

Total solder points: 33
Difficulty level: *beginner* 1 2 3 4 5 *advanced*

7W mono amplifier



K4001

*Small but powerful
multipurpose amplifier.*

Features:

This small amplifier is constructed around the TDA2003 IC, capable of delivering 4Wrms at 4ohms. The IC is completely thermally and short-circuit protected. A conventional direct current can be connected as supply.

Specifications :

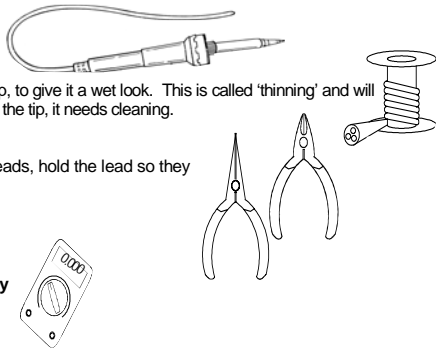
- Music output power : 7W/4ohm
- RMS output power : 3.5W/4ohm or 2W/8ohm
- Total harmonic distortion : 0.05% (1W/1KHz)
- Frequency response : 20Hz-20KHz (-3dB)
- Input sensitivity : 40mV/150Kohm
- Signal/noise ratio : 86dB (A weighted)
- Power supply : 8-18VDC/0.5A
- Dimensions : 55x35mm (2.2" x 1.4")

1. Assembly (Skipping this can lead to troubles !)

Ok, so we have your attention. These hints will help you to make this project successful. Read them carefully.

1.1 Make sure you have the right tools:

- A good quality soldering iron (25-40W) with a small tip.
- Wipe it often on a wet sponge or cloth, to keep it clean; then apply solder to the tip, to give it a wet look. This is called 'thinning' and will protect the tip, and enables you to make good connections. When solder rolls off the tip, it needs cleaning.
- Thin raisin-core solder. Do not use any flux or grease.
- A diagonal cutter to trim excess wires. To avoid injury when cutting excess leads, hold the lead so they cannot fly towards the eyes.
- Needle nose pliers, for bending leads, or to hold components in place.
- Small blade and Phillips screwdrivers. A basic range is fine.



For some projects, a basic multi-meter is required, or might be handy

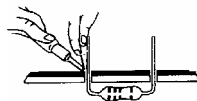
1.2 Assembly Hints :

- ⇒ Make sure the skill level matches your experience, to avoid disappointments.
- ⇒ Follow the instructions carefully. Read and understand the entire step before you perform each operation.
- ⇒ Perform the assembly in the correct order as stated in this manual
- ⇒ Position all parts on the PCB (Printed Circuit Board) as shown on the drawings.
- ⇒ Values on the circuit diagram are subject to changes.
- ⇒ Values in this assembly guide are correct*
- ⇒ Use the check-boxes to mark your progress.
- ⇒ Please read the included information on safety and customer service

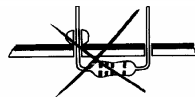
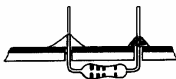
* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as 'NOTE' on a separate leaflet.

1.3 Soldering Hints :

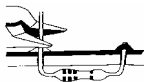
1- Mount the component against the PCB surface and carefully solder the leads



2- Make sure the solder joints are cone-shaped and shiny

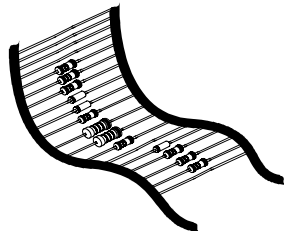


3- Trim excess leads as close as possible to the solder joint

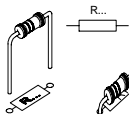


AXIAL COMPONENTS ARE TAPED IN THE CORRECT MOUNTING SEQUENCE !

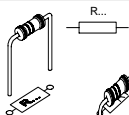
REMOVE THEM FROM THE TAPE ONE AT A TIME !



 You will find the colour code for the resistances and the LEDs in the HALG (general manual) and on our website: <http://www.velleman.be/common/service.aspx>

1. Resistors.

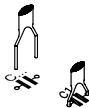
- R1 : 470 (4 - 7 - 1 - B)
- R2 : 4,7 (4 - 7 - B - B)
- R3 : 100 (1 - 0 - 1 - B)

2. Metal film resistor.

- R4 : 1 (1 - 0 - B - B - 9)

3. Capacitors.

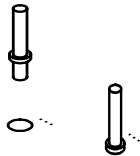
- C1 : 8n2 (822)
- C2 : 100nF (104)
- C3 : 100nF (104)

**4. PCB tabs**

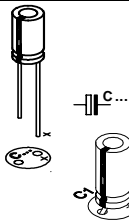
- IN
- GND

- LS
- GND

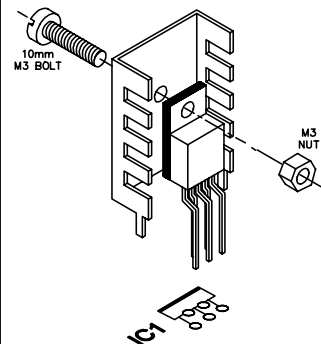
- +V
- GND

**5. Electrolytic Capacitors.
Watch the polarity !**

- C4 : 10 μ F
- C5 : 470 μ F
- C6 : 1000 μ F
- C7 : 1000 μ F

**6. IC.**

- IC1 : TDA2003!



7. Supply connection

Figure 1 is an example of a suitable mains supply for this circuit. Naturally, you can also use batteries to power the circuit.

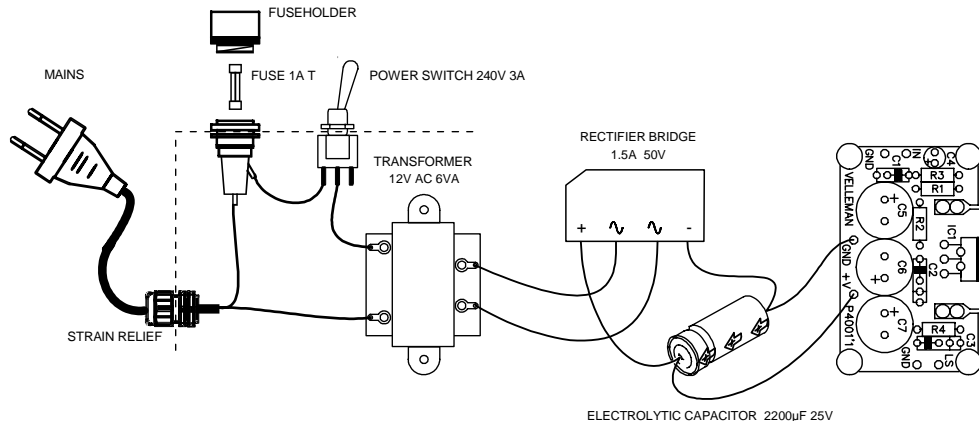


Fig. 1.0

8. Volume control

Adjust the volume by connecting a 47K logarithmic potentiometer as indicated in figure 2.0.

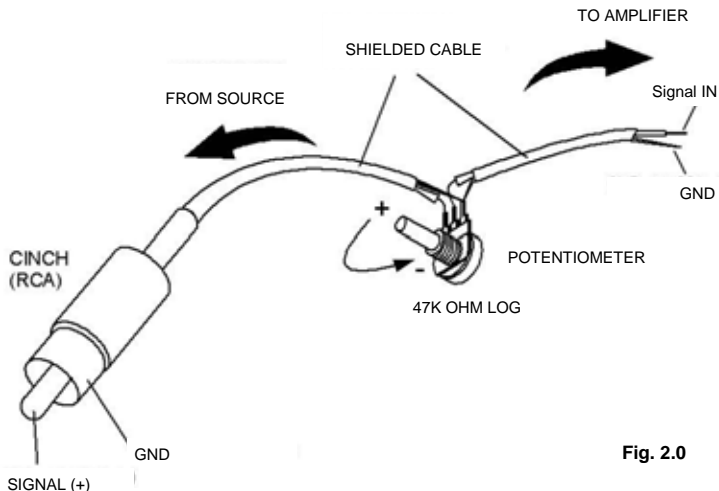


Fig. 2.0

9. Connection example

Figure 3.0 is an example of a connection diagram of a 4 or 8 ohm speaker that is connected to the pins LS and GND. The input signal should be connected with the IN and GND pins.

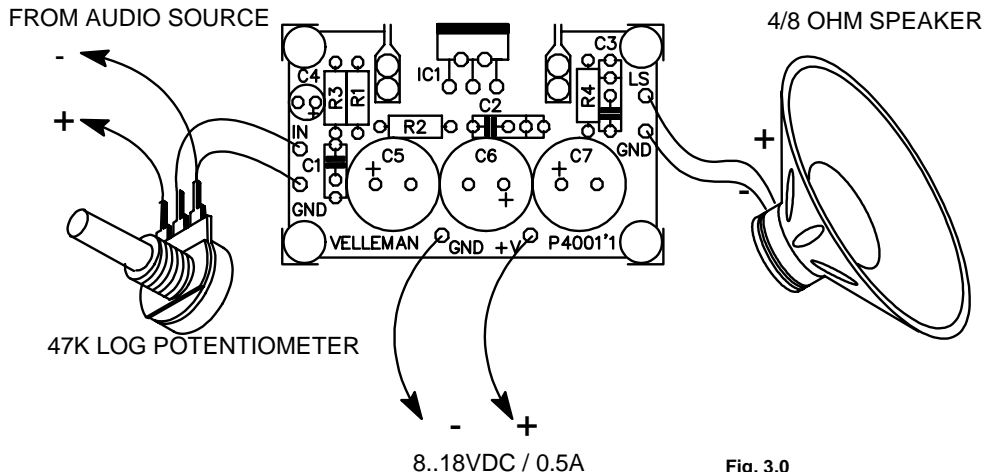
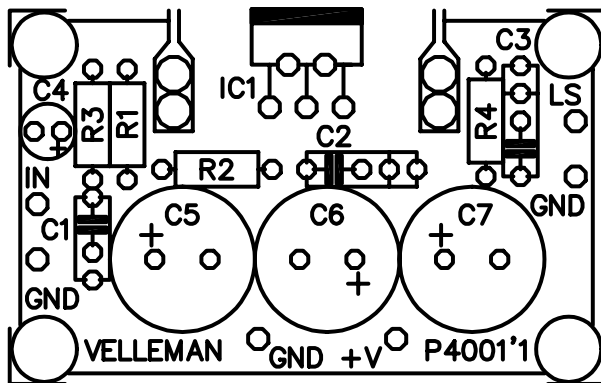
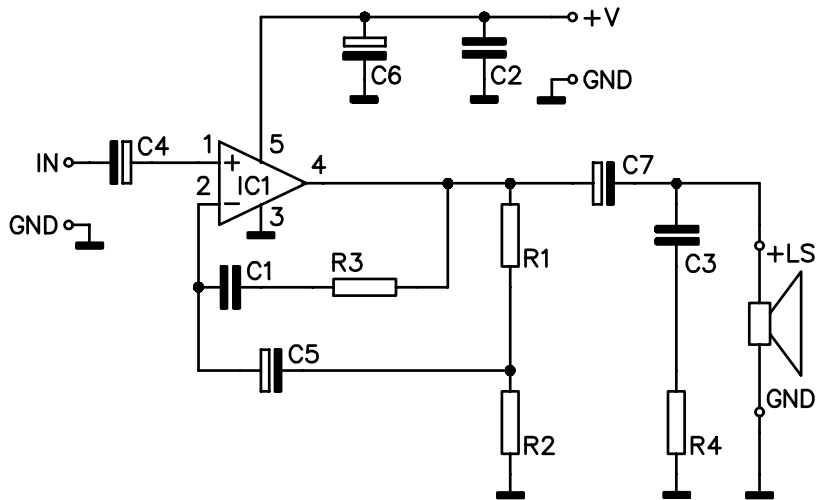


Fig. 3.0

10. PCB layout.



11. Diagram





Modifications and typographical errors reserved
© Velleman Components nv.
H4001IP - 2004 - ED1

