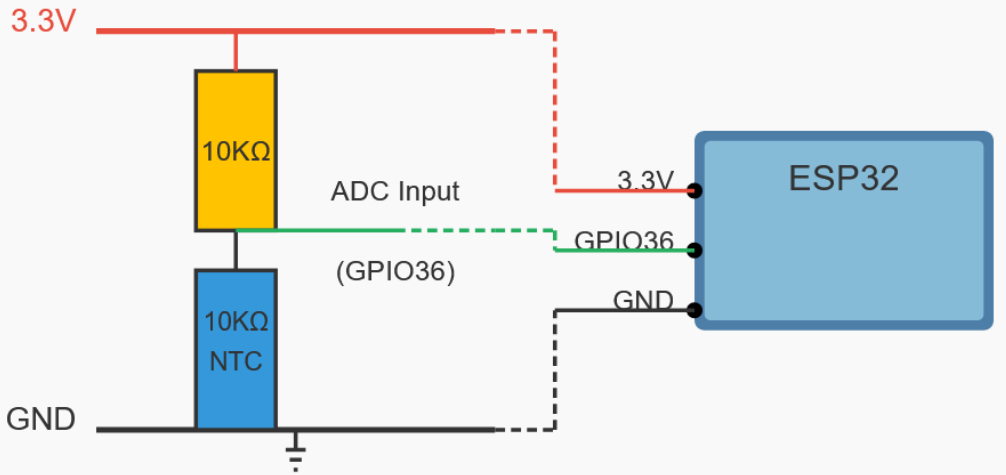
Thermistor Circuit with 10K Voltage Divider

For Pool Temperature Monitoring System



Circuit Notes

Component Information:

- The 10KΩ NTC thermistor changes resistance with temperature
- Thermistor resistance decreases as temperature increases
- The voltage at the ADC input will vary with temperature
- Standard thermistor is 10KΩ at 25°C (77°F)
- Beta value typically 3950 for pool thermistors

Installation Tips:

- Mount the thermistor in a waterproof housing for pool use
- Use heat-shrink tubing and/or epoxy for waterproofing
- For long wire runs, use shielded cable to reduce interference
- Position away from heaters, returns, or direct sunlight
- Calibrate in software using the tempCalibrationOffset variable

Thermistor Equation: $R = R_o \times e^{\wedge}(\beta \times (1/T - 1/T_o))$ where R_o = 10KΩ at 25°C (298.15K), β = 3950, T in Kelvin