

MAIN FEATURES

Glass Encapsulated for Long Term Stability & Reliability
 High Stability: $<0.1^{\circ}\text{C}/\text{Y}$
 Small Size: $\phi 0.8\text{mm} \times 1.4\text{mm}$
 High Resistance Accuracy: 1%
 Quick Response Time: 3s
 Wide Temp. Range: -55°C to 250°C

APPLICATIONS

Temperature sensing for laser diodes, optical components, etc.

DESCRIPTION

The ATH10KR8 is a high precision glass encapsulated thermistor. Comparing with conventional epoxy encapsulated thermistors, ATH10KR8 presents higher long term stability and wider temperature range. In addition, it has a small size and short response time.

The ATH10KR8 can be used to measure the temperatures for laser diodes, optical components, etc., with high accuracy and long term stability.

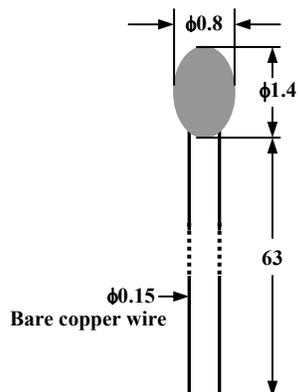


Figure 1 Side View of ATH10KR8

SPECIFICATIONS

Nominal Resistance @ 25°C : $10\text{K} \pm 1\%$
 B Value @ $25^{\circ}\text{C} / 85^{\circ}\text{C}$: $3480\text{K} \pm 1\%$
 B Value @ $0^{\circ}\text{C} / 100^{\circ}\text{C}$: $3450\text{K} \pm 1\%$
 B Value @ $25^{\circ}\text{C} / 100^{\circ}\text{C}$: $3497\text{K} \pm 1\%$
 Thermistor Diameter: $0.8 \pm 0.1\text{mm}$
 Thermistor Length: $1.4 \pm 0.4\text{mm}$
 Lead Diameter: 0.15mm
 Lead Length: $63 \pm 3\text{mm}$
 Dissipation Factor: $0.4\text{mW}/\text{K}$
 Heat Capacity: $1.3\text{mJ}/\text{K}$
 Maximum Power @ 25°C : 18mW

APPLICATION

Drill a hole on the object for which the temperature needs to be measured and use thermally conductive epoxy to pot the thermistor inside the hole. The hole diameter should be between 1.2 to 1.4mm and the depth should be between 2 to 2.5mm. When a deeper hole is needed, drill a 2 stage hole to prevent mounting epoxy bobbles trapped inside which would cause temperature measurement errors. Figure 2 shows the section view of the 2 stage hole.

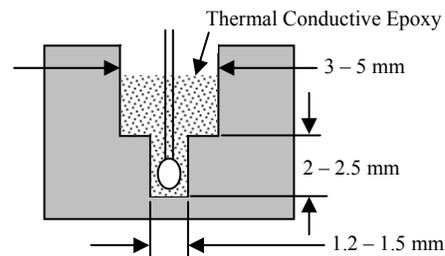


Figure 2 Section View of the 2 Stage Hole

The worst mounting result is that there are air bubbles trapped inside the thermistor mounting hole. These bubbles cause thermal sensing time delay and sensing temperature errors. To avoid the bubbles, use thin epoxy, vibrate the assembly before curing, and cure the epoxy inside the mounting hole at high temperature, 80°C to 150°C , depending on the epoxy used and the maximum temperature assembly components allow.

The thermistor lead wires are made of plain copper and there is no insulation coating on them, please make sure that they do not touch each other after mounting the thermistor.

Some thermal conductive epoxies are also electrically conductive and such epoxies should not be used for mounting the thermistors, since the lead wires are conductive.

ORDERING INFORMATION

Part number: ATH10KR8

| Quantity | 1 - 9 | 10 - 49 | 50 - 249 | ≥ 250 |
|----------|-------|---------|----------|------------|
| Price | \$6.4 | \$5.2 | \$3.8 | \$2.4 |



Resistance Temperature Characteristics

Table with 5 columns: T [°C], R_nom [Ω], R_min [Ω], R_max [Ω], ΔR/R_N [±%]. Rows range from -55 to 120 degrees Celsius.

Table with 5 columns: T [°C], R_nom [Ω], R_min [Ω], R_max [Ω], ΔR/R_N [±%]. Rows range from 125 to 250 degrees Celsius.

NOTICE

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