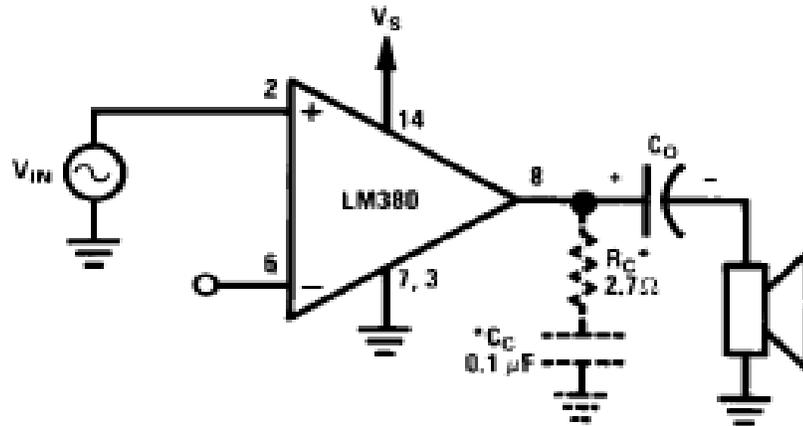


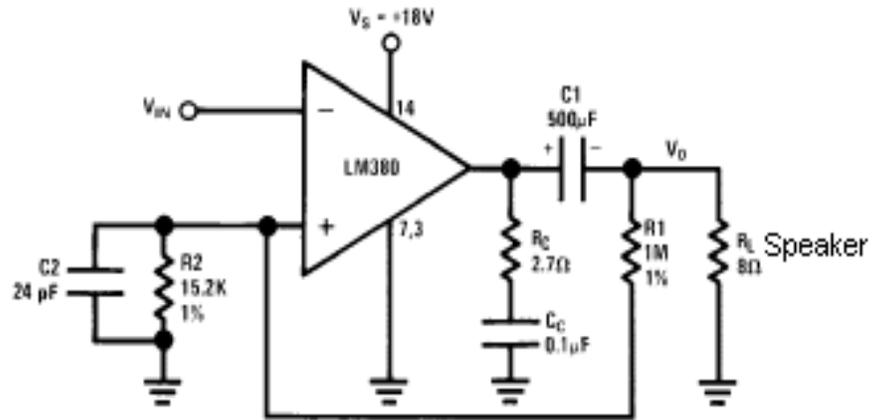
APPLICATIONS OF IC LM380

(i) Audio Power Amplifier:



- Amplifier requires very few external components because of the internal biasing, compensation & fixed gain.
- When the power amplifier is used in the non inverting configuration, the inverting terminal may be either shorted to ground, connected to ground through resistors & capacitors.
- Similarly when the power amplifier is used in the inverting mode, the non inverting terminal may be either shorted to ground or returned to ground through resistor or capacitor.
- Usually a capacitor is connected between the inverting terminal & ground if the input has a high internal impedance.
- As a precautionary measure, an RC combination should be used at the output terminal (pin 8) to eliminate 5-to-10 MHz oscillation.
- C1 is coupling capacitor which couples the output of the amplifier to the 8 ohms loud speaker which act as a load. The amplifier will amplify the V_{in} applied at the non-inverting terminal.

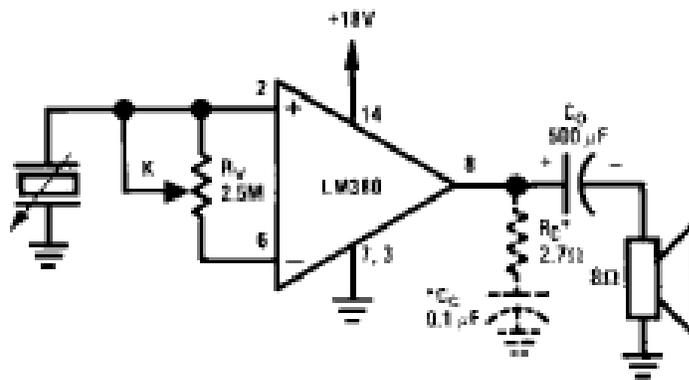
(ii) LM 380 as a High gain:



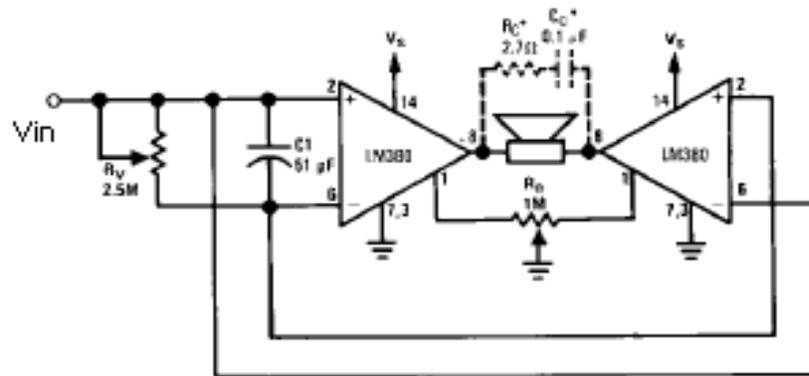
- The gain of LM380 is internally fixed at 50. But it can be increased by using the external components.
- The increase in gain is possible due to the use of positive feedback, this setup to obtain a gain 200.

(iii) LM 380 as a variable Gain:

- Instead of getting a fixed gain of 50, it is possible to obtain a variable gain up to 50 by connecting a potentiometer between the input terminals.



(iv) LM 380 as a Bridge Audio Power Amplifier:



- If a certain application requires more power than what is provided by a single LM380 amplifier, then 2 LM380 chips can be used in the bridge configuration.
- With this arrangement we get an output voltage swing which is twice that of a single LM380 amplifier.
- As the voltage is doubled, power output will increase by four times that of a single LM380 amplifier. The pot R4 is used to balance the output offset voltages of the two chips.

(v) Intercom system using LM 380:

- When the switch is in Talk mode position, the master speaker acts as a microphone.
- When the switch is in Listen position, the remote speaker acts as a microphone.
- In either phone the overall gain of the circuit is the same depends on the turns of transformer T.

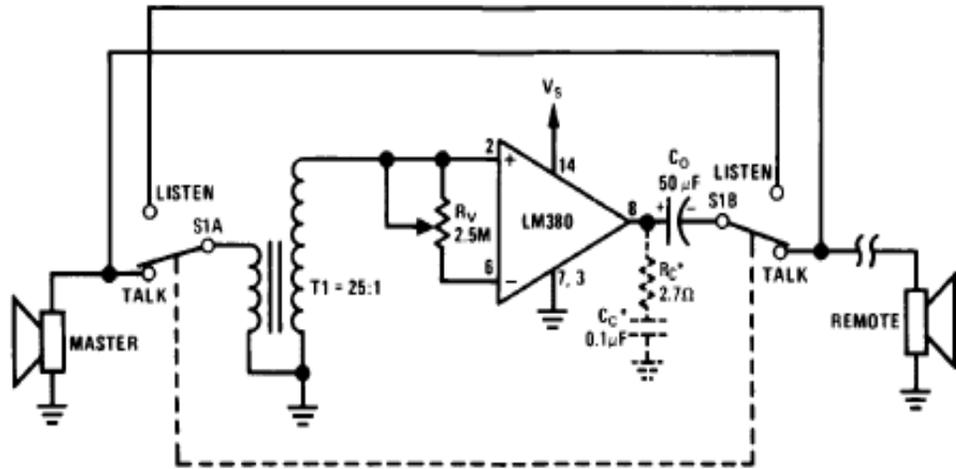


Fig: Talk mode

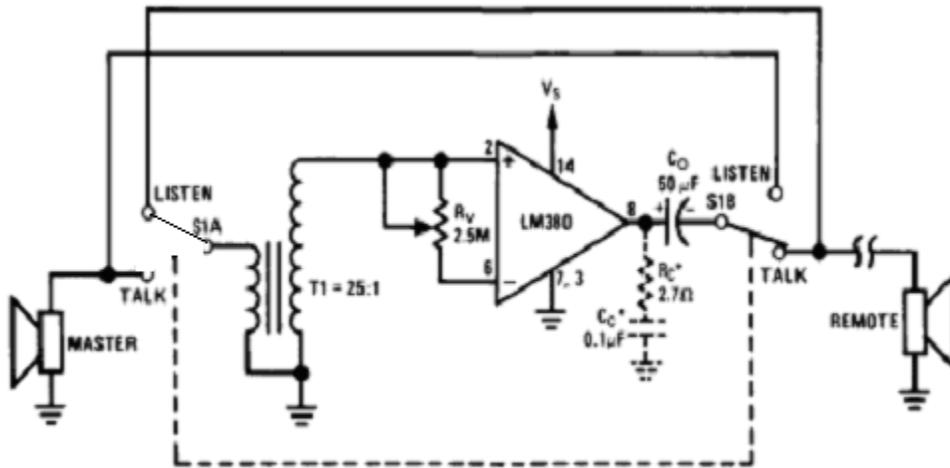


Fig: Listen mode