Thermocouples and Conditioning

Nikhil Chopra
Introduction

- What is a thermocouple?
- $V = K(T_1 - T_2)$
- $K$ is the **Seebeck** coefficient.
- Freeze it!

- Cold Junction Compensation.
- Thermocouples are quite cheap.
- Different kinds are B, E, J, K etc.
Signal Conditioning

- **Seebeck** coefficient is of the order of $\mu$V/°C ...... Amplification Needed
- Cold Junction Errors removed
- Noise Suppression.
- I need some conditioning!
AD594/ AD595

- A signal conditioner IC.
- Output is now in mV/°C
- Available from Analog Devices.
- Quite Cheap - $14.
FUNCTIONAL DIAGRAM