# Ultra-Stable Miniature Thermistor

## ATH10KR55B3950K

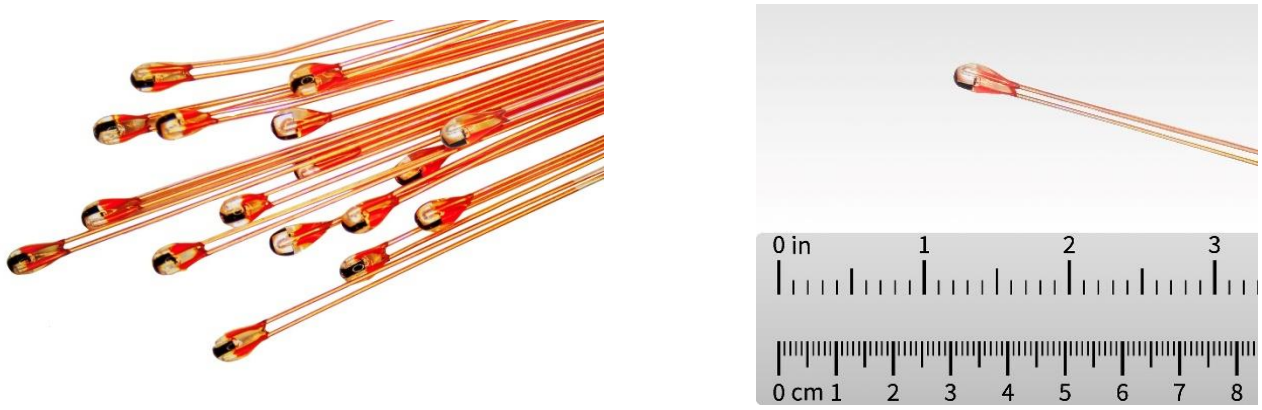


Figure 1. The Physical Photo of ATH10KR55B3950K

## MAIN FEATURES

Glass Encapsulated for Long Term Stability & Reliability
High Stability: <0.1°C/year
Small Size: ϕ0.55mm ×1.20mm
High Resistance Accuracy: 0.5%
Quick Response Time: 1s
Wide Temp. Range: –30°C to 300°C
Leads: dumet wires (copper-clad FeNi)
100% Lead (Pb)-free and RoHS Compliant

## APPLICATIONS

The ATH10KR55B3950K 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 ATH10KR55B3950K thermistor, which boasts high precision and a glass encapsulation design. In contrast to conventional epoxy-encapsulated thermistors, the ATH10KR55B3950K offers superior long-term stability and a wider temperature range. Moreover, it has a compact size and a quick response time.

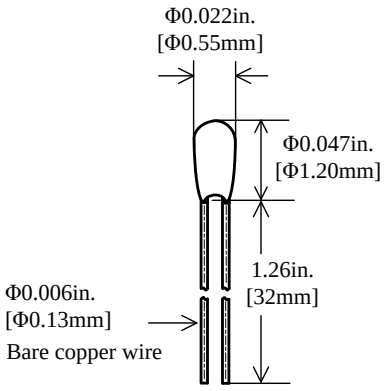


Figure 2. Side View of ATH10KR55B3950K

## SPECIFICATIONS

| Parameters | Symbol | Value |
|---|---|---|
| Nominal Resistance @ 25°C | $R_{25}$ | 10K ± 1% |
| B Value @ 25°C /50°C | $B_{25/50}$ | 3950K ± 1% |
| Thermistor Diameter | $D_T$ | 0.55 ± 0.1mm |
| Thermistor Length | $L_T$ | 1.20mm |
| Lead Diameter | $D_L$ | 0.13mm |
| Lead Length | $L_L$ | 32 ± 5mm |
| Dissipation Factor | $\delta_{th}$ | 0.25mW/°C |
| Insulation Resistance | $R_{is}$ | >100MΩ |
| Time Constant | $\tau_c$ | 1s (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 ATH10KR55B3950K 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 ATH10KR55B3950K 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.

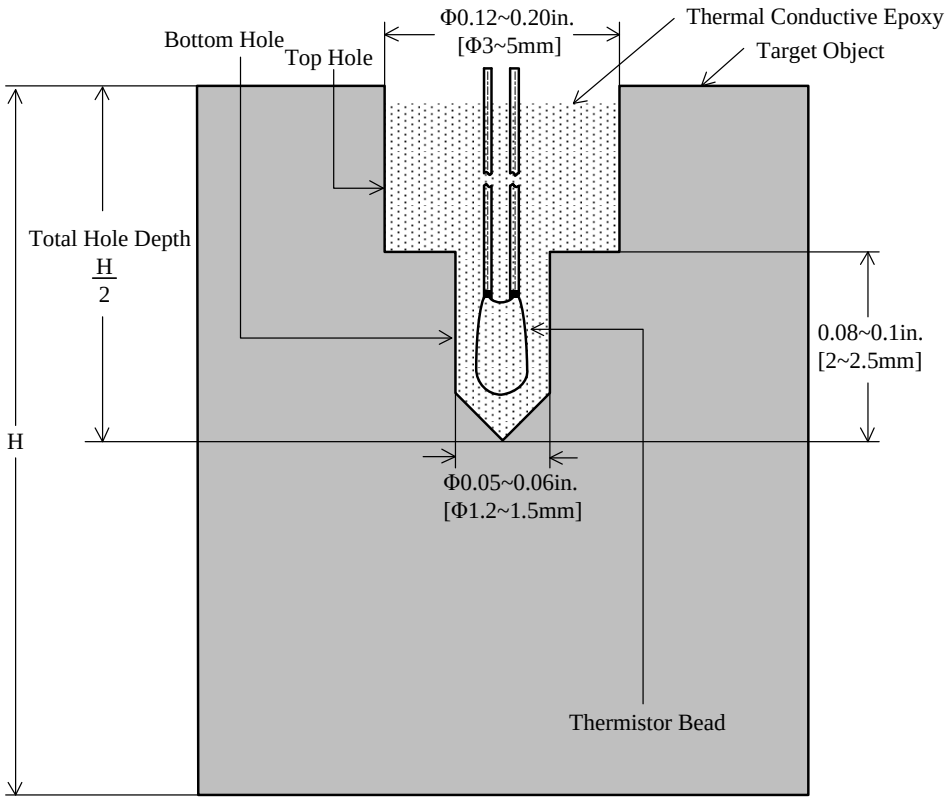


Figure 3. Section View of Recommended Counterbore Hole

## PART NUMBER CONVENTION

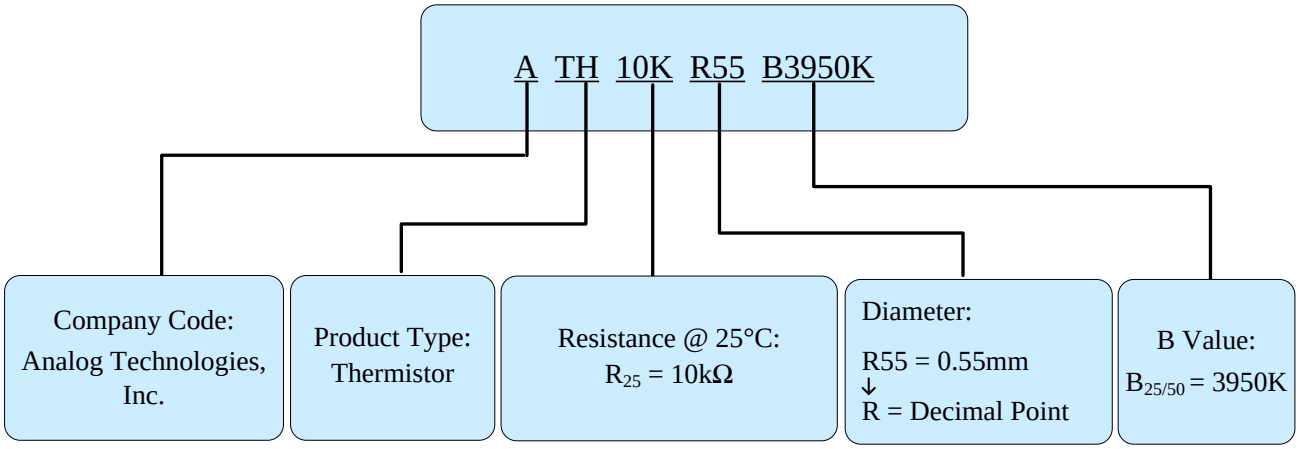


Figure 4. Part Number Convention of ATH10KR55B3950K


 

## RESISTANCE TEMPERATURE CHARACTERISTICS

$B_{25/50}$ = 3950K, $R_{25}$ = 10kΩ, $T_R$ = 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 | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| –30 | 167.132 | 173.756 | 180.625 | 3.88 | 0.33 | 5.99 |
| –29 | 157.415 | 163.653 | 170.123 | 3.88 | 0.33 | 5.97 |
| –28 | 148.335 | 154.214 | 160.310 | 3.88 | 0.33 | 5.92 |
| –27 | 139.846 | 145.388 | 151.136 | 3.88 | 0.33 | 5.87 |
| –26 | 131.906 | 137.134 | 142.555 | 3.88 | 0.33 | 5.83 |
| –25 | 124.858 | 129.409 | 134.111 | 3.58 | 0.31 | 5.79 |
| –24 | 117.852 | 122.148 | 126.587 | 3.58 | 0.31 | 5.75 |
| –23 | 111.298 | 115.354 | 119.546 | 3.58 | 0.31 | 5.70 |
| –22 | 105.156 | 108.988 | 112.949 | 3.58 | 0.32 | 5.66 |
| –21 | 99.397 | 103.020 | 106.763 | 3.58 | 0.32 | 5.61 |
| –20 | 94.275 | 97.422 | 100.663 | 3.28 | 0.29 | 5.69 |
| –19 | 88.956 | 91.925 | 94.983 | 3.28 | 0.28 | 5.79 |
| –18 | 83.980 | 86.783 | 89.670 | 3.28 | 0.29 | 5.74 |
| –17 | 79.318 | 81.966 | 84.693 | 3.28 | 0.29 | 5.69 |
| –16 | 74.948 | 77.450 | 80.027 | 3.28 | 0.29 | 5.65 |
| –15 | 71.054 | 73.215 | 75.435 | 2.99 | 0.27 | 5.58 |
| –14 | 67.238 | 69.283 | 71.384 | 2.99 | 0.27 | 5.50 |
| –13 | 63.657 | 65.594 | 67.583 | 2.99 | 0.27 | 5.45 |
| –12 | 60.293 | 62.127 | 64.011 | 2.99 | 0.28 | 5.41 |
| –11 | 57.130 | 58.868 | 60.653 | 2.99 | 0.28 | 5.37 |
| –10 | 54.305 | 55.803 | 57.335 | 2.71 | 0.25 | 5.39 |
| –9 | 51.435 | 52.853 | 54.304 | 2.71 | 0.25 | 5.41 |
| –8 | 48.738 | 50.082 | 51.457 | 2.71 | 0.25 | 5.37 |
| –7 | 46.202 | 47.475 | 48.779 | 2.71 | 0.25 | 5.33 |
| –6 | 43.815 | 45.022 | 46.259 | 2.71 | 0.26 | 5.29 |
| –5 | 41.679 | 42.713 | 43.769 | 2.45 | 0.23 | 5.26 |
| –4 | 39.551 | 40.532 | 41.534 | 2.45 | 0.23 | 5.22 |
| –3 | 37.547 | 38.479 | 39.430 | 2.45 | 0.24 | 5.18 |
| –2 | 35.659 | 36.544 | 37.447 | 2.45 | 0.24 | 5.14 |
| –1 | 33.879 | 34.720 | 35.578 | 2.45 | 0.24 | 5.11 |
| 0 | 32.284 | 32.999 | 33.726 | 2.19 | 0.21 | 5.14 |


 

$B_{25/50}$ = 3950K, $R_{25}$ = 10kΩ, $T_R$ = 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 | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| 1 | 30.650 | 31.329 | 32.019 | 2.19 | 0.21 | 5.18 |
| 2 | 29.111 | 29.756 | 30.412 | 2.19 | 0.21 | 5.14 |
| 3 | 27.660 | 28.273 | 28.896 | 2.19 | 0.21 | 5.10 |
| 4 | 26.291 | 26.873 | 27.466 | 2.19 | 0.22 | 5.06 |
| 5 | 25.062 | 25.552 | 26.050 | 1.93 | 0.19 | 4.98 |
| 6 | 23.862 | 24.330 | 24.804 | 1.93 | 0.20 | 4.89 |
| 7 | 22.730 | 23.175 | 23.626 | 1.93 | 0.20 | 4.85 |
| 8 | 21.658 | 22.082 | 22.512 | 1.93 | 0.20 | 4.81 |
| 9 | 20.644 | 21.049 | 21.459 | 1.93 | 0.20 | 4.78 |
| 10 | 19.733 | 20.070 | 20.411 | 1.69 | 0.17 | 4.83 |
| 11 | 18.788 | 19.109 | 19.434 | 1.69 | 0.17 | 4.89 |
| 12 | 17.896 | 18.202 | 18.511 | 1.69 | 0.17 | 4.85 |
| 13 | 17.052 | 17.343 | 17.638 | 1.69 | 0.18 | 4.82 |
| 14 | 16.253 | 16.531 | 16.812 | 1.69 | 0.18 | 4.78 |
| 15 | 15.534 | 15.762 | 15.992 | 1.45 | 0.15 | 4.73 |
| 16 | 14.823 | 15.041 | 15.260 | 1.45 | 0.16 | 4.67 |
| 17 | 14.150 | 14.358 | 14.568 | 1.45 | 0.16 | 4.63 |
| 18 | 13.512 | 13.711 | 13.911 | 1.45 | 0.16 | 4.60 |
| 19 | 12.907 | 13.097 | 13.288 | 1.45 | 0.16 | 4.57 |
| 20 | 12.361 | 12.514 | 12.668 | 1.22 | 0.13 | 4.55 |
| 21 | 11.812 | 11.958 | 12.105 | 1.22 | 0.13 | 4.53 |
| 22 | 11.291 | 11.431 | 11.571 | 1.22 | 0.14 | 4.50 |
| 23 | 10.811 | 10.930 | 11.049 | 1.09 | 0.12 | 4.47 |
| 24 | 10.345 | 10.454 | 10.563 | 1.04 | 0.12 | 4.44 |
| 25 | 9.901 | 10.000 | 10.101 | 1.00 | 0.11 | 4.39 |
| 26 | 9.476 | 9.576 | 9.676 | 1.04 | 0.12 | 4.33 |
| 27 | 9.076 | 9.172 | 9.268 | 1.04 | 0.12 | 4.30 |
| 28 | 8.688 | 8.787 | 8.886 | 1.13 | 0.13 | 4.28 |
| 29 | 8.325 | 8.420 | 8.516 | 1.13 | 0.13 | 4.25 |
| 30 | 7.973 | 8.071 | 8.170 | 1.22 | 0.14 | 4.24 |
| 31 | 7.642 | 7.736 | 7.830 | 1.22 | 0.14 | 4.24 |
| 32 | 7.326 | 7.416 | 7.507 | 1.22 | 0.14 | 4.21 |



 

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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) |
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| | Minimum | Nominal | Maximum | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| 33 | 7.025 | 7.112 | 7.198 | 1.22 | 0.15 | 4.18 |
| 34 | 6.739 | 6.822 | 6.905 | 1.22 | 0.15 | 4.15 |
| 35 | 6.452 | 6.545 | 6.639 | 1.43 | 0.17 | 4.17 |
| 36 | 6.187 | 6.276 | 6.366 | 1.43 | 0.17 | 4.18 |
| 37 | 5.934 | 6.020 | 6.106 | 1.43 | 0.17 | 4.15 |
| 38 | 5.694 | 5.776 | 5.859 | 1.43 | 0.17 | 4.13 |
| 39 | 5.464 | 5.543 | 5.623 | 1.43 | 0.17 | 4.10 |
| 40 | 5.235 | 5.321 | 5.409 | 1.63 | 0.20 | 4.08 |
| 41 | 5.026 | 5.109 | 5.193 | 1.63 | 0.20 | 4.06 |
| 42 | 4.827 | 4.907 | 4.987 | 1.63 | 0.20 | 4.03 |
| 43 | 4.637 | 4.714 | 4.791 | 1.63 | 0.20 | 4.00 |
| 44 | 4.456 | 4.529 | 4.604 | 1.63 | 0.21 | 3.98 |
| 45 | 4.274 | 4.353 | 4.433 | 1.83 | 0.23 | 3.95 |
| 46 | 4.109 | 4.185 | 4.262 | 1.83 | 0.23 | 3.92 |
| 47 | 3.952 | 4.025 | 4.099 | 1.83 | 0.23 | 3.90 |
| 48 | 3.801 | 3.871 | 3.943 | 1.83 | 0.24 | 3.87 |
| 49 | 3.657 | 3.725 | 3.794 | 1.83 | 0.24 | 3.85 |
| 50 | 3.513 | 3.585 | 3.658 | 2.02 | 0.27 | 3.76 |
| 51 | 3.386 | 3.455 | 3.526 | 2.02 | 0.28 | 3.66 |
| 52 | 3.265 | 3.332 | 3.400 | 2.02 | 0.28 | 3.64 |
| 53 | 3.148 | 3.213 | 3.278 | 2.02 | 0.28 | 3.62 |
| 54 | 3.037 | 3.099 | 3.162 | 2.02 | 0.28 | 3.59 |
| 55 | 2.925 | 2.990 | 3.057 | 2.21 | 0.30 | 3.64 |
| 56 | 2.818 | 2.882 | 2.946 | 2.21 | 0.30 | 3.69 |
| 57 | 2.717 | 2.778 | 2.840 | 2.21 | 0.30 | 3.66 |
| 58 | 2.619 | 2.678 | 2.738 | 2.21 | 0.30 | 3.64 |
| 59 | 2.526 | 2.583 | 2.640 | 2.21 | 0.31 | 3.62 |
| 60 | 2.432 | 2.491 | 2.551 | 2.40 | 0.33 | 3.58 |
| 61 | 2.347 | 2.404 | 2.462 | 2.40 | 0.34 | 3.54 |
| 62 | 2.266 | 2.321 | 2.377 | 2.40 | 0.34 | 3.52 |
| 63 | 2.188 | 2.241 | 2.295 | 2.40 | 0.34 | 3.50 |
| 64 | 2.113 | 2.164 | 2.216 | 2.40 | 0.34 | 3.48 |


 

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| 65 | 2.037 | 2.090 | 2.144 | 2.57 | 0.36 | 3.53 |
| 66 | 1.965 | 2.016 | 2.069 | 2.57 | 0.36 | 3.59 |
| 67 | 1.896 | 1.946 | 1.996 | 2.57 | 0.36 | 3.56 |
| 68 | 1.830 | 1.878 | 1.927 | 2.57 | 0.36 | 3.54 |
| 69 | 1.767 | 1.813 | 1.860 | 2.57 | 0.37 | 3.52 |
| 70 | 1.703 | 1.750 | 1.799 | 2.75 | 0.40 | 3.44 |
| 71 | 1.646 | 1.692 | 1.739 | 2.75 | 0.41 | 3.36 |
| 72 | 1.592 | 1.637 | 1.682 | 2.75 | 0.41 | 3.33 |
| 73 | 1.540 | 1.583 | 1.627 | 2.75 | 0.41 | 3.32 |
| 74 | 1.490 | 1.532 | 1.574 | 2.75 | 0.42 | 3.30 |
| 75 | 1.439 | 1.482 | 1.526 | 2.92 | 0.44 | 3.29 |
| 76 | 1.393 | 1.434 | 1.476 | 2.92 | 0.44 | 3.29 |
| 77 | 1.348 | 1.388 | 1.429 | 2.91 | 0.45 | 3.27 |
| 78 | 1.304 | 1.343 | 1.383 | 2.92 | 0.45 | 3.25 |
| 79 | 1.263 | 1.300 | 1.339 | 2.91 | 0.45 | 3.23 |
| 80 | 1.221 | 1.259 | 1.298 | 3.08 | 0.48 | 3.23 |
| 81 | 1.182 | 1.219 | 1.257 | 3.08 | 0.48 | 3.22 |
| 82 | 1.145 | 1.180 | 1.217 | 3.08 | 0.48 | 3.21 |
| 83 | 1.109 | 1.143 | 1.179 | 3.08 | 0.48 | 3.19 |
| 84 | 1.074 | 1.108 | 1.142 | 3.07 | 0.48 | 3.17 |
| 85 | 1.039 | 1.073 | 1.108 | 3.24 | 0.51 | 3.15 |
| 86 | 1.007 | 1.040 | 1.074 | 3.24 | 0.52 | 3.13 |
| 87 | 0.976 | 1.008 | 1.041 | 3.24 | 0.52 | 3.11 |
| 88 | 0.946 | 0.977 | 1.009 | 3.24 | 0.52 | 3.09 |
| 89 | 0.917 | 0.948 | 0.979 | 3.24 | 0.53 | 3.07 |
| 90 | 0.888 | 0.919 | 0.951 | 3.39 | 0.56 | 3.04 |
| 91 | 0.862 | 0.892 | 0.923 | 3.40 | 0.57 | 3.00 |
| 92 | 0.837 | 0.866 | 0.895 | 3.40 | 0.57 | 2.98 |
| 93 | 0.812 | 0.840 | 0.869 | 3.40 | 0.57 | 2.97 |
| 94 | 0.788 | 0.816 | 0.844 | 3.40 | 0.58 | 2.95 |
| 95 | 0.764 | 0.792 | 0.821 | 3.55 | 0.60 | 2.95 |
| 96 | 0.742 | 0.769 | 0.797 | 3.55 | 0.60 | 2.96 |


 

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| 97 | 0.720 | 0.747 | 0.773 | 3.55 | 0.60 | 2.94 |
| 98 | 0.700 | 0.725 | 0.751 | 3.55 | 0.61 | 2.92 |
| 99 | 0.680 | 0.704 | 0.730 | 3.55 | 0.61 | 2.90 |
| 100 | 0.659 | 0.684 | 0.710 | 3.70 | 0.67 | 2.76 |
| 101 | 0.642 | 0.666 | 0.691 | 3.69 | 0.71 | 2.61 |
| 102 | 0.626 | 0.649 | 0.674 | 3.70 | 0.71 | 2.60 |
| 103 | 0.610 | 0.633 | 0.656 | 3.70 | 0.72 | 2.58 |
| 104 | 0.594 | 0.617 | 0.640 | 3.69 | 0.72 | 2.56 |
| 105 | 0.578 | 0.601 | 0.625 | 3.84 | 0.71 | 2.70 |
| 106 | 0.562 | 0.584 | 0.607 | 3.83 | 0.67 | 2.84 |
| 107 | 0.547 | 0.568 | 0.590 | 3.83 | 0.68 | 2.83 |
| 108 | 0.531 | 0.552 | 0.574 | 3.83 | 0.68 | 2.82 |
| 109 | 0.517 | 0.537 | 0.558 | 3.84 | 0.69 | 2.79 |
| 110 | 0.502 | 0.522 | 0.543 | 3.98 | 0.74 | 2.69 |
| 111 | 0.489 | 0.509 | 0.529 | 3.98 | 0.77 | 2.60 |
| 112 | 0.476 | 0.496 | 0.516 | 3.99 | 0.77 | 2.58 |
| 113 | 0.464 | 0.483 | 0.503 | 3.98 | 0.77 | 2.57 |
| 114 | 0.452 | 0.471 | 0.490 | 3.98 | 0.78 | 2.55 |
| 115 | 0.441 | 0.459 | 0.478 | 4.11 | 0.78 | 2.64 |
| 116 | 0.429 | 0.447 | 0.465 | 4.11 | 0.75 | 2.73 |
| 117 | 0.417 | 0.435 | 0.453 | 4.11 | 0.76 | 2.72 |
| 118 | 0.406 | 0.423 | 0.441 | 4.10 | 0.76 | 2.70 |
| 119 | 0.395 | 0.412 | 0.429 | 4.10 | 0.77 | 2.67 |
| 120 | 0.384 | 0.401 | 0.418 | 4.24 | 0.78 | 2.71 |
| 121 | 0.374 | 0.390 | 0.407 | 4.26 | 0.78 | 2.74 |
| 122 | 0.364 | 0.380 | 0.396 | 4.24 | 0.78 | 2.73 |
| 123 | 0.354 | 0.369 | 0.385 | 4.25 | 0.78 | 2.72 |
| 124 | 0.345 | 0.360 | 0.375 | 4.24 | 0.79 | 2.70 |
| 125 | 0.335 | 0.350 | 0.366 | 4.37 | 0.85 | 2.57 |
| 126 | 0.327 | 0.342 | 0.357 | 4.36 | 0.89 | 2.46 |
| 127 | 0.319 | 0.333 | 0.348 | 4.35 | 0.90 | 2.43 |
| 128 | 0.311 | 0.325 | 0.340 | 4.37 | 0.90 | 2.41 |


 

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| 129 | 0.304 | 0.318 | 0.332 | 4.36 | 0.91 | 2.41 |
| 130 | 0.296 | 0.310 | 0.324 | 4.50 | 0.92 | 2.45 |
| 131 | 0.289 | 0.302 | 0.316 | 4.52 | 0.90 | 2.50 |
| 132 | 0.282 | 0.295 | 0.308 | 4.49 | 0.91 | 2.48 |
| 133 | 0.275 | 0.288 | 0.301 | 4.50 | 0.91 | 2.47 |
| 134 | 0.268 | 0.281 | 0.294 | 4.51 | 0.92 | 2.44 |
| 135 | 0.262 | 0.274 | 0.287 | 4.62 | 0.94 | 2.46 |
| 136 | 0.255 | 0.267 | 0.280 | 4.60 | 0.92 | 2.51 |
| 137 | 0.249 | 0.261 | 0.273 | 4.60 | 0.92 | 2.49 |
| 138 | 0.243 | 0.254 | 0.266 | 4.62 | 0.93 | 2.48 |
| 139 | 0.237 | 0.248 | 0.260 | 4.62 | 0.94 | 2.46 |
| 140 | 0.231 | 0.242 | 0.254 | 4.75 | 0.97 | 2.44 |
| 141 | 0.225 | 0.236 | 0.248 | 4.74 | 0.99 | 2.39 |
| 142 | 0.220 | 0.231 | 0.242 | 4.72 | 1.00 | 2.36 |
| 143 | 0.215 | 0.225 | 0.236 | 4.75 | 1.01 | 2.35 |
| 144 | 0.210 | 0.220 | 0.231 | 4.75 | 1.01 | 2.34 |
| 145 | 0.205 | 0.215 | 0.226 | 4.84 | 1.04 | 2.33 |
| 146 | 0.200 | 0.210 | 0.221 | 4.85 | 1.06 | 2.28 |
| 147 | 0.196 | 0.205 | 0.216 | 4.87 | 1.08 | 2.26 |
| 148 | 0.191 | 0.201 | 0.211 | 4.83 | 1.07 | 2.27 |
| 149 | 0.187 | 0.196 | 0.206 | 4.84 | 1.08 | 2.24 |
| 150 | 0.183 | 0.192 | 0.202 | 4.95 | 1.17 | 2.11 |
| 151 | 0.179 | 0.188 | 0.198 | 4.94 | 1.24 | 1.99 |
| 152 | 0.176 | 0.185 | 0.194 | 4.93 | 1.25 | 1.98 |
| 153 | 0.172 | 0.181 | 0.190 | 4.98 | 1.27 | 1.96 |
| 154 | 0.169 | 0.177 | 0.186 | 4.96 | 1.28 | 1.94 |
| 155 | 0.165 | 0.174 | 0.183 | 5.09 | 1.23 | 2.07 |
| 156 | 0.162 | 0.170 | 0.179 | 5.08 | 1.15 | 2.20 |
| 157 | 0.158 | 0.167 | 0.175 | 5.08 | 1.16 | 2.19 |
| 158 | 0.155 | 0.163 | 0.171 | 5.06 | 1.16 | 2.18 |
| 159 | 0.152 | 0.159 | 0.168 | 5.08 | 1.17 | 2.16 |
| 160 | 0.148 | 0.156 | 0.164 | 5.19 | 1.27 | 2.05 |


 

$B_{25/50}$ = 3950K, $R_{25}$ = 10kΩ, $T_R$ = 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 | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| 161 | 0.145 | 0.153 | 0.161 | 5.16 | 1.36 | 1.90 |
| 162 | 0.143 | 0.150 | 0.158 | 5.19 | 1.39 | 1.86 |
| 163 | 0.140 | 0.147 | 0.155 | 5.16 | 1.36 | 1.90 |
| 164 | 0.137 | 0.145 | 0.152 | 5.19 | 1.39 | 1.87 |
| 165 | 0.135 | 0.142 | 0.150 | 5.25 | 1.26 | 2.08 |
| 166 | 0.132 | 0.139 | 0.146 | 5.23 | 1.13 | 2.31 |
| 167 | 0.129 | 0.136 | 0.143 | 5.27 | 1.17 | 2.25 |
| 168 | 0.126 | 0.133 | 0.140 | 5.24 | 1.16 | 2.26 |
| 169 | 0.123 | 0.130 | 0.137 | 5.29 | 1.18 | 2.24 |
| 170 | 0.120 | 0.127 | 0.134 | 5.40 | 1.25 | 2.17 |
| 171 | 0.118 | 0.124 | 0.131 | 5.44 | 1.25 | 2.18 |
| 172 | 0.115 | 0.121 | 0.128 | 5.40 | 1.26 | 2.14 |
| 173 | 0.113 | 0.119 | 0.126 | 5.42 | 1.29 | 2.10 |
| 174 | 0.110 | 0.116 | 0.123 | 5.41 | 1.29 | 2.10 |
| 175 | 0.108 | 0.114 | 0.121 | 5.48 | 1.36 | 2.02 |
| 176 | 0.106 | 0.112 | 0.118 | 5.46 | 1.42 | 1.92 |
| 177 | 0.104 | 0.110 | 0.116 | 5.47 | 1.43 | 1.91 |
| 178 | 0.102 | 0.108 | 0.114 | 5.48 | 1.44 | 1.91 |
| 179 | 0.100 | 0.106 | 0.112 | 5.49 | 1.49 | 1.85 |
| 180 | 0.098 | 0.104 | 0.110 | 5.54 | 1.44 | 1.93 |
| 181 | 0.096 | 0.102 | 0.107 | 5.51 | 1.37 | 2.02 |
| 182 | 0.094 | 0.100 | 0.105 | 5.52 | 1.41 | 1.96 |
| 183 | 0.092 | 0.098 | 0.103 | 5.53 | 1.42 | 1.94 |
| 184 | 0.091 | 0.096 | 0.101 | 5.53 | 1.43 | 1.93 |
| 185 | 0.089 | 0.094 | 0.099 | 5.64 | 1.47 | 1.91 |
| 186 | 0.087 | 0.092 | 0.098 | 5.64 | 1.44 | 1.95 |
| 187 | 0.085 | 0.090 | 0.096 | 5.64 | 1.46 | 1.94 |
| 188 | 0.084 | 0.089 | 0.094 | 5.64 | 1.52 | 1.86 |
| 189 | 0.082 | 0.087 | 0.092 | 5.63 | 1.53 | 1.84 |
| 190 | 0.081 | 0.086 | 0.091 | 5.79 | 1.55 | 1.87 |
| 191 | 0.079 | 0.084 | 0.089 | 5.78 | 1.52 | 1.91 |
| 192 | 0.078 | 0.082 | 0.087 | 5.77 | 1.53 | 1.88 |


 

$B_{25/50}$ = 3950K, $R_{25}$ = 10kΩ, $T_R$ = 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 | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| 193 | 0.076 | 0.081 | 0.086 | 5.75 | 1.60 | 1.79 |
| 194 | 0.075 | 0.079 | 0.084 | 5.73 | 1.63 | 1.76 |
| 195 | 0.074 | 0.078 | 0.083 | 5.83 | 1.52 | 1.92 |
| 196 | 0.072 | 0.076 | 0.081 | 5.89 | 1.50 | 1.96 |
| 197 | 0.071 | 0.075 | 0.080 | 5.87 | 1.52 | 1.93 |
| 198 | 0.069 | 0.074 | 0.078 | 5.85 | 1.48 | 1.97 |
| 199 | 0.068 | 0.072 | 0.077 | 5.83 | 1.56 | 1.87 |
| 200 | 0.067 | 0.071 | 0.075 | 5.86 | 1.80 | 1.62 |
| 201 | 0.066 | 0.070 | 0.074 | 5.80 | 2.03 | 1.43 |
| 202 | 0.065 | 0.069 | 0.073 | 5.89 | 2.03 | 1.45 |
| 203 | 0.064 | 0.068 | 0.072 | 5.83 | 2.08 | 1.40 |
| 204 | 0.063 | 0.067 | 0.071 | 5.90 | 2.19 | 1.35 |
| 205 | 0.062 | 0.066 | 0.070 | 5.98 | 1.98 | 1.52 |
| 206 | 0.061 | 0.065 | 0.069 | 5.93 | 1.83 | 1.62 |
| 207 | 0.060 | 0.064 | 0.068 | 5.95 | 1.90 | 1.56 |
| 208 | 0.059 | 0.063 | 0.067 | 5.96 | 1.88 | 1.59 |
| 209 | 0.058 | 0.062 | 0.066 | 5.90 | 1.92 | 1.53 |
| 210 | 0.057 | 0.061 | 0.065 | 6.07 | 1.68 | 1.80 |
| 211 | 0.056 | 0.060 | 0.063 | 6.03 | 1.44 | 2.09 |
| 212 | 0.055 | 0.059 | 0.062 | 5.98 | 1.46 | 2.05 |
| 213 | 0.054 | 0.057 | 0.061 | 6.02 | 1.44 | 2.09 |
| 214 | 0.053 | 0.056 | 0.060 | 6.06 | 1.48 | 2.05 |
| 215 | 0.052 | 0.055 | 0.058 | 6.09 | 1.68 | 1.82 |
| 216 | 0.051 | 0.054 | 0.057 | 6.10 | 1.94 | 1.57 |
| 217 | 0.050 | 0.053 | 0.057 | 6.10 | 2.03 | 1.50 |
| 218 | 0.049 | 0.053 | 0.056 | 6.10 | 2.00 | 1.52 |
| 219 | 0.049 | 0.052 | 0.055 | 6.09 | 2.10 | 1.45 |
| 220 | 0.048 | 0.051 | 0.054 | 6.18 | 1.97 | 1.57 |
| 221 | 0.047 | 0.050 | 0.053 | 6.19 | 1.82 | 1.70 |
| 222 | 0.046 | 0.049 | 0.052 | 6.09 | 1.88 | 1.62 |
| 223 | 0.046 | 0.049 | 0.052 | 6.19 | 1.88 | 1.65 |
| 224 | 0.045 | 0.048 | 0.051 | 6.08 | 1.93 | 1.57 |


 

| $B_{25/50}$ = 3950K, $R_{25}$ = 10kΩ, $T_R$ = 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 | $\frac{\Delta R_T}{R_T}$ | $\Delta T_N = \frac{\Delta R_N}{R_{N+1} - R_{N-1}}$ | $\alpha = \frac{R_{N-1} - R_{N+1}}{2 \times R_N}$ |
| 225 | 0.044 | 0.047 | 0.050 | 6.17 | 1.81 | 1.70 |
| 226 | 0.043 | 0.046 | 0.049 | 6.29 | 1.71 | 1.84 |
| 227 | 0.043 | 0.045 | 0.048 | 6.18 | 1.75 | 1.77 |
| 228 | 0.042 | 0.045 | 0.047 | 6.29 | 1.75 | 1.80 |
| 229 | 0.041 | 0.044 | 0.046 | 6.18 | 1.80 | 1.72 |
| 230 | 0.040 | 0.043 | 0.046 | 6.28 | 1.80 | 1.75 |

To ensure optimal performance and reliability, it is recommended to follow proper storage procedures for the ATH10KR55B3950K 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°C to +45°C, 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 ATH10KR55B3950K 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.

## ORDERING INFORMATION

| Part Number | Buy Now |
|---|---|
| ATH10KR55B3950K |  |

## 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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