THERMOMETRICS
A COMMITMENT TO EXCELLENCE

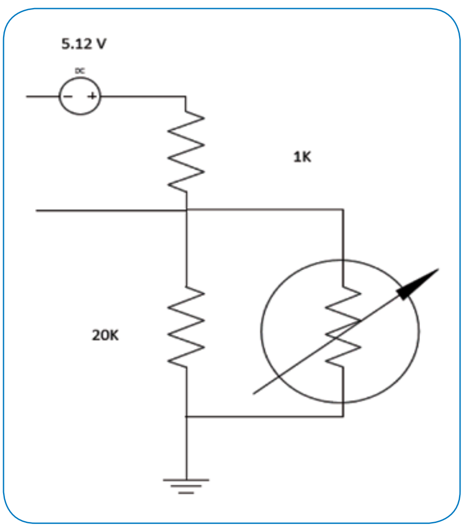
# Application Spotlight

## Power Budgets / Dissipation

### Overview

As electrification continues, power budgets are becoming more and more critical, along with commonly asked questions, such as - How much power does your device consume? What is the max power on your device? These are not trivial questions.

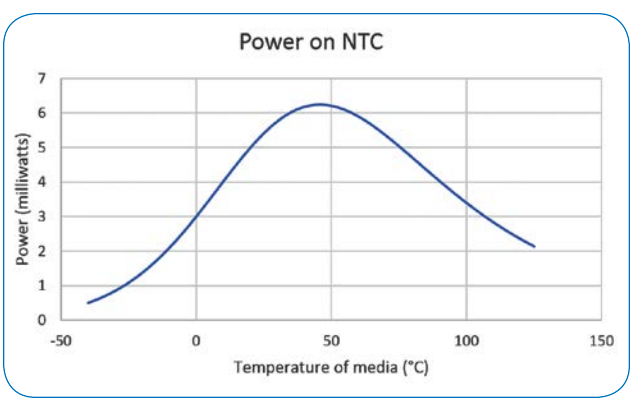
Unlike micro-processors or other active devices, an NTC-based sensor is a passive component, and power consumption depends on other components in the system. In the case of the following circuit, the power curve will reach max power consumption at approximately 45°C.

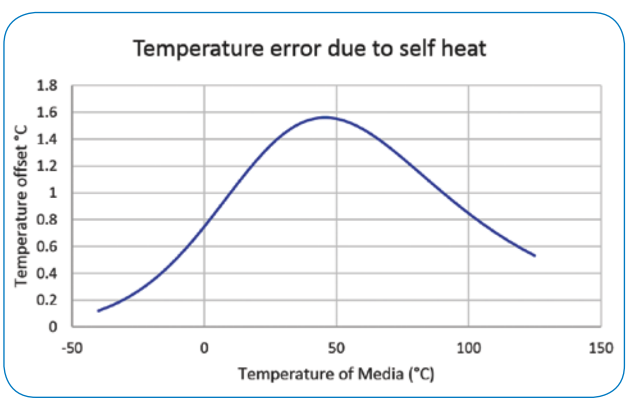



At this point, power across the NTC will be ~6.24 milliwatts. This will be the value needed for the power budget.

So, what about dissipation? Dissipation is described as the amount of power required to raise the part 1°C. The units are mW/°C. In the case of this sensor, the dissipation is ~4 mW/°C in still air. This means that the part will be self-heated by as much as 1.56°C.

This dissipation changes with media and conditions, so it is critical to understand the application in order to limit temperature sensing errors.

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