

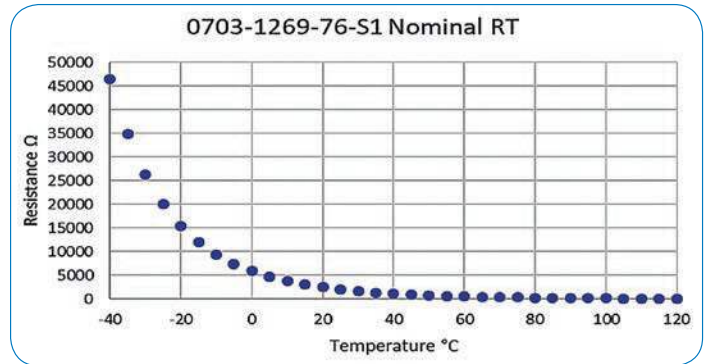


Application Spotlight

NTC Sensor Linearization

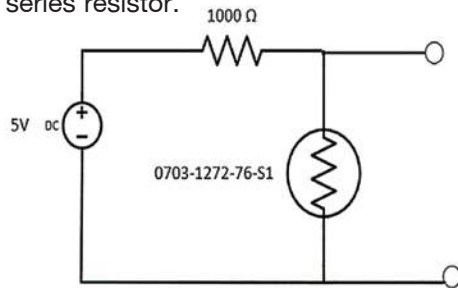
Resistance / Temperature

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.



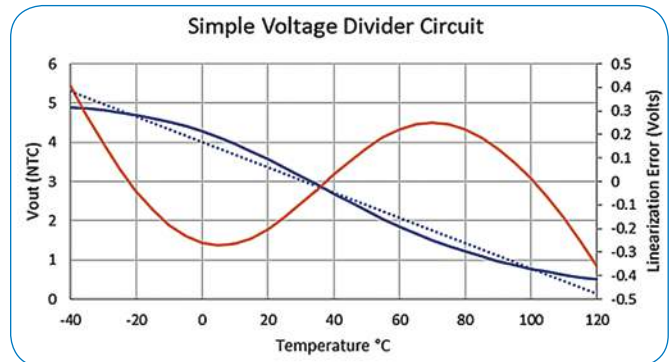
Sensing Circuit

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



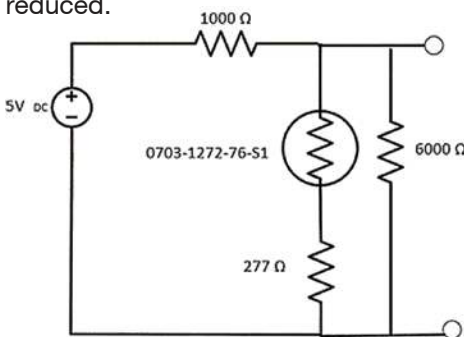
Linearization Errors

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.



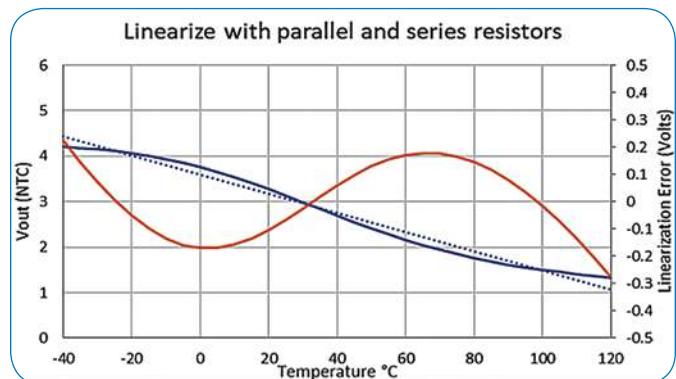
Reduced Errors

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



Voltage Divider

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



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