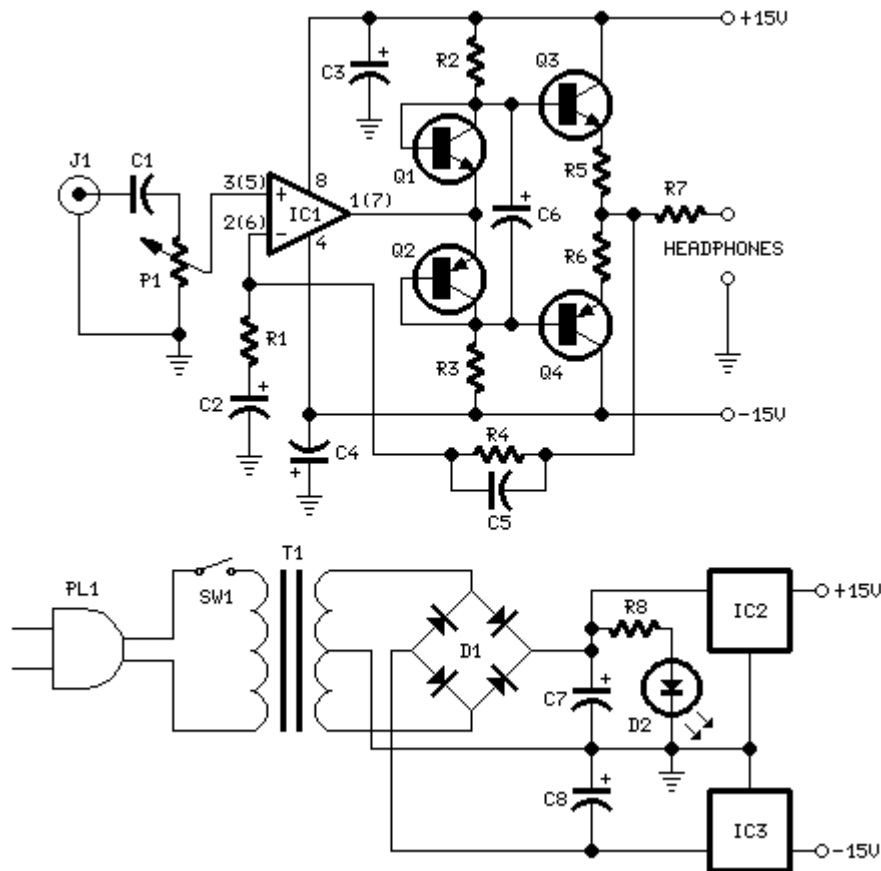


# Headphone Amplifier

**High Quality unit**  
**No need for a preamplifier**

## Circuit diagram:



## Amplifier parts:

P1 \_\_\_\_\_ 22K Log.Potentiometer (Dual-gang for stereo)

R1 \_\_\_\_\_ 560R 1/4W Resistor  
R2,R3 \_\_\_\_\_ 10K 1/4W Resistors  
R4 \_\_\_\_\_ 12K 1/4W Resistor  
R5,R6 \_\_\_\_\_ 2R2 1/4W Resistor  
R7 \_\_\_\_\_ 22R 1/2W Resistor

C1 \_\_\_\_\_ 1 $\mu$ F 63V Polyester Capacitor

C2,C3,C4\_\_\_\_\_100 $\mu$ F    25V Electrolytic Capacitors  
C5\_\_\_\_\_22pF    63V Polystyrene or Ceramic Capacitor  
C6\_\_\_\_\_22 $\mu$ F    25V Electrolytic Capacitor

IC1\_\_\_\_\_LM833 or NE5532 Low noise Dual Op-amp

Q1,Q3\_\_\_\_\_BC337    45V 800mA NPN Transistors  
Q2,Q4\_\_\_\_\_BC327    45V 800mA PNP Transistors

J1\_\_\_\_\_RCA    audio input socket

## Power supply parts:

R7\_\_\_\_\_2K2    1/4W Resistor

C7,C8\_\_\_\_\_2200 $\mu$ F    25V Electrolytic Capacitors

D1\_\_\_\_\_100V 1A Diode bridge

D2\_\_\_\_\_5mm. or 3mm. Red LED

IC2\_\_\_\_\_7815    15V 1A Positive voltage regulator IC

IC3\_\_\_\_\_7915    15V 1A Negative voltage regulator IC

T1\_\_\_\_\_220V Primary, 15 + 15V Secondary 5VA Mains transformer

PL1\_\_\_\_\_Male Mains plug

SW1\_\_\_\_\_SPST Mains switch

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## Notes:

- | Can be directly connected to CD players, tuners and tape recorders.
- | Tested with several headphone models of different impedance: 32, 100, 245, 300, 600 & 2000 Ohms.
- | Can drive old 8 Ohms impedance headphones, but these obsolete devices are not recommended.
- | Schematic shows left channel and power supply.
- | Numbers in parentheses show IC1 right channel pin connections.
- | A correct grounding is very important to eliminate hum and ground loops. Connect in the same point the ground sides of J1, P1, C2, C3 & C4. Then connect separately the input and output grounds at the power supply ground.

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## Technical data:

**Output voltage:** Well above 5V RMS on all loads

**Sensitivity:** 250mV input for 5V RMS output

**Frequency response:** Flat from 30Hz to 20KHz

**Total harmonic distortion @ 1KHz & 10KHz:** Below 0.005% on 32 Ohms load and up to 4V RMS output (typical 0.003%)

**Total harmonic distortion @ 1KHz & 10KHz:** Below 0.005% on 100 to 2000 Ohms load and up to 5V RMS output (typical 0.003%)

**Unconditionally stable on capacitive loads**

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