

# Application Spotlight

### **NTC Sensor Linearization**

#### Resistance / Temperature

The resistance / temperature characteristics of an NTC based temperature sensor generally are defined by a 4th order polynomial equation and represented by a typical R/T curve. A general R/T is shown for the 0703-1272-76-S1 thermistor as a response to temperature.



#### Sensing Circuit

In many instances the sensing circuit is a simple voltage divider network with a source voltage and series resistor.



#### **Reduced Errors**

By adding simple passive components in parallel and series with the NTC, these linearization errors can be reduced.



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#### Linearization Errors

Over an extended temperature range, linearization errors will occur in the voltage output with respect to temperature as shown by the orange line on the graph.



#### Voltage Divider

This arrangement reduces linearization error by 32% over a simple voltage divider.



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