

Lab 4 Eletrônica Aplicada- Aplicações não lineares de opamp's

Dispositivo	Quantidade	Dispositivo	Quantidade
Resistor $1\text{K}\Omega$	1	Resistor $10\text{K}\Omega$	2
Resistor $1\text{M}\Omega$	1	Capacitor $0.01\mu\text{F}$	1
CI LM741	1	Capacitor $0.47\mu\text{F}$	1
Potenciômetro $10\text{k}\Omega$	1		

Obs: $V_{CC}=\pm 12\text{V}$ nos itens 1 e 2 e osciloscópios em acoplamento tipo DC em todo roteiro.

1 Circuito Amplificador Integrador Inversor

Montar o circuito da figura 1. Medir os sinais de entrada e saída sincronizados no tempo, anexar as formas de onda. Os sinais de entrada deverão ser senoidal e quadrado (um por vez), com $f = 1\text{kHz}$ e 0.5V_{pp} de amplitude. A resistência de $1\text{M}\Omega$ serve para by-pass de corrente contínua - senão o capacitor nunca se descarregará.

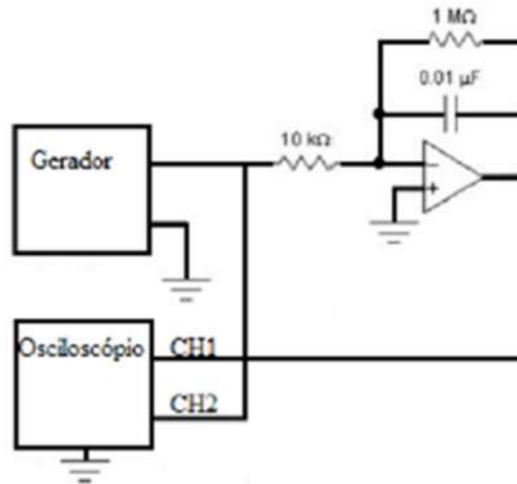


Figure 1: Amplificador integrador inversor.

2 Circuito Amplificador diferenciador Inversor

Montar o circuito da figura 2. Medir os sinais de entrada e saída sincronizados no tempo, e anexar as formas de onda. Obs.: Os sinais de entrada deverão ser senoidal e quadrado, com $f = 1\text{kHz}$ e 0.5V_{pp} de amplitude.

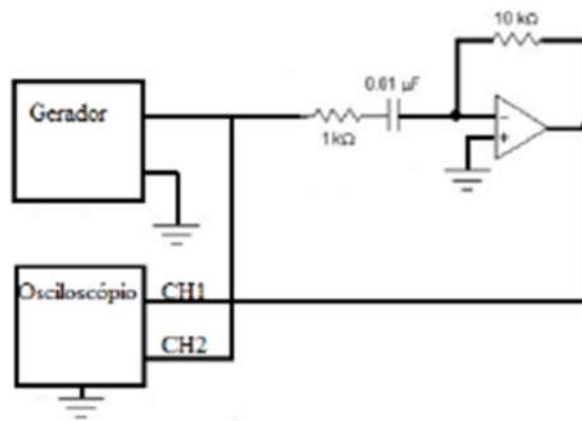


Figure 2: Amplificador diferenciador inversor.

Para ambos sinais de entrada o sinal de saída V_o foi o esperado? Justificar adequadamente as suas respostas.

3 Oscilador

Monte o circuito da fig. 3. Alimente o circuito com tensão simétrica +9 e -9 V (confira a pinagem do 741). Meça a saída no pino 6 do chip.

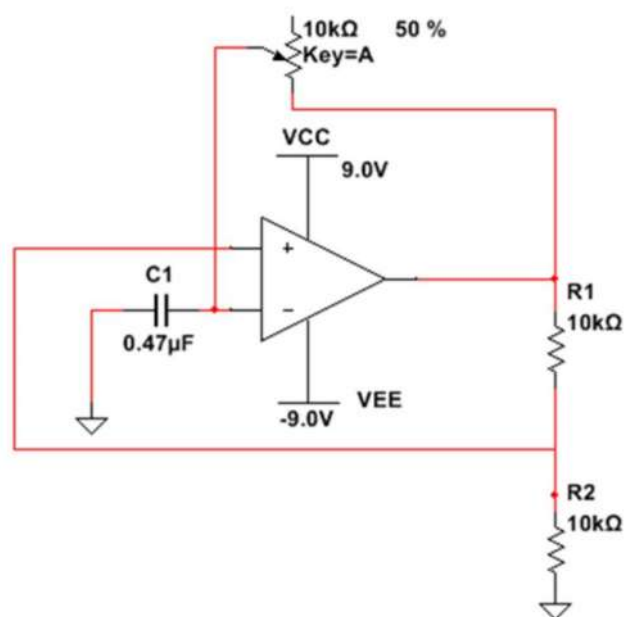


Figure 3: Oscilador.

Apresente a curva de saída do circuito. O que acontece com a frequência e shape da onda ao variar o potenciômetro? Justifique.

LM741

Operational Amplifier

General Description

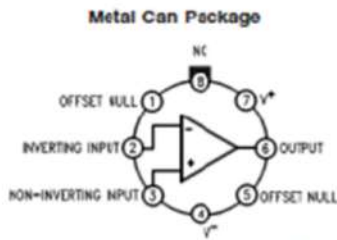
The LM741 series are general purpose operational amplifiers which feature improved performance over industry standards like the LM709. They are direct, plug-in replacements for the 709C, LM201, MC1439 and 748 in most applications. The amplifiers offer many features which make their application nearly foolproof: overload protection on the input and

output, no latch-up when the common mode range is exceeded, as well as freedom from oscillations.

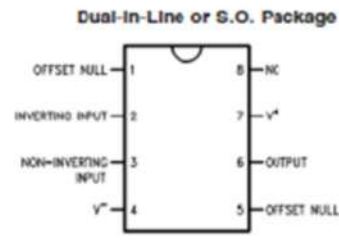
The LM741C is identical to the LM741/LM741A except that the LM741C has their performance guaranteed over a 0°C to +70°C temperature range, instead of 5°C to +125°C.

Features

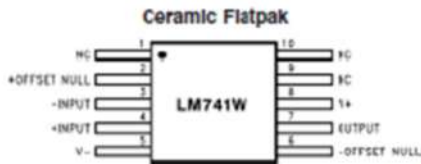
Connection Diagrams



Note 1: LM741H is available per JM38510/10101
Order Number LM741H, LM741H/883 (Note 1), LM741AH/883 or LM741CH
 See NS Package Number H08C



Order Number LM741J, LM741J/883, LM741CN
 See NS Package Number J08A, M08A or N08E



Order Number LM741W/883
 See NS Package Number W10A

Figure 4: Datasheet LM741.