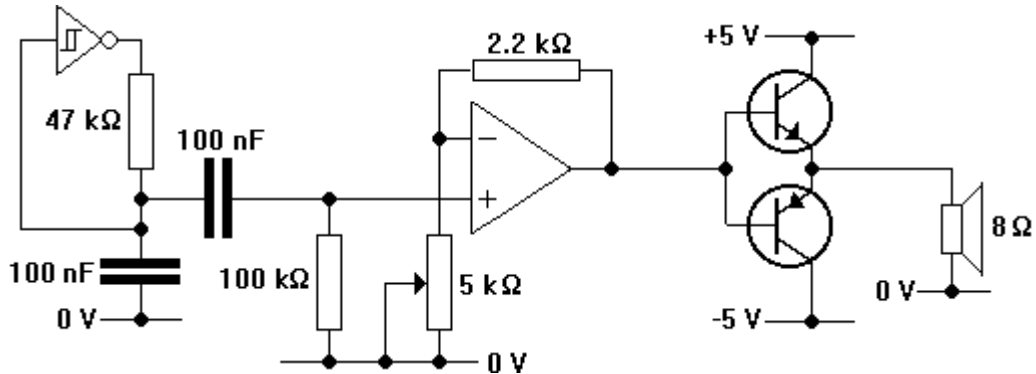


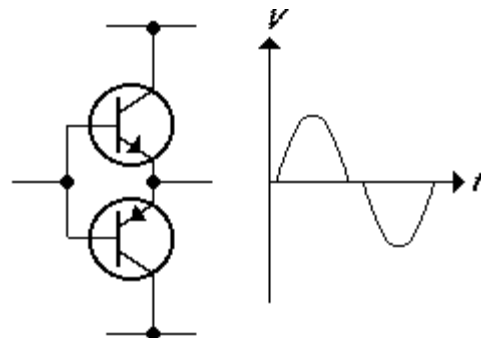
Investigating a power amplifier

The diagram below shows the circuit which you will be using to test the behaviour of a push-pull follower.



1. Start off by assembling the relaxation oscillator on the left. Run the 40106 Schmitt trigger NOT gate from +5 V and -5 V instead of +5 V and 0 V. If all is well, its output should be a 500 Hz triangle wave with a peak voltage of about 500 mV.
2. Build the non-inverting amplifier. Use a CRO to check that adjusting the potentiometer alters the amplitude of the signal at the amplifier output.

3. Put together the push-pull follower, using power transistors, but don't insert the speaker yet. Use the CRO to check that the a.c. signal at the emitters is distorted.



4. Adjust the amplifier to its minimum gain ($\neq 1$). Connect the speaker to the output of the push-pull follower.

5. Use a double-beam CRO to look at the signals at the bases and emitters of the transistors. Slowly turn up the gain of the amplifier. Note what happens to the CRO trace and the sound from the speaker.

6. Now place the push-pull follower inside the feedback loop of the non-inverting amplifier (similar to the arrangement shown opposite). Repeat step 4.

