

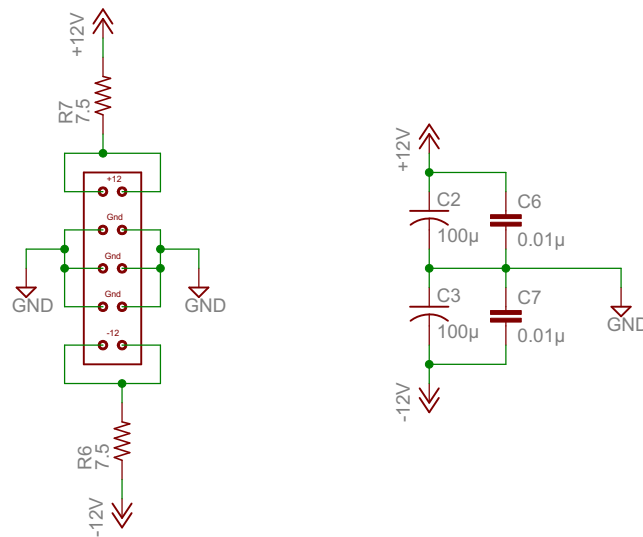
# VCA-v2

## Voltage Controlled Amplifier

A simple linear-envelope VCA

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Ryan Jensen



The control voltage (CV) determines how much current flows through the differential npn pair. The current flowing through the diff pair is proportional to the differential signal gain. The instrumentation amplifier converts the diff pair's differential output signal into a ground-referenced single-ended signal.

Note: T1 and T2 should be kept at the same temperature. Use a monolithically matched pair for best stability. However, discrete parts will work fine.

The BALANCE trim potentiometer is used to balance the differential amplifier. To balance the diff pair amplifier, disconnect the AUDIO-IN jack (short the audio input to ground). Then, connect some audio-range signal to the CV input (I suggest a 400 Hz to 1 kHz square wave). Turn the CV-LVL knob all the way up. Listen to the sound coming out of the AUDIO-OUT jack. You will probably hear your input signal leaking through. Tune the BALANCE trim pot until your signal at the CV input can no longer be heard at the output (tune for minimum volume). This ensures that when your carrier is at 0 V, your modulation signal has no effect on the output audio.

