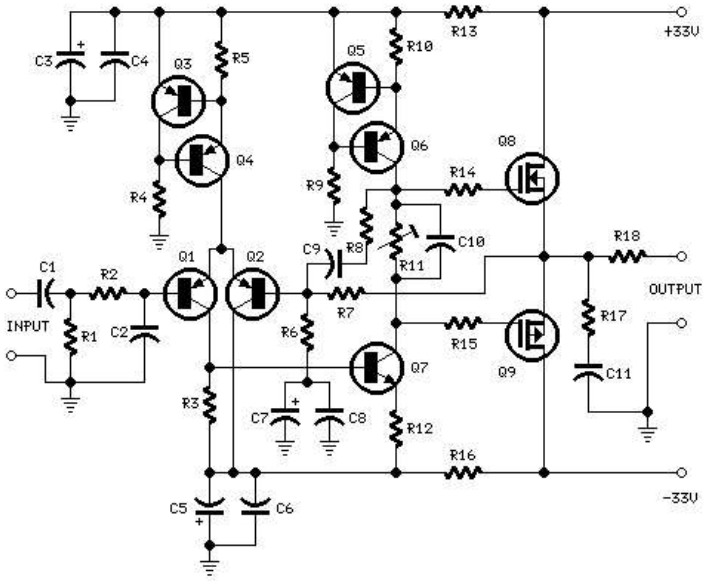
25W Mosfet audio amplifier

source: RED Free Circuit Designs

-- High Quality simple unit
-- No need for a preamplifier

Circuit diagram:



Parts:

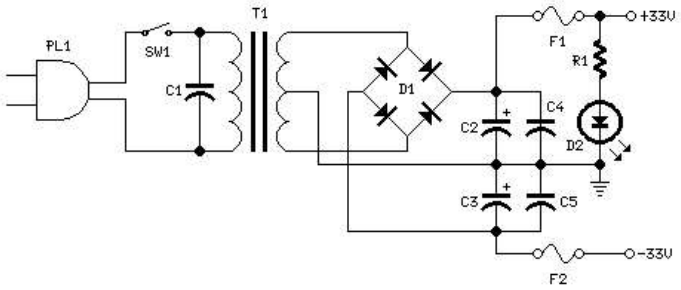
R1,R4 = 47K	1/4W Resistors
R2 = 4K7	1/4W Resistors
R3 = 1K5	1/4W Resistors
R5 = 390R	1/4W Resistors
R6 = 470R	1/4W Resistors
R7 = 33K	1/4W Resistors
R8 = 150K	1/4W Resistors
R9 = 15K	1/4W Resistors
R10 = 27R	1/4W Resistors
R11 = 500R	1/2W Trimmer Cermet
R12,R13,R16 = 10R	1/4W Resistors
R14,R15 = 220R	1/4W Resistors
R17 = 8R2	2W Resistor
R18 = R22	4W Resistor (wirewound)

C1 = 470nF	63V Polyester Capacitor

C2 = 330pF	63V Polystyrene Capacitor
C3,C5 = 470µF	63V Electrolytic Capacitors
C4,C6,C8,C11 = 100nF	63V Polyester Capacitors
C7 = 100µF	25V Electrolytic Capacitor
C9 = 10pF	63V Polystyrene Capacitor
C10 = 1µF	63V Polyester Capacitor

Q1-Q5 = BC560C	45V100mA Low noise High gain PNP Transistors
Q6 = BD140	80V 1.5A PNP Transistor
Q7 = BD139	80V 1.5A NPN Transistor
Q8 = IRF532	100V 12A N-Channel Hexfet Transistor
Q9 = IRF9532	100V 10A P-Channel Hexfet Transistor

Power supply circuit diagram:



Parts:

R1 = 3K3	1/2W Resistor

C1 = 10nF	1000V Polyester Capacitor
C2,C3 = 4700µF	50V Electrolytic Capacitors
C4,C5 = 100nF	63V Polyester Capacitors

D1	200V 8A Diode bridge
D2	5mm. Red LED
F1,F2	3.15A Fuses with sockets

T1	220V Primary, 25 + 25V Secondary 120VA Mains transformer

PL1	Male Mains plug

SW1	SPST Mains switch

Notes:

- Can be directly connected to CD players, tuners and tape recorders. Simply add a 10K Log potentiometer (dual gang for stereo) and a switch to cope with the various sources you need.
- Q6 & Q7 must have a small U-shaped heatsink.
- Q8 & Q9 must be mounted on heatsink.
- Adjust R11 to set quiescent current at 100mA (best measured with an Avo-meter in series with Q8 Drain) with no input signal.
- A correct grounding is very important to eliminate hum and ground loops. Connect in the same point the ground sides of R1, R4, R9, C3 to C8. Connect C11 at output ground. Then connect separately the input and output grounds at power supply ground.

Technical data:

Output power: well in excess of 25Watt RMS @ 8 Ohm (1KHz sinewave)

Sensitivity: 200mV input for 25W output

Frequency response: 30Hz to 20KHz -1dB

Total harmonic distortion @ 1KHz: 0.1W 0.014% 1W 0.006% 10W 0.006% 20W 0.007% 25W 0.01%
Total harmonic distortion @10KHz: 0.1W 0.024% 1W 0.016% 10W 0.02% 20W 0.045% 25W 0.07%

Unconditionally stable on capacitive loads