

PSI2662 – Projeto em Sistemas Eletrônicos Embarcados: Sensores e Atuadores

Circuitos de Interface

Escola Politécnica da Universidade de São Paulo

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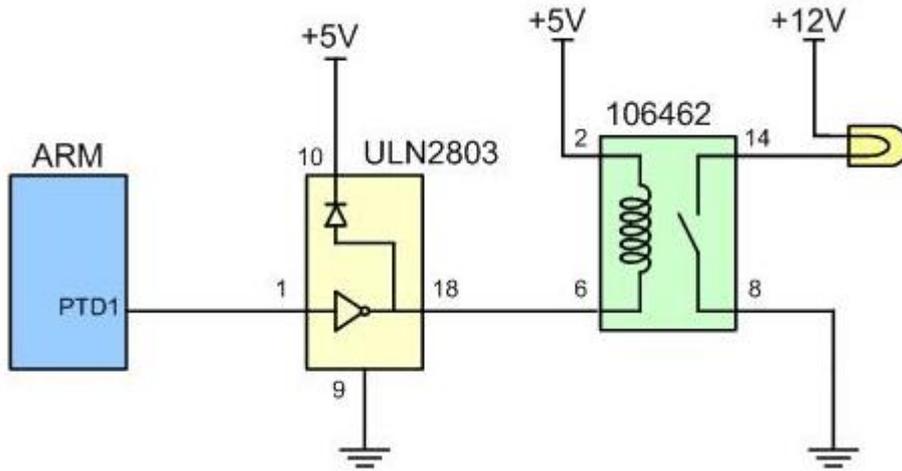


Segundo Semestre de 2015

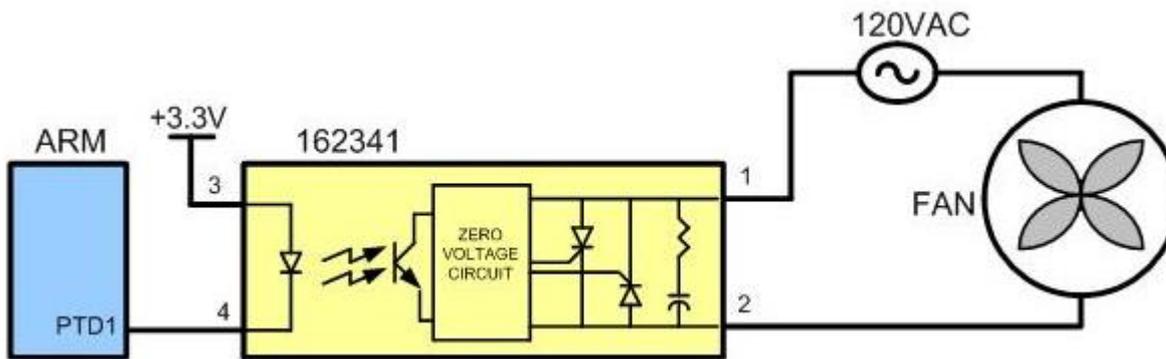


Relé

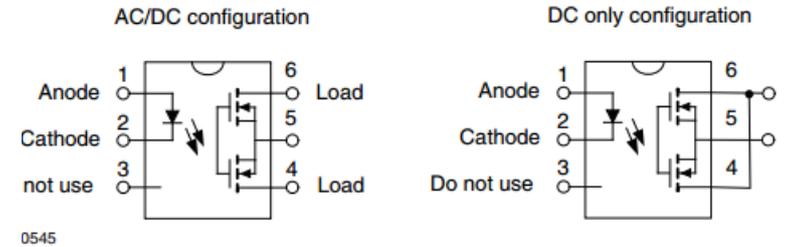
- Corrente da bobina = 10-100 mA
- Corrente máxima fornecida pelo pino de saída = 8 mA
- Utilização de driver de relé!



Relé Estado Sólido (SSR)

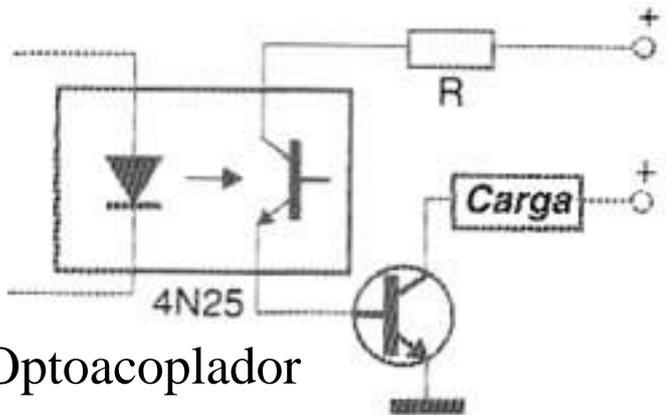


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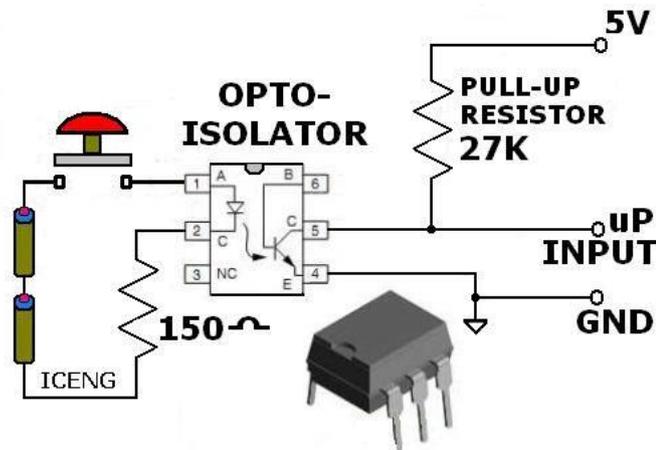
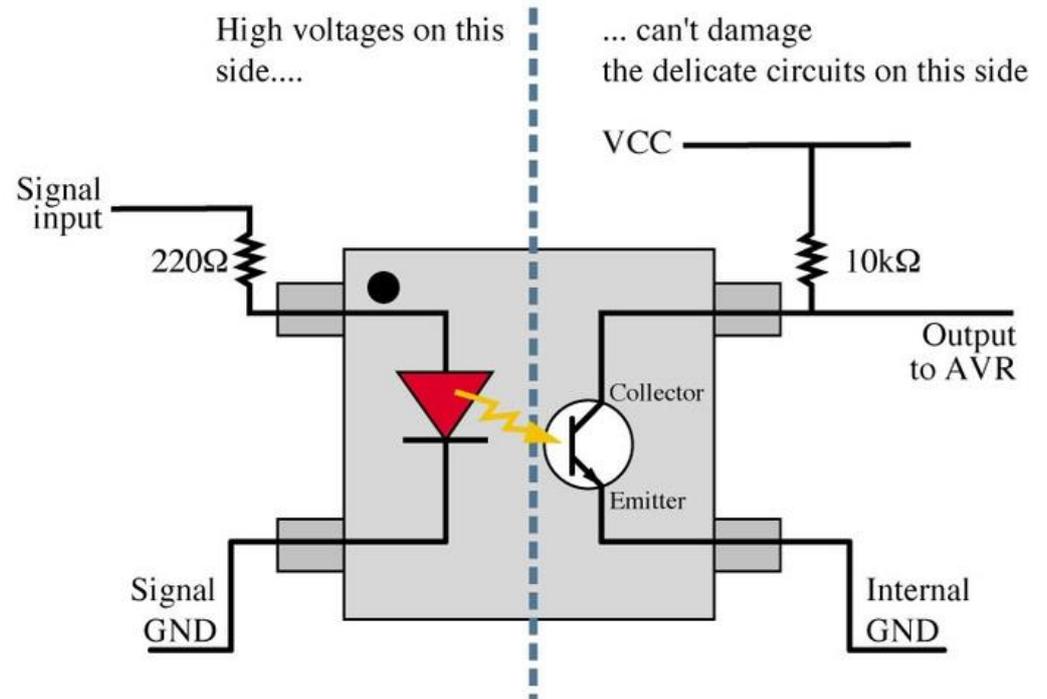




Optoisoladores e controle de potência

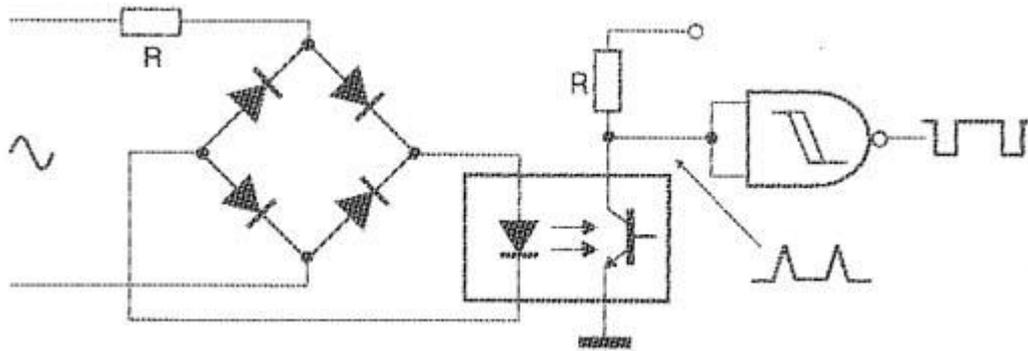
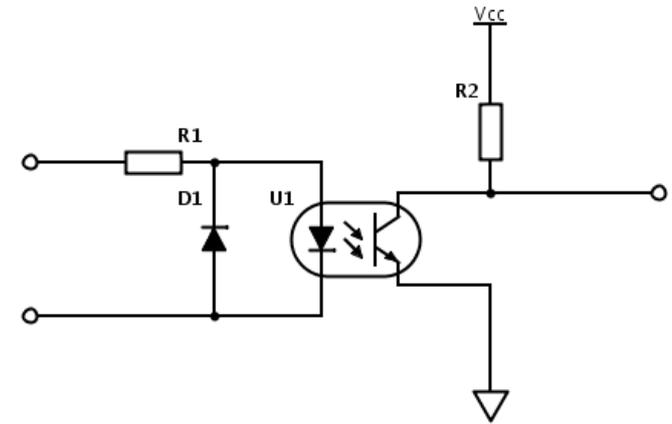
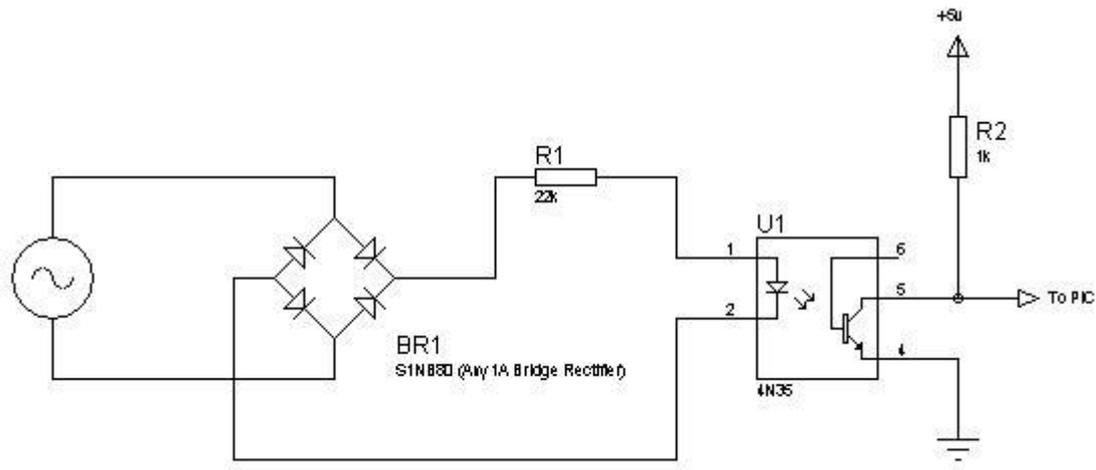


Optoacoplador





Cruze por Zero com optoacoplador





Controle de Potência AC

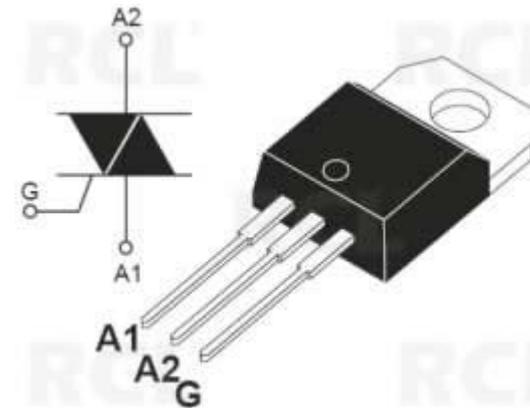
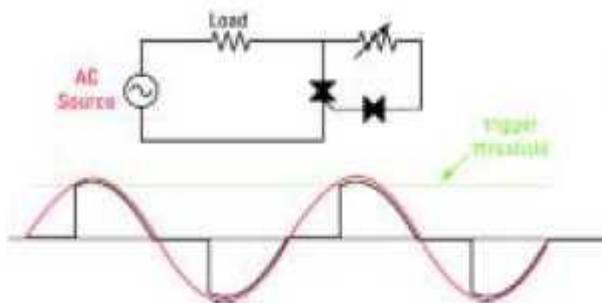
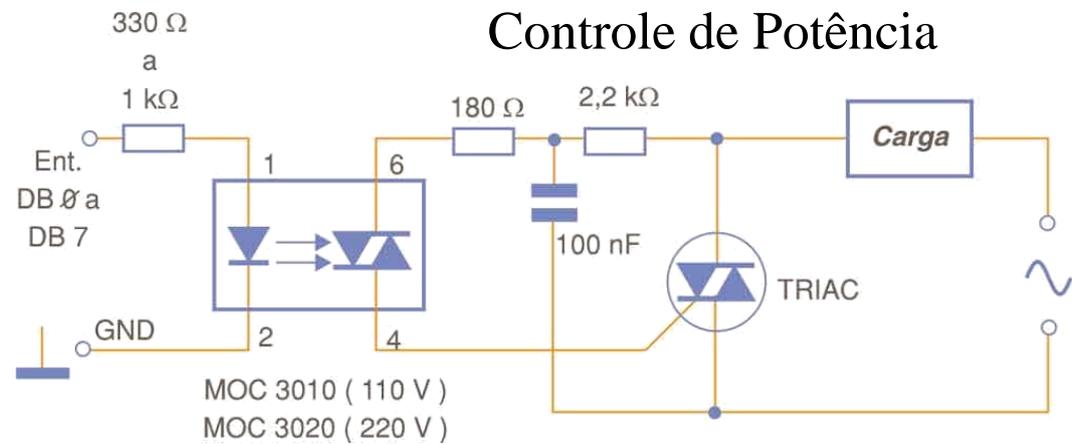
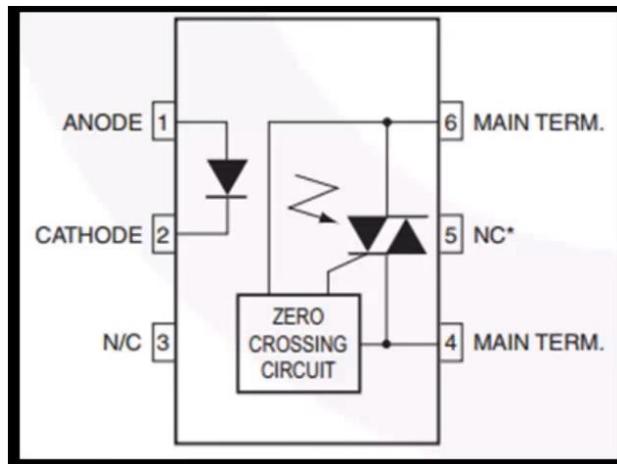
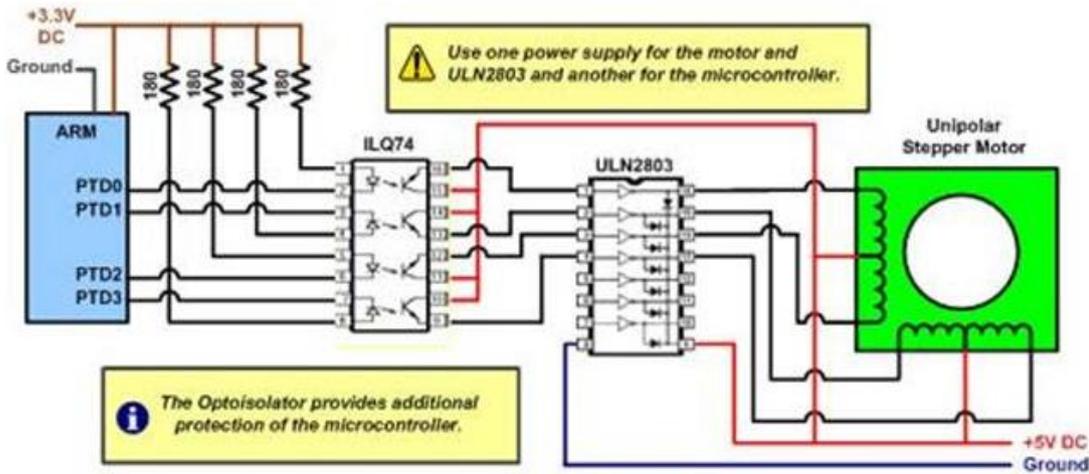
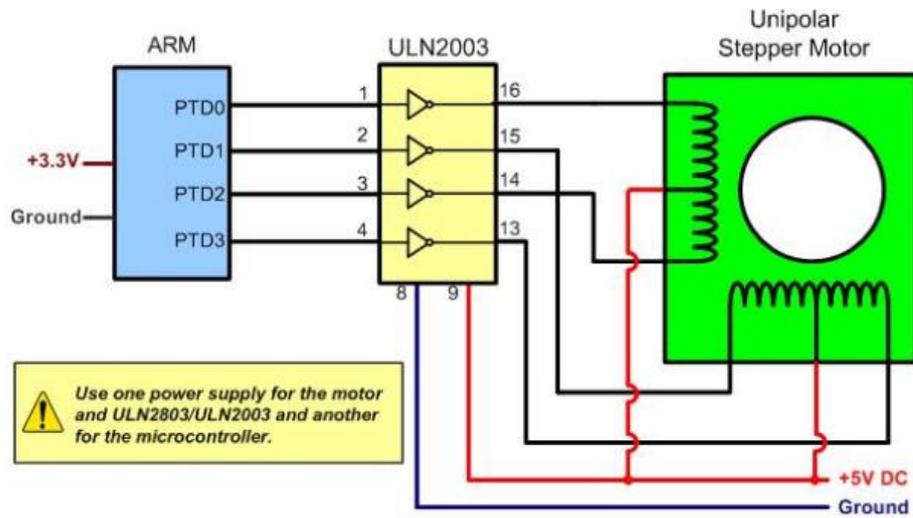


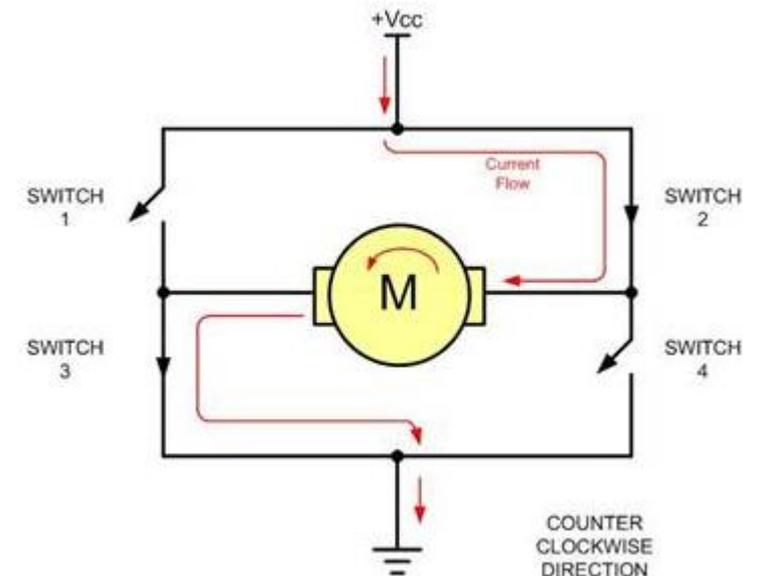
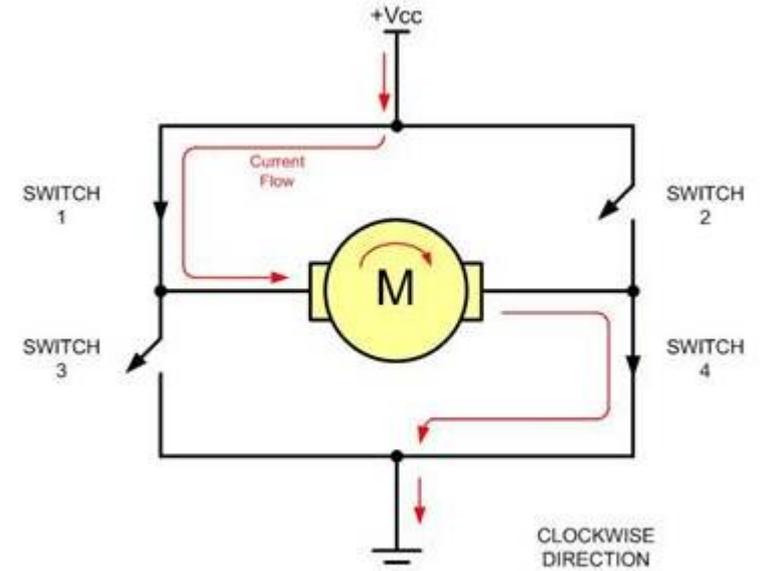
Figure 1: Triac dimming waveform



Controle de Motores



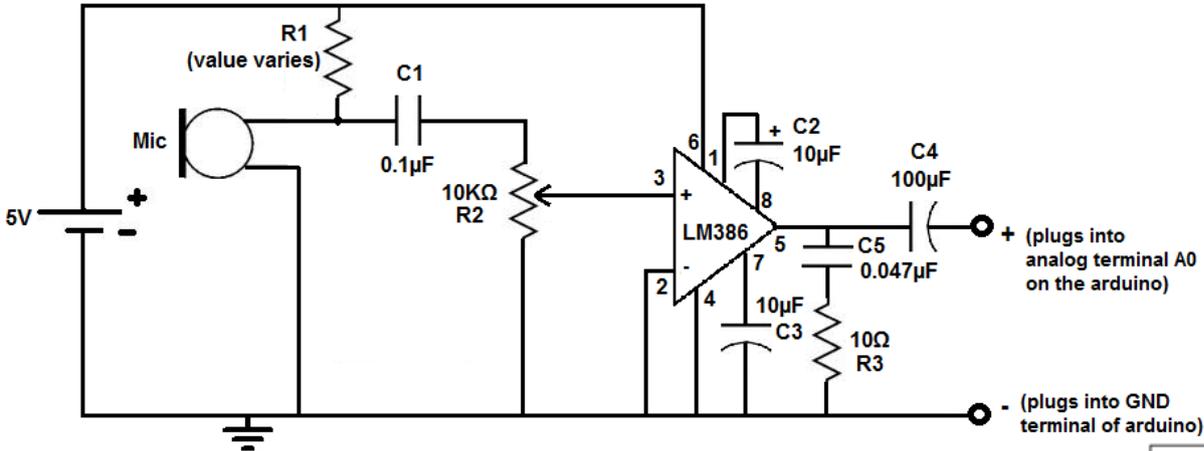
Ponte - H





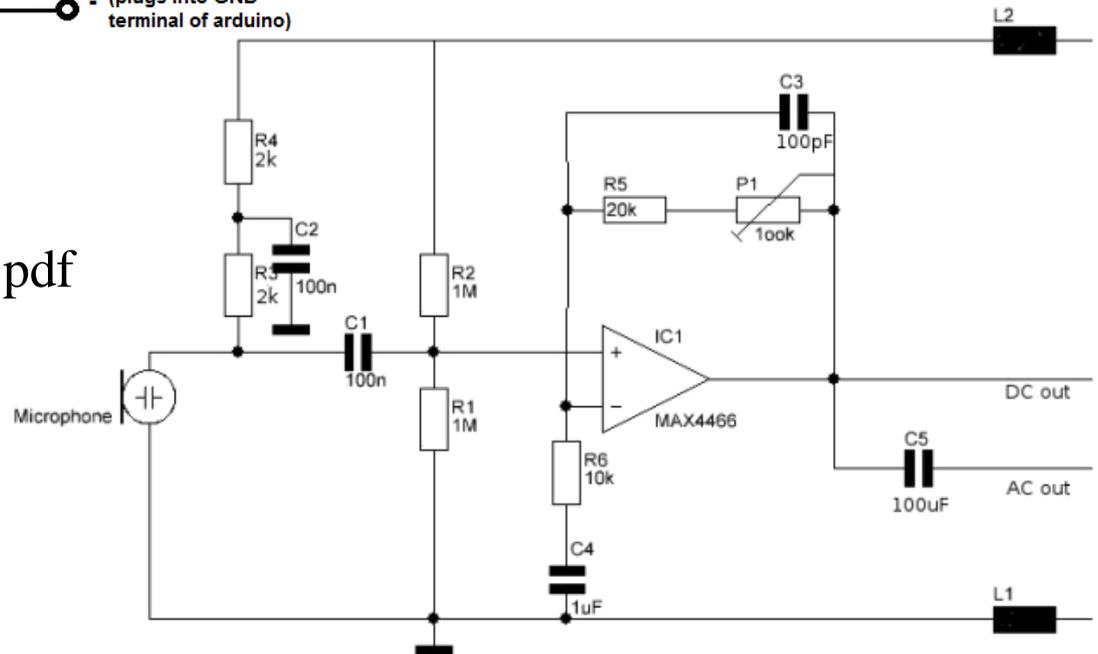
Amplificador de Audio

LM386 - Low Voltage Audio Power Amplifier



<http://www.learningaboutelectronics.com/Articles/Arduino-microphone-circuit.php>

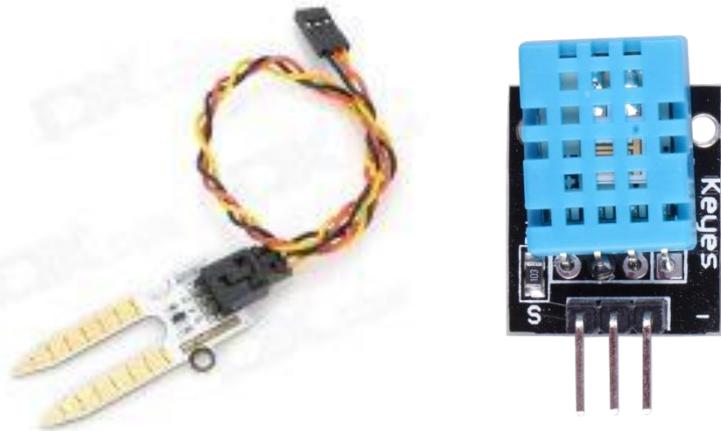
<http://www.ti.com/lit/ds/symlink/lm386.pdf>



LowPass -3dB=1/(R6XC4+2pi) (Gain=R5+P1)/R6 + 1 = 13~21



Sensores



Sensor de Umidade

Sensor de Temperatura

- LM35
- Termopar (J, K etc.)
- Termistor (NTC, PTC)
- RTD (pt100)

Sensor de Luz

- Fotodiodo
- Fototransistor
- LDR
- Célula Solar



Sensor de Pressão