



## DISCRETE NTC THERMISTORS

### NTC SOLUTIONS ENGINEERED FOR MANY THERMAL APPLICATIONS

TE Connectivity (TE) is a leading designer and manufacturer of high precision discrete NTC (negative temperature coefficient) thermistors and probe assemblies. NTCs offer many advantages in temperature sensing including miniature size, excellent long-term stability, high accuracy and precision.

NTC thermistors are suitable for a wide range of temperature sensing, control and compensation applications from  $-80^{\circ}\text{C}$  to  $+300^{\circ}\text{C}$ . Our precision discrete NTC thermistors provide solutions for thermal sensing ranging from basic to complex application and environmental conditions.

Our NTC sensors offer excellent performance for value. We provide dependable delivery of high-quality sensors with a wide variety of standard parts available in-stock.

- GLASS NTC THERMISTORS
- EPOXY NTC THERMISTORS
- SPACE QUALIFIED (HI-REL) NTC THERMISTORS
- LEADLESS CHIP & SMD NTC THERMISTORS

#### DESIGN QUESTIONS?

- What is the application?
- What is your temperature range, specifically maximum temperature exposure?
- What accuracy do you require? Interchangeable over a range or accurate at a single point.
- What kind of environment will the parts be exposed to? High humidity, thermal shock, freeze thaw, extended high temperature exposure.
- How will the sensor be mounted?

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## GLASS NTC THERMISTORS

TE's glass encapsulated NTC thermistors provide the optimum balance between miniaturization, accuracy and environmental protection. Radial and axial (DO-35) glass encapsulated thermistors are available.

- Resistance range from 2K to 500K Ohms
- Operating temperatures to +300°C

## EPOXY NTC THERMISTORS

TE offers a range of epoxy or polyimide encapsulated discrete NTC thermistors in a variety of resistance curves and tolerances. Options are available with various lead styles and lengths.

- Resistance range from 100 Ohms to 10 Meg Ohms
- Operating temperature to +125°C

## SPACE QUALIFIED (HI-REL) NTC THERMISTORS

Our space qualified, high reliability (Hi-REL) NTC thermistors are manufactured per AS9100 and are suitable for critical space qualified applications as well as thermal military applications. We offer NTCs that meet ESA (ESCC QPL, ESCC Generic Specification 4006) and NASA (NPSL, GSFC S-311-P-18) specification. Custom NTC space qualified thermistors are also available.

- Discrete sensor space qualified to both NASA and European Space Agency (ESA)
- Probe assemblies built to ESCC 4006

## LEADLESS CHIP & SMD NTC THERMISTOR

TE offers a range of standard and customized leadless chip thermistors with silver and gold metallization suitable for a variety of applications. SMD NTC thermistors are designed for automated board mounted applications and are available in a variety of resistance curves and tolerances.

- Gold metalized chip thermistors suited for both high temperature solder or electrically conductive epoxy bond with wire bond for top surface
- Surface mount sensors available in multiple resistance values and resistance tolerance options

SERIES	DESCRIPTION	APPLICATIONS
<a href="#">Series I</a>	Epoxy coated 32AWG radial leads. Ideal for PC board mount.	Temperature sensing, control and compensation.
<a href="#">Series II</a>	Epoxy coated with 30AWG PTFE insulated leads. Easily packaged into custom probe assemblies.	Temperature sensing, control and compensation. Insulated leads help add dielectric insulation and mechanical strength.
<a href="#">Series V</a>	Medical grade sensors with accuracy of $\pm 0.05^{\circ}\text{C}$ over the range of $+32^{\circ}\text{C}$ to $+44^{\circ}\text{C}$ .	Applications that require extreme temperature accuracy with low cost.
<a href="#">Series VI</a>	Epoxy coated 32AWG radial leads. Resistance values as low as 100 $\Omega$ .	Suited for sensing and control at low temperatures.
<a href="#">SMD</a>	EIA standard package sizes of 1206, 0805 and 0603.	High density PCB applications where low cost temperature sensing is needed.
<a href="#">DO-35</a>	Hermetically sealed axial package with temperature ratings to 300°C. Resistance ranges from 2,000 $\Omega$ to 200,000 $\Omega$ .	PCB mounting and assembly into probe assemblies when used in high temperature or high moisture environments.
<a href="#">MCD</a>	Micro BetaCHIP series offers extremely small size of 0.0200"D for fast time response with a 25°C accuracy of $\pm 0.2^{\circ}\text{C}$ .	Applications where small size and fast time response are critical such as catheters, animal research or air flow.
<a href="#">MBD</a>	Mini BetaCURVE series is slightly larger than the the Micro BetaCHIP with an OD of .040" with two inch 30AWG leads. The accuracy of the MBD series is $\pm 0.2^{\circ}\text{C}$ over the span of 0°C to +70°C.	Easily assembled into probe assemblies or applications where rugged construction with high dielectric strength are needed.
<a href="#">Gold Metalized Chip</a>	Gold metalized chip thermistors are available in a wide variety of resistance values, resistance tolerances and Beta values.	Suited for temperature control and compensation of hybrid circuits. Applications include laser stability and TCXO/OCXO circuits.

