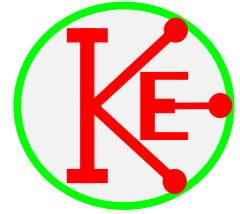


# TBA 820M Audio Amplifier.



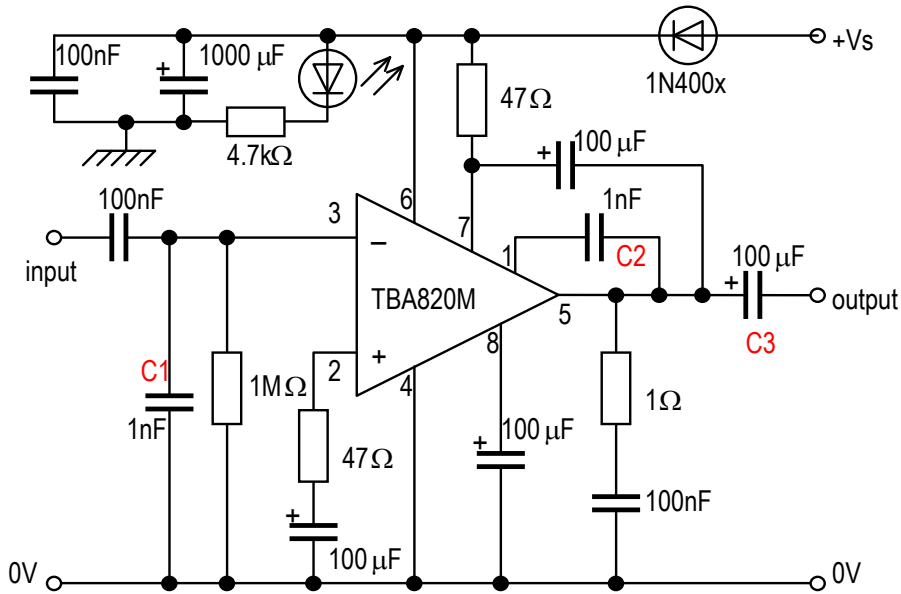
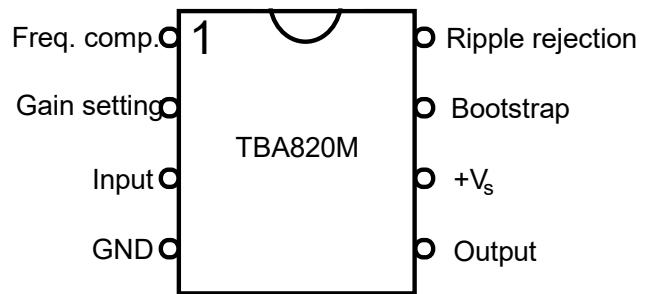
## Specification

Operates from 6V to 14V with reverse polarity protection.  
 Voltage gain  $\approx 100$  at 1kHz.  
 Power output from 12V supply is  $\approx 1W$  into  $8\Omega$ .  
 Half voltage gain bandwidth  $\approx 85Hz$  to 5kHz.  
 Input impedance is  $\approx 1M\Omega$  at 1kHz.

There are many amplifier circuits that can be used but this design is based on the TBA820M.

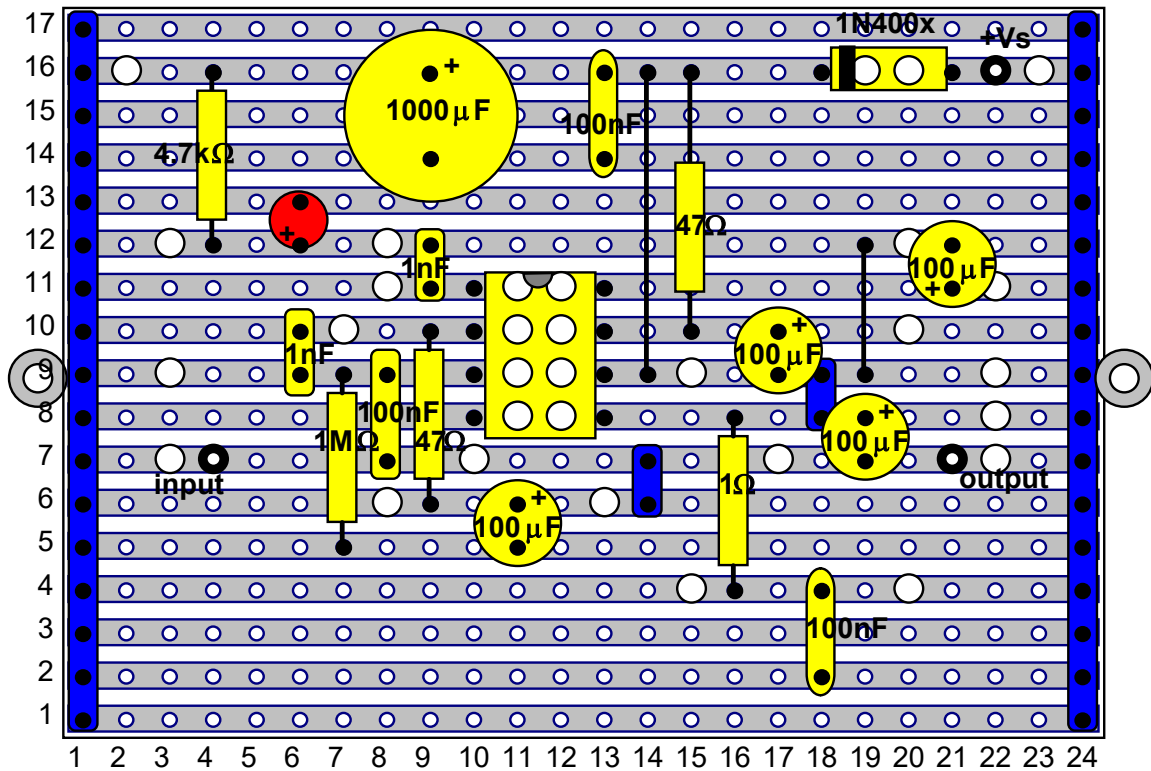
## TBA 820M

Low voltage applications	3 - 15V
Low quiescent current	4mA
Variable voltage gain	up to 200
Output power	2W
Bandwidth	up to 22kHz
Input resistance	$5M\Omega$



To increase the bandwidth of the amplifier to 'HiFi', C1 should be removed, C2 should be decreased to 220pF and C3 should be increased to 1000μF for an 8Ω speaker, 2200μF for a 4Ω speaker.

### Circuit board layout, TOP view.



### Components

1 × stripboard 17 strips by 24 holes	2 × 47Ω resistors
1 × TBA820M ic	1 × 4.7kΩ resistor
1 × 1N400(1 - 7) diode	1 × 1MΩ resistor
1 × 1000μF 16V capacitor	1 × 3mm red LED
4 × 100μF 16V capacitors	3 × single sided terminal pins
3 × 100nF 16V capacitors	2 × double sided terminal pins
2 × 1nF capacitor	2 × 3mm solder tags
1 × 1Ω resistor	

### Construction

Layout of the amplifier is not critical so long as the input and outputs are kept well apart to prevent the amplifier being unstable.

The diagram above and photographs below show construction onto a standard subsystem circuit board as described in the section on Subsystem Construction.

Construction is best started with the amplifier ic - with this accurately in place, the rest of the components and circuit breaks can be fitted around.

While the red LED is not important, it is useful to indicate that the amplifier is powered correctly.

