Temperature Sensor – Motor Protection System

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Group 29

My Participation in the project

Our Group project is Roof Cooling System with Motor Protection. In my particular part, the LM35 Temperature sensor will take the reading of the temperature around the motor. And when it senses the excess amount of Heat, the exhaust fan will be   using a relay switch in order to reduce the heat around the motor and protect motor from heat damage.

My Responsibilities

My responsibilities in the project were to complete the Temperature sensing part in the Motor Protection System.

It includes

- Learning about the temperature sensor (LM35)
- Write code for the temperature sensor and configure it to switch on the relay to make the Exhaust Fan work
- Draw the schematic diagram for the temperature sensor
- Draw PCB design for the Temperature sensor and the Final Motor protection System

LM35 – Temperature Sensor

I used LM35 sensor because it has got several advantages like, using less current from te circuit, has got a liner calibration, low cost etc.

• Calibrated Directly in Celsius (Centigrade)

• Linear + 10-mV/°C Scale Factor

• 0.5°C Ensured Accuracy (at 25°C)

• Rated for Full −55°C to 150°C Range

• Suitable for Remote Applications

• Low-Cost Due to Wafer-Level Trimming

• Operates From 4 V to 30 V

• Less Than 60-µA Current Drain

- Low Self-Heating, 0.08°C in Still Air

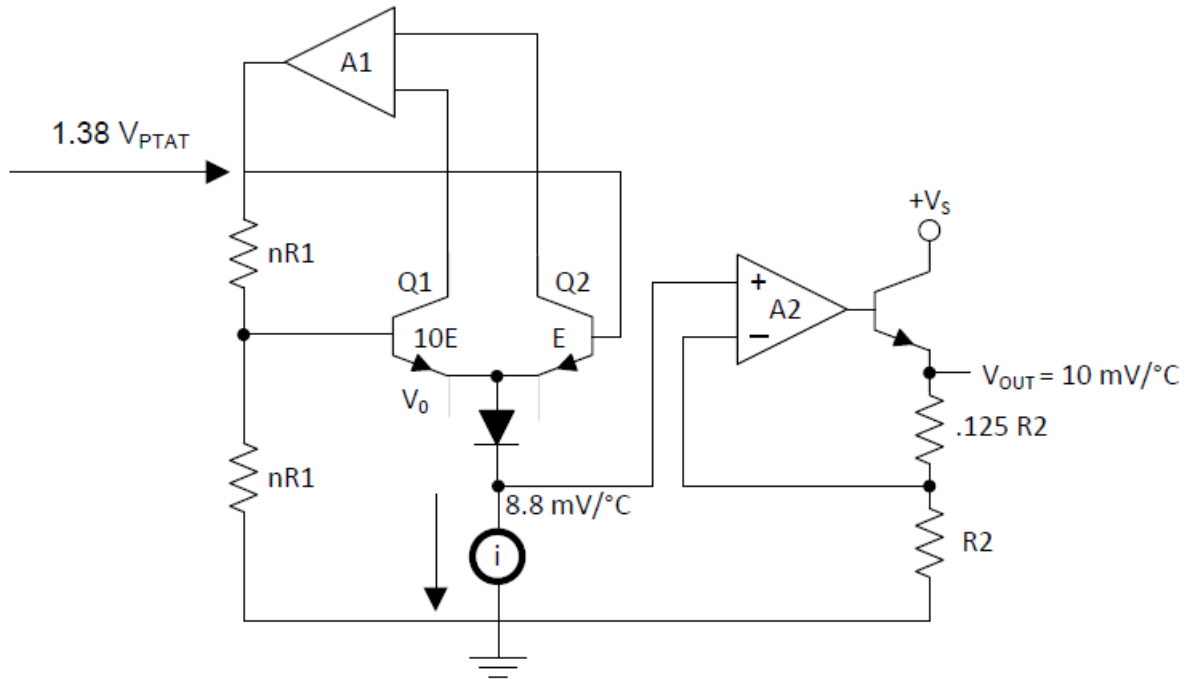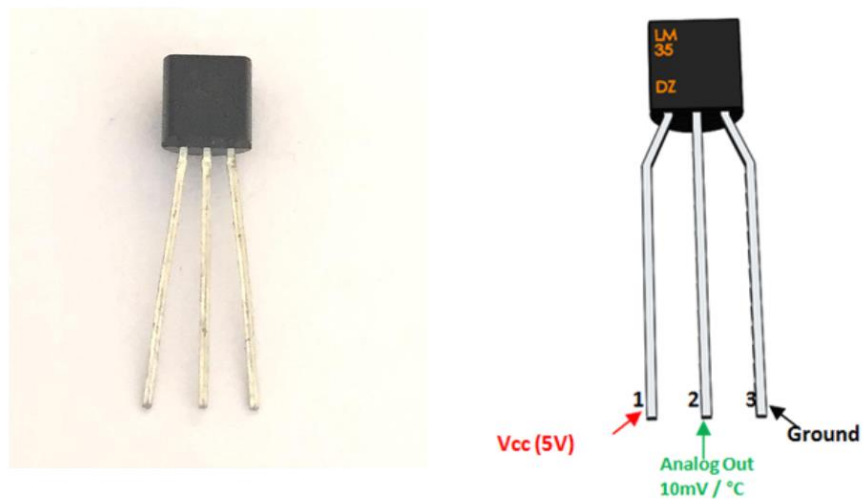- Non-Linearity Only ±¼°C Typical

- Low-Impedance Output, 0.1 Ω for 1-mA Load

Figure 1 Functional Block Diagram

Figure 2 LM35 External look