

MOSFET AMPLIFIER CIRCUITS

This article lists various types of audio amplifier circuits using Mosfet. We have tested all these circuits in our lab and we found all of them performing satisfactorily.

Note: This article will be modified with new versions of Mosfet amplifier circuits in future; we shall notify new additions in our home page.

This article contains following list of amplifier circuits using Mosfet.

List of Circuits

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1. 18 Watts Mosfet Audio Amplifier

Description

This circuit is an audio amplifier capable of delivering a decent output power with a minimum no: of parts, with considerable sound quality.

The amplifier employs only one transistor and two MOSFETs and few resistors and capacitors in a shunt feedback scheme. This tiny circuit can deliver a whopping 18Watts into 8 Ohm speaker or 30W into a 4 Ohm speaker.

To get such a good performance and stability out of few components, a high quality well regulated DC power supply is necessary. This is very essential for reducing noise and getting a constant output power on varying loads. A good DC voltage regulator able of providing more than 2 Amps @ 40V can be used. You can expect such a power supply design very soon here in the power supply section.

Tips.

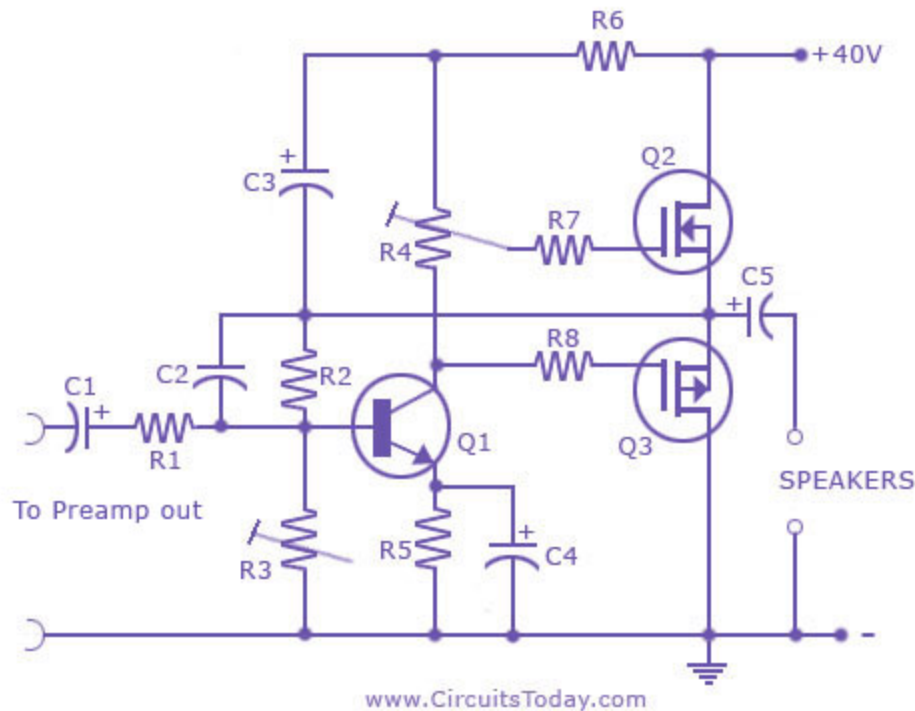
Assemble the board on a good quality PCB. Use a preamplifier board with tone control prior to this amplifier to get better performance. If you don't want, then no problem because this amplifier circuit has enough punch with in it.

Components.

- R1.....2K2 1/4W Resistance
- R2.....27K 1/4W Resistance
- R3,R4.....2K2 1/2W Trimmers
- R5.....100R 1/4W Resistance
- R6.....1K 1/4W Resistance
- R7,R8......330R 1/4W Resistance
- C122 μ F 25V Electrolytic Capacitance
- C247pF 63V Polyester or Ceramic Capacitance
- C3,C4100 μ F 50V Electrolytic Capacitance
- C52200 μ F 50V Electrolytic Capacitance
- Q1BC550C
- Q2IRF530 or MTP12N10
- Q3..... IRF9530 or MTP12P10

18 Watts Mosfet Amplifier Circuit Diagram.

18 watt Mosfet Amplifier Circuit

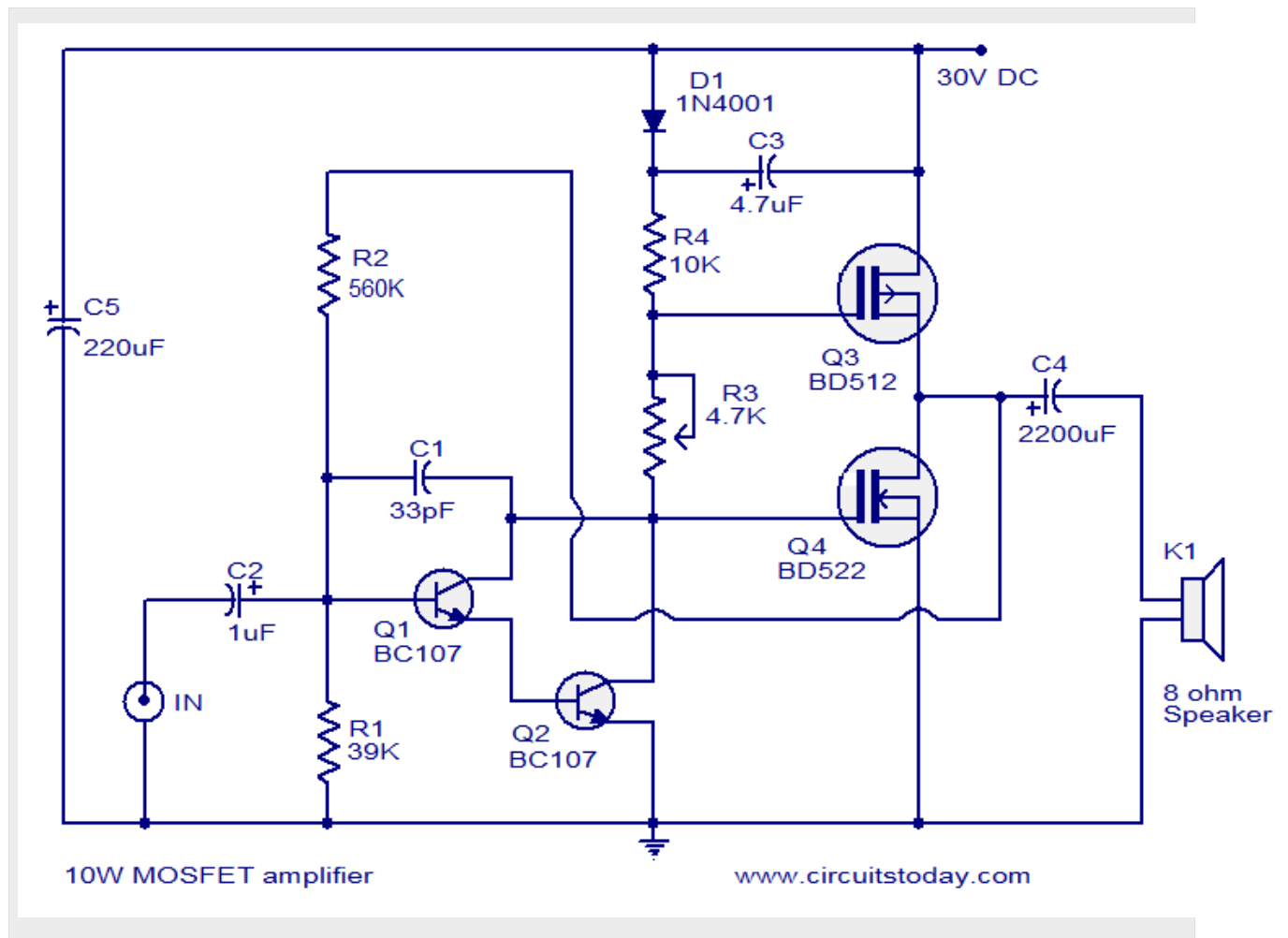


2. 10 Watts Mosfet Audio Amplifier

Description.

The diagram shown here is of a 10W MOSFET audio amplifier circuit that requires only a single supply. Single rail supply is seldom used in Class-B power amplifiers. Anyway, for low power applications like this it's quite fine. Actually I got this circuit from an old cassette player that is still working and I am publishing it as it is. The powers MOSFETs BD512 and BD522 are obsolete now and so you may use any other matching power MOSFETS instead of them. Transistors Q1 and Q2 is wired as a Darlington pair works as the preamplifier. Preset R3 controls the quiescent current while R2 provides feedback. Output is coupled to speaker through capacitor C4. Capacitor C5 is the power supply filter and C2 is the input DC decoupling capacitor.

Mosfet audio amplifier Circuit diagram



10 watts mosfet amplifier

Notes.

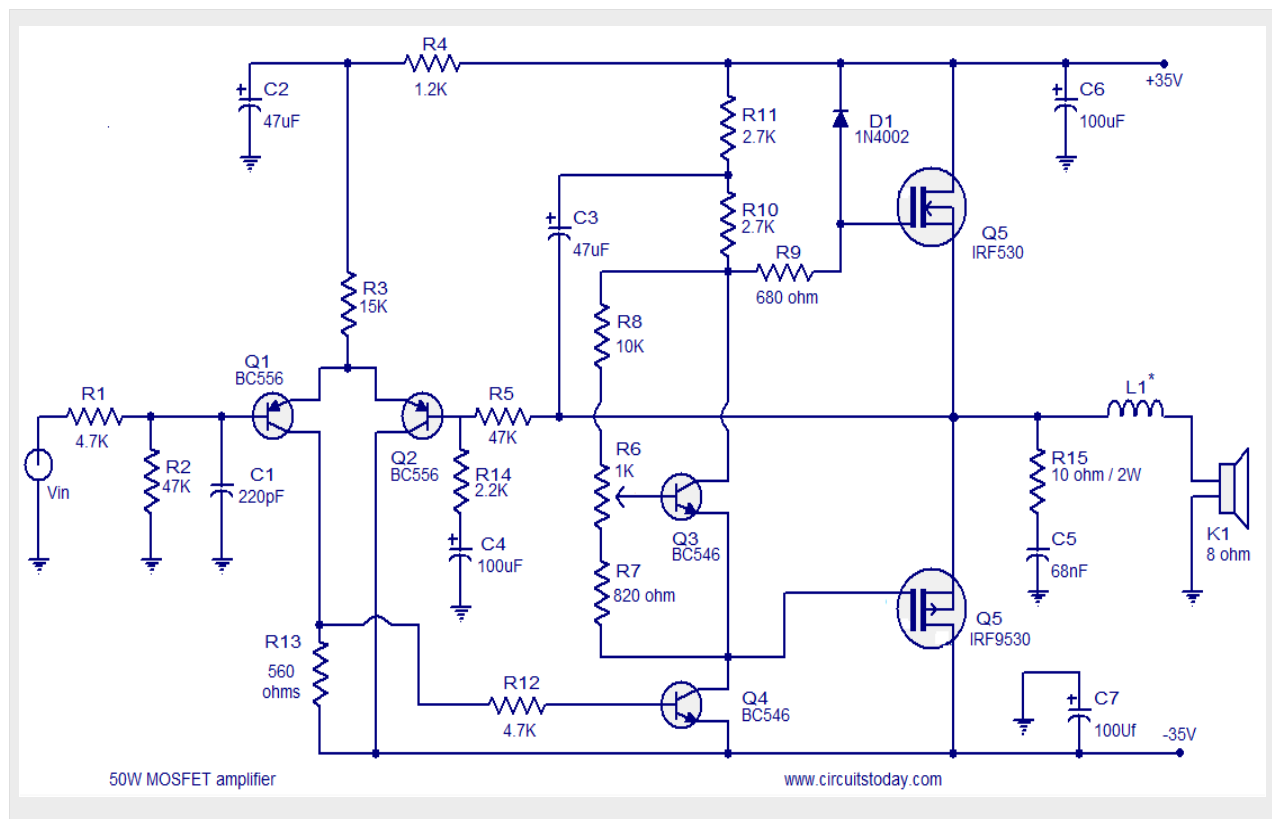
- ❑ The circuit can be assembled on a vero board.
- ❑ Use 30V DC for powering the circuit.
- ❑ Do not expect much performance from this amplifier.
- ❑ Capacitors C3, C4, C5 must be rated 50V and C2 can be 10V.
- ❑ Use a 8 ohm 15W speaker as load.

3. 50 Watts Mosfet Amplifier

Description:

The first stage of the amplifier is a differential amplifier based on transistors Q1 and Q2. Capacitor C8 is the input DC decoupler, R1 limits input current and capacitor C1 bypasses unwanted high frequencies. The second stage is the driver stage consisting of transistors Q3 and Q4. Output stage is a complementary push pull stage based on MOSFETs IRF530 and IRF9530. Output is coupled the speaker using the inductor L1. Network comprising of R15 and C5 is meant for noise reduction. Capacitors C6 and C7 are power supply filters. Preset R6 is meant for adjusting the quiescent current.

50 Watts Mosfet Amplifier Circuit diagram.



Mosfet amplifier circuit – 50 watts

Notes:

- ▣ Assemble the circuit on a good quality PCB.
- ▣ Use +/-35V DC dual supply for powering the circuit.
- ▣ For L1 make 12turns of enameled copper wire on a 1cm dia: plastic former.
- ▣ C6 and C7 must be rated 50V; other electrolytic can be 10 or 15V.
- ▣ Heat sink is necessary for the MOSFETs. A 8x4x4 inch finned Aluminum heat sink will do.
There is no such thing as a heat sink that is too large.

Source : <http://www.circuitstoday.com/mosfet-amplifier-circuits#10-watts>