. Side View of ATH100KR8B3950K0.5%

SPECIFICATIONS

Parameters	Symbol	Value
Nominal Resistance @ 25°C	R_{25}	100K ± 0.5%
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 ATH100KR8B3950K0.5% 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 ATH100KR8B3950K0.5% 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.

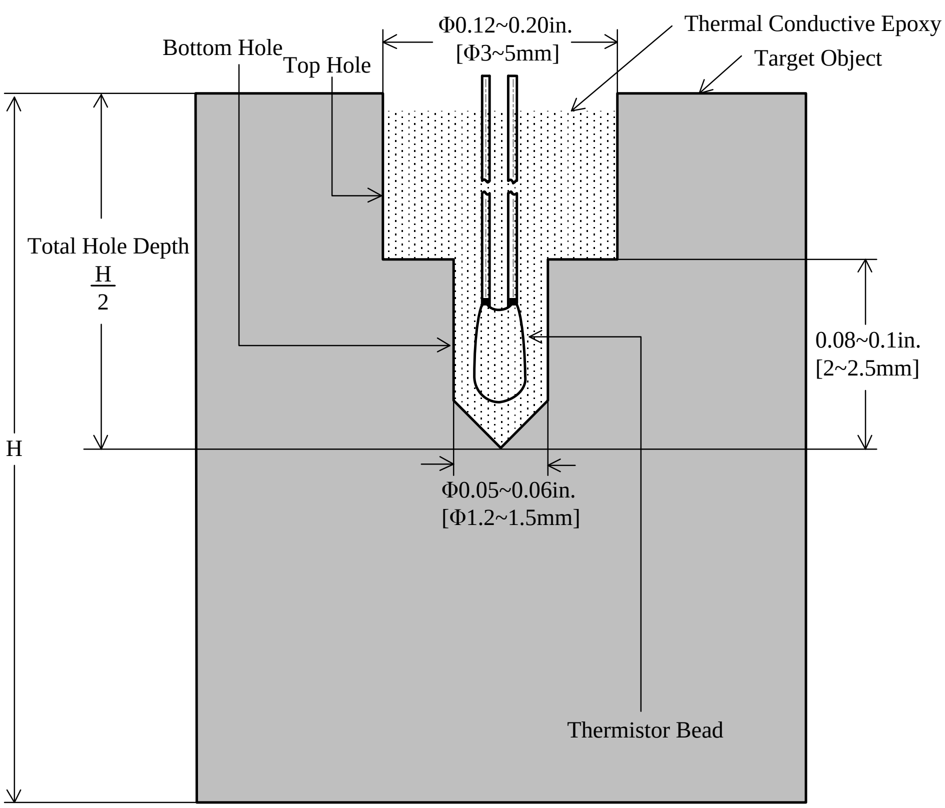

Figure 3. Section View of Recommended Counterbore Hole

PART NUMBER CONVENTION

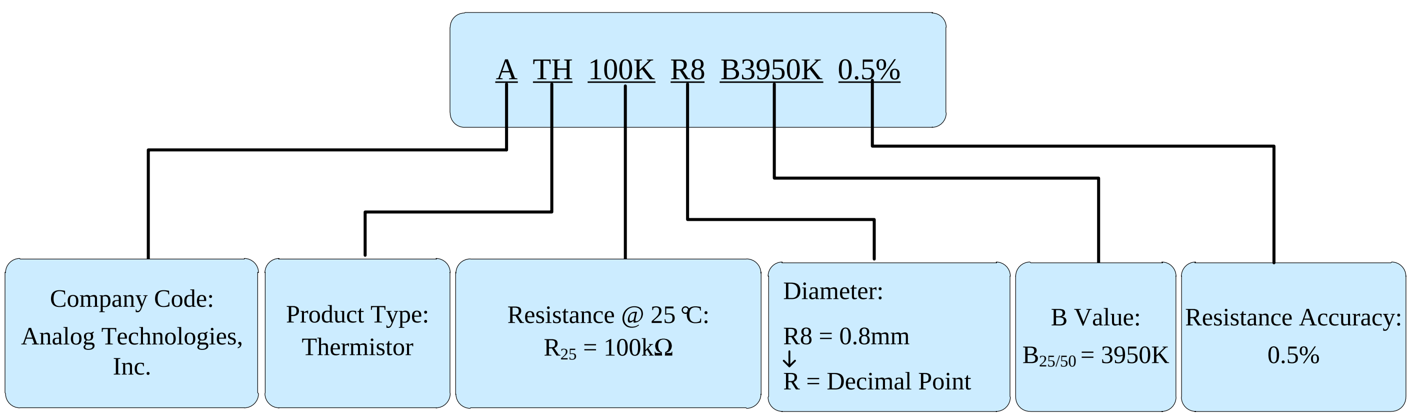

Figure 4. Part Number Convention of ATH100KR8B3950K0.5%

RESISTANCE TEMPERATURE CHARACTERISTICS

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
−50	5760.378	6063.556	6366.734	5.00	0.37	6.70
−49	5389.970	5670.071	5950.173	4.94	0.37	6.70
−48	5045.265	5304.105	5562.945	4.88	0.37	6.66
−47	4724.365	4963.611	5202.857	4.82	0.36	6.62
−46	4425.519	4646.702	4867.885	4.76	0.36	6.58
−45	4147.114	4351.641	4556.168	4.70	0.36	6.55
−44	3887.657	4076.822	4265.986	4.64	0.36	6.51
−43	3645.774	3820.765	3995.756	4.58	0.35	6.47
−42	3420.194	3582.106	3744.017	4.52	0.35	6.44
−41	3209.744	3359.582	3509.419	4.46	0.35	6.40
−40	3013.339	3152.028	3290.718	4.40	0.35	6.36
−39	2829.978	2958.371	3086.764	4.34	0.34	6.33
−38	2658.732	2777.614	2896.496	4.28	0.34	6.29
−37	2498.747	2608.840	2718.933	4.22	0.34	6.26
−36	2349.228	2451.198	2553.168	4.16	0.33	6.22
−35	2209.443	2303.903	2398.363	4.10	0.33	6.18
−34	2078.711	2166.227	2253.742	4.04	0.33	6.15
−33	1956.405	2037.497	2118.590	3.98	0.33	6.11
−32	1841.941	1917.091	1992.241	3.92	0.32	6.08
−31	1734.780	1804.431	1874.081	3.86	0.32	6.04
−30	1634.420	1698.982	1763.543	3.80	0.32	6.01
−29	1540.399	1600.248	1660.098	3.74	0.31	5.97
−28	1452.286	1507.772	1563.258	3.68	0.31	5.94
−27	1369.681	1421.126	1472.570	3.62	0.31	5.91
−26	1292.214	1339.915	1387.616	3.56	0.30	5.87
−25	1219.541	1263.773	1308.005	3.50	0.30	5.84
−24	1151.342	1192.359	1233.376	3.44	0.30	5.80
−23	1087.320	1125.357	1163.394	3.38	0.29	5.77
−22	1027.200	1062.474	1097.748	3.32	0.29	5.74
−21	970.725	1003.437	1036.149	3.26	0.29	5.67
−20	918.340	948.698	979.056	3.20	0.29	5.58

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	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
−19	869.385	897.568	925.752	3.14	0.28	5.55
−18	822.840	848.989	875.138	3.08	0.28	5.57
−17	778.722	802.972	827.222	3.02	0.27	5.57
−16	737.000	759.481	781.962	2.96	0.27	5.56
−15	697.613	718.448	739.283	2.90	0.26	5.55
−14	660.475	679.781	699.087	2.84	0.26	5.52
−13	625.488	643.374	661.259	2.78	0.25	5.49
−12	592.542	609.110	625.678	2.72	0.25	5.46
−11	561.527	576.872	592.216	2.66	0.25	5.42
−10	532.329	546.539	560.749	2.60	0.24	5.39
−9	504.838	517.995	531.152	2.54	0.24	5.35
−8	478.947	491.127	503.307	2.48	0.23	5.31
−7	454.552	465.825	477.098	2.42	0.23	5.27
−6	431.558	441.989	452.420	2.36	0.23	5.24
−5	409.873	419.522	429.171	2.30	0.22	5.20
−4	389.411	398.334	407.257	2.24	0.22	5.17
−3	370.094	378.342	386.589	2.18	0.21	5.14
−2	351.847	359.467	367.088	2.12	0.21	5.11
−1	334.601	341.639	348.677	2.06	0.20	5.07
0	318.295	324.791	331.287	2.00	0.20	5.05
1	302.870	308.861	314.853	1.94	0.19	5.02
2	288.271	293.794	299.317	1.88	0.19	4.99
3	274.448	279.536	284.624	1.82	0.18	4.96
4	261.357	266.039	270.722	1.76	0.18	4.94
5	248.954	253.259	257.565	1.70	0.17	4.91
6	237.199	241.154	245.109	1.64	0.17	4.89
7	226.056	229.685	233.314	1.58	0.16	4.86
8	215.490	218.816	222.142	1.52	0.16	4.84
9	205.470	208.514	211.559	1.46	0.15	4.81
10	195.966	198.748	201.530	1.40	0.15	4.79
11	186.949	189.488	192.027	1.34	0.14	4.76
12	178.393	180.706	183.019	1.28	0.14	4.73

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
13	170.274	172.377	174.480	1.22	0.13	4.71
14	162.568	164.476	166.384	1.16	0.12	4.68
15	155.254	156.980	158.707	1.10	0.12	4.65
16	148.309	149.868	151.426	1.04	0.11	4.62
17	141.715	143.118	144.520	0.98	0.11	4.60
18	135.453	136.711	137.968	0.92	0.10	4.57
19	129.504	130.628	131.751	0.86	0.09	4.54
20	123.852	124.851	125.850	0.80	0.09	4.51
21	118.481	119.364	120.247	0.74	0.08	4.48
22	113.374	114.151	114.927	0.68	0.08	4.45
23	108.518	109.195	109.872	0.62	0.07	4.43
24	103.898	104.483	105.068	0.56	0.06	4.40
25	99.501	100.001	100.501	0.50	0.06	4.37
26	95.232	95.735	96.238	0.53	0.06	4.35
27	91.168	91.673	92.178	0.55	0.06	4.33
28	87.296	87.802	88.308	0.58	0.07	4.31
29	83.606	84.112	84.618	0.60	0.07	4.29
30	80.085	80.590	81.096	0.63	0.07	4.27
31	76.724	77.228	77.732	0.65	0.08	4.26
32	73.512	74.014	74.516	0.68	0.08	4.25
33	70.441	70.940	71.440	0.70	0.08	4.24
34	67.501	67.997	68.493	0.73	0.09	4.24
35	64.684	65.176	65.668	0.75	0.09	4.19
36	62.050	62.538	63.025	0.78	0.09	4.12
37	59.538	60.022	60.505	0.81	0.10	4.10
38	57.142	57.621	58.100	0.83	0.10	4.07
39	54.855	55.329	55.803	0.86	0.11	4.05
40	52.672	53.141	53.609	0.88	0.11	4.03
41	50.587	51.050	51.513	0.91	0.11	4.00
42	48.595	49.052	49.510	0.93	0.12	3.98
43	46.690	47.142	47.594	0.96	0.12	3.96
44	44.869	45.315	45.761	0.98	0.12	3.94

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
45	43.127	43.567	44.007	1.01	0.13	3.93
46	41.461	41.894	42.327	1.03	0.13	3.91
47	39.865	40.293	40.720	1.06	0.14	3.89
48	38.338	38.759	39.180	1.09	0.14	3.87
49	36.876	37.290	37.704	1.11	0.14	3.86
50	35.475	35.883	36.291	1.14	0.15	3.84
51	34.134	34.535	34.936	1.16	0.15	3.82
52	32.848	33.243	33.637	1.19	0.16	3.81
53	31.616	32.005	32.393	1.21	0.16	3.79
54	30.436	30.818	31.199	1.24	0.16	3.77
55	29.305	29.680	30.055	1.26	0.17	3.75
56	28.220	28.589	28.957	1.29	0.17	3.74
57	27.181	27.543	27.905	1.31	0.18	3.72
58	26.184	26.540	26.895	1.34	0.18	3.70
59	25.229	25.578	25.927	1.36	0.19	3.68
60	24.313	24.656	24.998	1.39	0.19	3.66
61	23.434	23.771	24.108	1.42	0.19	3.65
62	22.592	22.922	23.253	1.44	0.20	3.63
63	21.784	22.109	22.433	1.47	0.20	3.61
64	21.009	21.328	21.646	1.49	0.21	3.59
65	20.266	20.579	20.891	1.52	0.21	3.57
66	19.554	19.860	20.167	1.54	0.22	3.55
67	18.870	19.170	19.471	1.57	0.22	3.53
68	18.213	18.509	18.804	1.60	0.23	3.50
69	17.584	17.873	18.163	1.62	0.23	3.48
70	16.979	17.263	17.547	1.65	0.24	3.46
71	16.399	16.677	16.956	1.67	0.24	3.44
72	15.841	16.115	16.388	1.70	0.25	3.42
73	15.306	15.574	15.842	1.72	0.25	3.40
74	14.792	15.055	15.318	1.75	0.26	3.38
75	14.297	14.555	14.813	1.77	0.26	3.37
76	13.822	14.075	14.328	1.80	0.27	3.35

$B_{25/50}$ = 3950K0.5, 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)
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77	13.364	13.612	13.861	1.83	0.27	3.33
78	12.924	13.167	13.411	1.85	0.28	3.32
79	12.500	12.739	12.977	1.87	0.28	3.30
80	12.092	12.326	12.560	1.90	0.29	3.27
81	11.702	11.932	12.161	1.92	0.30	3.25
82	11.325	11.551	11.776	1.95	0.30	3.24
83	10.961	11.182	11.403	1.98	0.31	3.24
84	10.610	10.826	11.043	2.00	0.31	3.23
85	10.271	10.483	10.695	2.02	0.31	3.22
86	9.944	10.152	10.360	2.05	0.32	3.20
87	9.628	9.833	10.037	2.08	0.33	3.19
88	9.324	9.525	9.725	2.11	0.33	3.17
89	9.032	9.228	9.425	2.13	0.34	3.16
90	8.750	8.942	9.135	2.15	0.34	3.14
91	8.478	8.667	8.856	2.18	0.35	3.12
92	8.216	8.401	8.586	2.20	0.35	3.10
93	7.964	8.145	8.327	2.23	0.36	3.09
94	7.720	7.899	8.077	2.26	0.37	3.07
95	7.486	7.661	7.835	2.28	0.37	3.05
96	7.260	7.431	7.602	2.30	0.38	3.03
97	7.041	7.210	7.378	2.34	0.39	3.02
98	6.831	6.996	7.161	2.36	0.39	3.01
99	6.628	6.789	6.951	2.38	0.40	2.96
100	6.435	6.594	6.753	2.41	0.41	2.97
101	6.242	6.397	6.553	2.43	0.41	2.99
102	6.058	6.211	6.364	2.46	0.42	2.95
103	5.881	6.031	6.181	2.49	0.42	2.94
104	5.710	5.857	6.004	2.51	0.43	2.92
105	5.544	5.689	5.833	2.54	0.44	2.91
106	5.384	5.526	5.667	2.56	0.44	2.90
107	5.229	5.368	5.507	2.59	0.45	2.89
108	5.079	5.215	5.351	2.61	0.45	2.88

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	Minimum	Nominal	Maximum	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
109	4.934	5.067	5.201	2.63	0.46	2.87
110	4.793	4.924	5.055	2.66	0.47	2.86
111	4.657	4.786	4.914	2.69	0.47	2.85
112	4.525	4.652	4.778	2.72	0.48	2.84
113	4.398	4.522	4.646	2.74	0.49	2.82
114	4.275	4.397	4.518	2.76	0.49	2.81
115	4.156	4.275	4.394	2.78	0.50	2.79
116	4.041	4.158	4.275	2.81	0.51	2.77
117	3.930	4.045	4.160	2.84	0.52	2.75
118	3.822	3.935	4.048	2.87	0.53	2.73
119	3.719	3.830	3.941	2.90	0.54	2.70
120	3.619	3.728	3.837	2.92	0.57	2.56
121	3.532	3.639	3.746	2.94	0.60	2.46
122	3.444	3.549	3.654	2.96	0.58	2.53
123	3.356	3.459	3.563	2.99	0.58	2.58
124	3.269	3.371	3.473	3.03	0.58	2.62
125	3.183	3.283	3.383	3.04	0.58	2.65
126	3.099	3.197	3.295	3.07	0.58	2.66
127	3.016	3.113	3.209	3.09	0.58	2.67
128	2.936	3.031	3.126	3.12	0.58	2.67
129	2.858	2.951	3.044	3.15	0.59	2.67
130	2.782	2.873	2.965	3.17	0.59	2.68
131	2.707	2.796	2.886	3.20	0.60	2.67
132	2.636	2.724	2.812	3.22	0.61	2.64
133	2.567	2.653	2.739	3.25	0.62	2.63
134	2.500	2.585	2.669	3.27	0.63	2.61
135	2.435	2.518	2.601	3.30	0.63	2.61
136	2.372	2.453	2.535	3.33	0.65	2.58
137	2.311	2.391	2.472	3.35	0.66	2.55
138	2.252	2.331	2.410	3.38	0.67	2.53
139	2.196	2.273	2.351	3.40	0.68	2.51
140	2.141	2.217	2.293	3.43	0.69	2.49

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141	2.088	2.163	2.237	3.45	0.70	2.46
142	2.037	2.111	2.184	3.48	0.71	2.44
143	1.988	2.060	2.132	3.50	0.72	2.44
144	1.939	2.010	2.081	3.53	0.73	2.42
145	1.893	1.963	2.032	3.55	0.74	2.41
146	1.847	1.916	1.984	3.58	0.74	2.40
147	1.803	1.871	1.938	3.60	0.76	2.38
148	1.760	1.827	1.893	3.63	0.77	2.37
149	1.719	1.784	1.849	3.65	0.77	2.37
150	1.678	1.742	1.806	3.68	0.78	2.37
151	1.639	1.702	1.765	3.70	0.79	2.35
152	1.600	1.662	1.724	3.73	0.79	2.36
153	1.562	1.623	1.684	3.76	0.80	2.36
154	1.525	1.585	1.645	3.78	0.80	2.35
155	1.490	1.549	1.608	3.80	0.81	2.34
156	1.455	1.513	1.571	3.83	0.82	2.35
157	1.421	1.478	1.535	3.86	0.83	2.33
158	1.388	1.444	1.500	3.89	0.83	2.33
159	1.355	1.410	1.465	3.91	0.83	2.34
160	1.324	1.378	1.432	3.93	0.85	2.33
161	1.293	1.346	1.399	3.96	0.86	2.30
162	1.263	1.316	1.368	3.98	0.87	2.29
163	1.234	1.286	1.337	4.01	0.88	2.29
164	1.206	1.257	1.308	4.03	0.89	2.27
165	1.179	1.229	1.279	4.06	0.91	2.23
166	1.153	1.202	1.251	4.08	0.93	2.19
167	1.128	1.176	1.225	4.12	0.94	2.19
168	1.103	1.151	1.198	4.14	0.97	2.14
169	1.080	1.127	1.174	4.16	1.00	2.09
170	1.057	1.104	1.150	4.19	0.91	2.30
171	1.031	1.076	1.121	4.21	0.84	2.51
172	1.005	1.050	1.094	4.24	0.90	2.36

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
173	0.983	1.027	1.070	4.27	0.96	2.22
174	0.961	1.004	1.047	4.29	0.95	2.25
175	0.939	0.981	1.024	4.31	1.00	2.15
176	0.920	0.962	1.004	4.34	1.07	2.02
177	0.901	0.942	0.984	4.36	1.09	2.01
178	0.884	0.924	0.965	4.39	1.05	2.09
179	0.864	0.904	0.944	4.41	1.14	1.94
180	0.850	0.889	0.929	4.44	1.09	2.03
181	0.829	0.868	0.906	4.46	1.07	2.08
182	0.815	0.853	0.891	4.49	1.24	1.81
183	0.799	0.837	0.875	4.52	1.12	2.02
184	0.782	0.819	0.856	4.54	1.08	2.10
185	0.766	0.802	0.839	4.56	1.11	2.06
186	0.750	0.786	0.822	4.59	1.07	2.14
187	0.733	0.769	0.804	4.62	1.22	1.90
188	0.722	0.757	0.792	4.64	1.16	1.99
189	0.704	0.739	0.773	4.67	1.05	2.23
190	0.690	0.724	0.758	4.70	1.13	2.08
191	0.675	0.708	0.742	4.71	1.21	1.96
192	0.663	0.696	0.729	4.74	1.23	1.93
193	0.649	0.682	0.714	4.77	1.14	2.08
194	0.636	0.668	0.700	4.79	1.09	2.20
195	0.621	0.652	0.684	4.82	1.09	2.20
196	0.608	0.639	0.670	4.85	1.31	1.85
197	0.598	0.629	0.659	4.87	1.28	1.91
198	0.585	0.615	0.645	4.89	1.19	2.06
199	0.573	0.603	0.633	4.92	1.18	2.09
200	0.561	0.590	0.619	4.95	1.30	1.90
201	0.552	0.581	0.610	4.98	1.36	1.83
202	0.540	0.569	0.597	4.99	1.24	2.01
203	0.530	0.558	0.586	5.02	1.33	1.89
204	0.520	0.548	0.575	5.04	1.34	1.88

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
205	0.510	0.537	0.564	5.06	1.52	1.67
206	0.503	0.530	0.557	5.10	1.53	1.67
207	0.493	0.520	0.546	5.12	1.32	1.94
208	0.483	0.510	0.536	5.14	1.41	1.82
209	0.475	0.501	0.527	5.17	1.57	1.65
210	0.468	0.493	0.519	5.19	1.60	1.62
211	0.460	0.485	0.510	5.22	1.41	1.86
212	0.450	0.475	0.500	5.24	1.37	1.92
213	0.442	0.467	0.491	5.27	1.65	1.60
214	0.436	0.460	0.485	5.30	1.63	1.63
215	0.428	0.452	0.476	5.34	1.47	1.82
216	0.420	0.444	0.468	5.34	1.51	1.77
217	0.413	0.436	0.459	5.37	1.45	1.85
218	0.405	0.428	0.451	5.40	1.40	1.93
219	0.397	0.420	0.442	5.44	1.45	1.87
220	0.390	0.412	0.435	5.46	1.53	1.78
221	0.383	0.405	0.427	5.48	1.56	1.75
222	0.376	0.398	0.420	5.51	1.58	1.75
223	0.369	0.391	0.413	5.53	1.58	1.75
224	0.363	0.384	0.405	5.55	1.59	1.74
225	0.357	0.378	0.399	5.56	1.59	1.75
226	0.350	0.371	0.392	5.61	1.60	1.75
227	0.344	0.365	0.385	5.62	1.63	1.73
228	0.338	0.358	0.379	5.64	1.63	1.73
229	0.332	0.352	0.372	5.68	1.64	1.73
230	0.326	0.346	0.366	5.69	1.66	1.72
231	0.321	0.340	0.360	5.73	1.67	1.72
232	0.315	0.334	0.354	5.74	1.68	1.70
233	0.310	0.329	0.348	5.78	1.70	1.70
234	0.304	0.323	0.342	5.82	1.71	1.70
235	0.299	0.318	0.336	5.82	1.73	1.68
236	0.294	0.313	0.331	5.86	1.74	1.68

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
237	0.289	0.307	0.325	5.89	1.76	1.68
238	0.284	0.302	0.320	5.89	1.78	1.65
239	0.280	0.297	0.315	5.92	1.80	1.65
240	0.275	0.292	0.310	5.95	1.79	1.66
241	0.270	0.288	0.305	5.98	1.83	1.63
242	0.266	0.283	0.300	6.01	1.87	1.61
243	0.262	0.279	0.295	6.03	1.87	1.62
244	0.257	0.274	0.291	6.06	1.89	1.61
245	0.253	0.270	0.286	6.08	1.93	1.58
246	0.249	0.266	0.282	6.10	1.93	1.58
247	0.245	0.261	0.277	6.12	1.95	1.57
248	0.242	0.257	0.273	6.14	1.98	1.55
249	0.238	0.253	0.269	6.16	2.00	1.54
250	0.234	0.250	0.265	6.21	1.80	1.72
251	0.230	0.245	0.260	6.23	1.77	1.76
252	0.226	0.241	0.256	6.25	1.98	1.58
253	0.222	0.237	0.252	6.28	1.99	1.58
254	0.219	0.233	0.248	6.30	2.01	1.56
255	0.215	0.230	0.244	6.31	2.04	1.54
256	0.212	0.226	0.241	6.34	2.05	1.55
257	0.209	0.223	0.237	6.37	2.03	1.57
258	0.205	0.219	0.233	6.41	2.07	1.55
259	0.202	0.216	0.230	6.44	2.11	1.53
260	0.199	0.213	0.226	6.44	2.11	1.53
261	0.196	0.210	0.223	6.47	2.12	1.53
262	0.193	0.206	0.220	6.50	2.13	1.53
263	0.190	0.203	0.216	6.52	2.14	1.53
264	0.187	0.200	0.213	6.55	2.15	1.52
265	0.184	0.197	0.210	6.57	2.19	1.50
266	0.181	0.194	0.207	6.59	2.21	1.49
267	0.179	0.191	0.204	6.64	2.23	1.49
268	0.176	0.189	0.201	6.66	2.24	1.49

$B_{25/50}$ = 3950K0.5, 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	$\frac{\Delta R_T}{R_T}$	$\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$	$\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$
269	0.173	0.186	0.198	6.68	2.25	1.48
270	0.171	0.183	0.195	6.69	2.27	1.48
271	0.168	0.180	0.192	6.71	2.28	1.47
272	0.166	0.178	0.190	6.72	2.30	1.46
273	0.163	0.175	0.187	6.77	2.28	1.48
274	0.161	0.173	0.184	6.81	2.30	1.48
275	0.158	0.170	0.182	6.82	2.37	1.44
276	0.156	0.168	0.179	6.86	2.40	1.43
277	0.154	0.165	0.177	6.87	2.36	1.45
278	0.152	0.163	0.174	6.91	2.39	1.44
279	0.149	0.161	0.172	6.92	2.41	1.43
280	0.147	0.158	0.169	6.95	2.44	1.42
281	0.145	0.156	0.167	6.99	2.48	1.41
282	0.143	0.154	0.165	7.02	2.45	1.43
283	0.141	0.152	0.162	7.03	2.48	1.42
284	0.139	0.150	0.160	7.02	2.50	1.40
285	0.137	0.147	0.158	7.06	2.54	1.39
286	0.135	0.145	0.156	7.08	2.58	1.38
287	0.133	0.143	0.154	7.11	2.55	1.39
288	0.131	0.141	0.152	7.14	2.53	1.41
289	0.129	0.139	0.149	7.17	2.56	1.40
290	0.128	0.138	0.147	7.20	2.68	1.35
291	0.126	0.136	0.145	7.18	2.64	1.36
292	0.124	0.134	0.144	7.25	2.62	1.38
293	0.122	0.132	0.142	7.27	2.67	1.36
294	0.121	0.130	0.140	7.30	2.71	1.34
295	0.119	0.129	0.138	7.32	2.69	1.36
296	0.117	0.127	0.136	7.34	2.66	1.38
297	0.116	0.125	0.134	7.36	2.79	1.32
298	0.114	0.123	0.133	7.37	2.76	1.34
299	0.113	0.122	0.131	7.44	2.74	1.36
300	0.111	0.120	0.129	7.45	2.74	1.36

To ensure optimal performance and reliability, it is recommended to follow proper storage procedures for the ATH100KR8B3950K0.5% 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 ATH100KR8B3950K0.5% 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.
3. This means that while ATI may provide information about the typical requirements and applications of their products, they cannot guarantee that their products will be suitable for all customer applications. It is the responsibility of the customer to evaluate whether an ATI product with the specified properties is appropriate for their particular application.
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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.