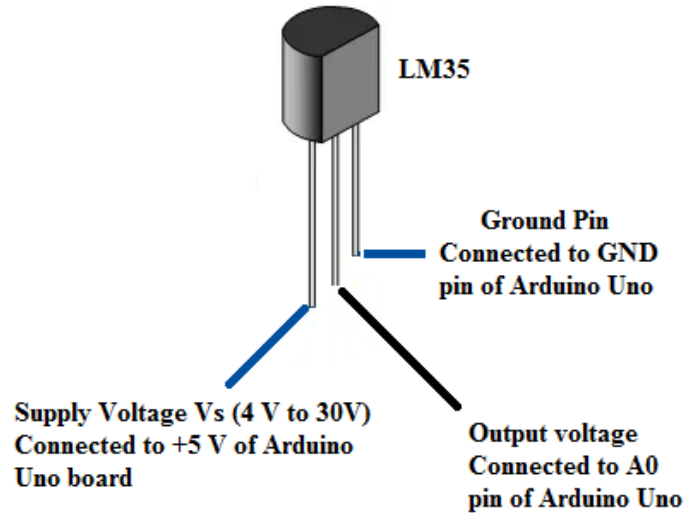


LM35 Temperature Sensor Interfacing with Arduino

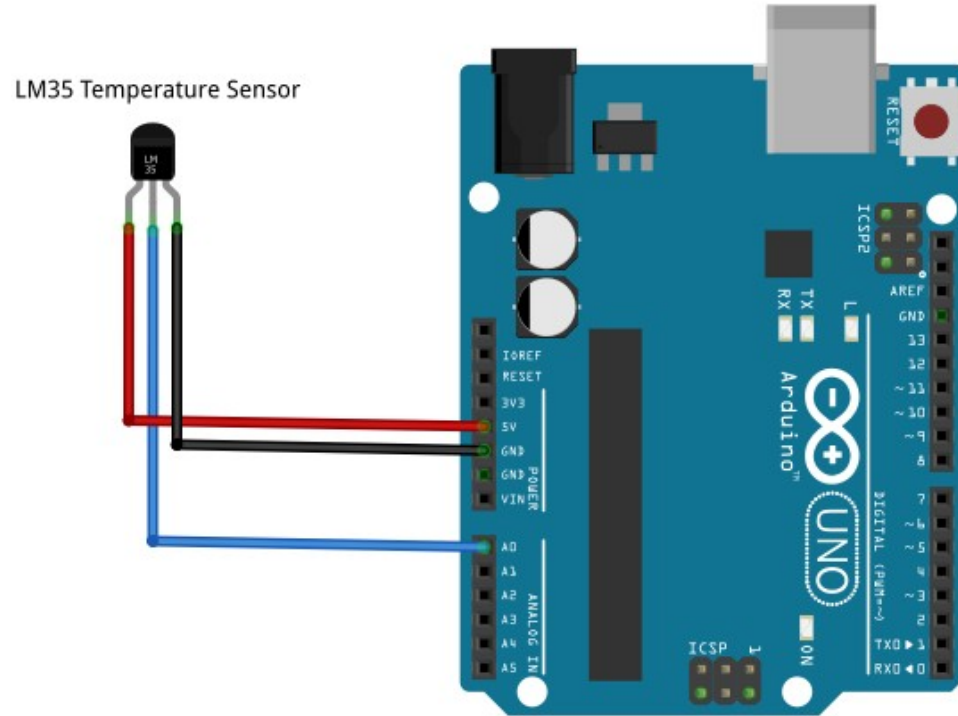
Pin Diagram



The output voltage of LM35 sensor changes by 10 mV for every 1 degree Celsius rise or fall in temperature.

Temperature Range:
-55 degree Celsius to 150 degree Celsius.

Circuit Connections



Sensor output is connected to Analog channel A0

Formula:

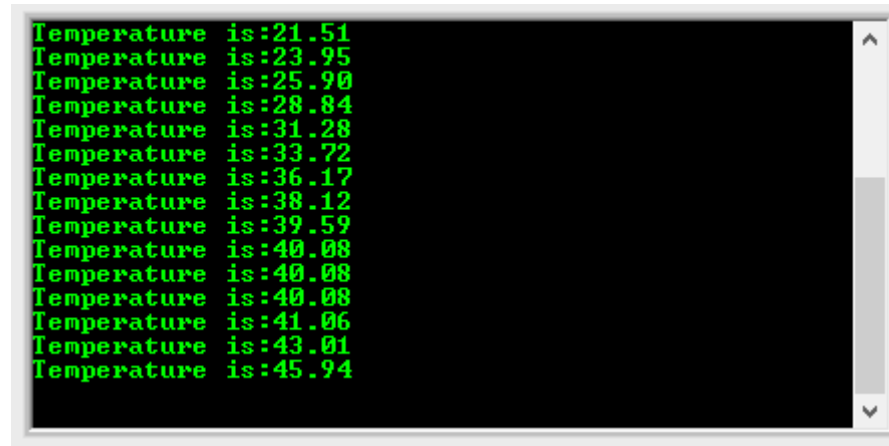
$$\text{temp1} = (\text{temp} * 500.0) / 1023.0$$

Code

```
float temp;  
// variable to hold the analog voltage equivalent  
value  
float temp1;  
// variable to store temperature in degree  
celsius  
void setup() {  
// put your setup code here, to run once:  
Serial.begin(9600);  
// initialize serial communication at 9600 bps  
baud rate  
}
```

```
void loop() {  
// put your main code here, to run repeatedly:  
temp = analogRead(A0);  
/* convert analog voltage on channel A0 to its  
equivalent decimal value and store in temp */  
// convert temp value on degree celsius scale  
temp1 = (temp*500.0)/1023.0;  
Serial.print("Temperature is:");  
Serial.println(temp1,2);  
// print temp1 on serial port with 2 digits after  
decimal point  
delay(500); // give delay of 0.5 sec  
}
```

Output on Serial Monitor

A screenshot of a serial monitor window with a black background and green text. The text displays a series of temperature readings, each preceded by the label "Temperature is:". The values start at 21.51 and increase in increments of approximately 2-3 units per line, reaching 45.94. The window has a vertical scrollbar on the right side.

```
Temperature is:21.51
Temperature is:23.95
Temperature is:25.90
Temperature is:28.84
Temperature is:31.28
Temperature is:33.72
Temperature is:36.17
Temperature is:38.12
Temperature is:39.59
Temperature is:40.08
Temperature is:40.08
Temperature is:40.08
Temperature is:41.06
Temperature is:43.01
Temperature is:45.94
```