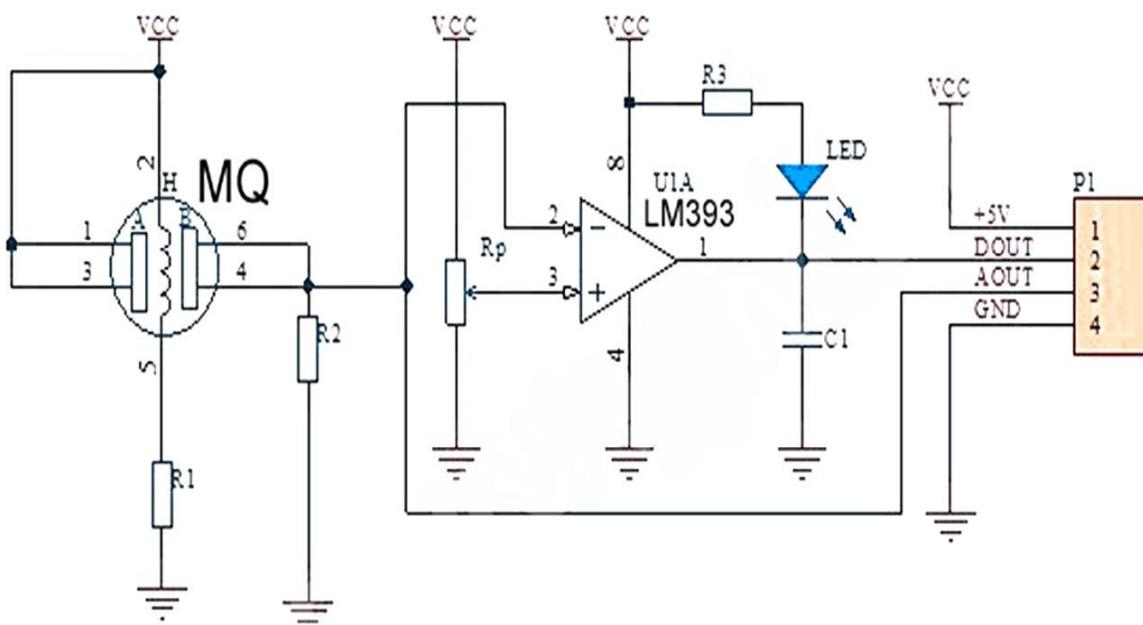


MQ2 Gas Sensor Module



MQ2 gas sensor can be used to detect the presence of LPG, Propane and Hydrogen, also could be used to detect Methane and other combustible steam, it is low cost and suitable for different application. Sensor is sensitive to flammable gas and smoke. Smoke sensor is given 5 volt to power it. Smoke sensor indicate smoke by the voltage that it outputs .More smoke more output. A potentiometer is provided to adjust the sensitivity. SnO₂ is the sensor used which is of low conductivity when the air is clean. But when smoke exist sensor provides an analog resistive output based on concentration of smoke. The circuit has a heater. Power is given to heater by VCC and GND from power supply. The circuit has a variable resistor. The resistance across the pin depends on the smoke in air in the sensor. The resistance will be lowered if the content is more. And voltage is increased between the sensor and load resistor.

Board Schematic



SPECIFICATIONS

- Power Supply: 4.5V to 5V DC
- High sensitivity to Propane, Smoke, LPG and Butane
- Wide range high sensitivity to Combustible gases
- Long life and low cost
- Analog and Digital output available
- Onboard visual indicator (LED) for indicating alarm
- Compact design and easily mountable
- Simple 4 PIN header interface
- Drive circuit is simple.
- Sensor Type : Semiconductor
- Concentration : 300-10000ppm (Combustible gas)
- Supply voltage =5v

APPLICATIONS

- Safety of home
- Control of air quality
- Measurement of gas level

Working Principle

The MQ2 has an electrochemical sensor, which changes its resistance for different concentrations of varied gasses. The sensor is connected in series with a variable resistor to form a voltage divider circuit (Fig 1), and the variable resistor is used to change sensitivity. When one of the above gaseous elements comes in contact with the sensor after heating, the sensor's resistance change. The change in the resistance changes the voltage across the sensor, and this voltage can be read by a microcontroller. The voltage value can be used to find the resistance of the sensor by knowing the reference voltage and the other resistor's resistance. The sensor has different sensitivity for different types of gasses.

