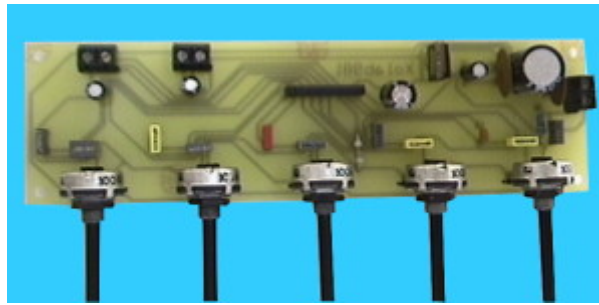
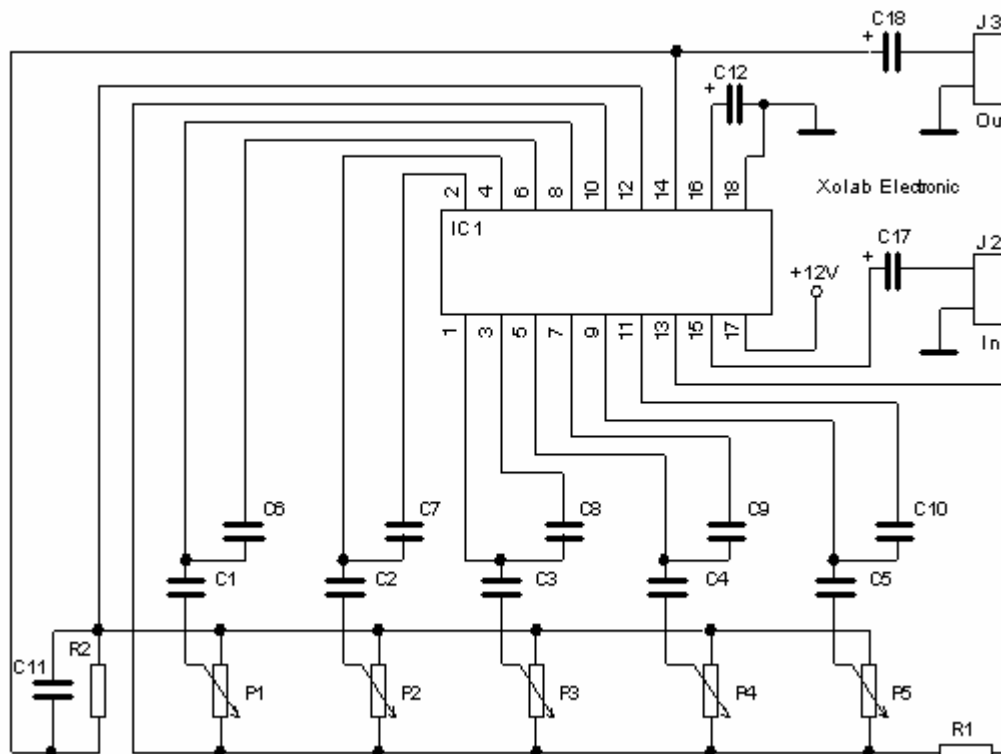


5-band mono graphic equalizer



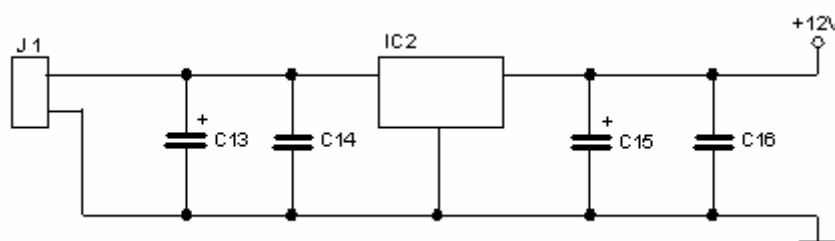
Graphic equalizer is used to equalize a low-frequency signal when classic treble and bass corrector is not enough. It cuts or gains signal in 5 frequency bands using 5 single pots. The kit is built on one-sided parts circuit board (PCB) sized 45x160mm. The circuit is based on ROHM manufactured integrated circuit BA3812L.

Figure 1



The schematic is shown on Figure 1. Voltage stabilized power supply (schematic shown on Figure 2) is based on 7812 voltage stabilizer. Use the layout to stock the PCB correctly. All parts are suited on this PCB. This circuit does not have any adjustable components and it works on first time. If you own a digital multi-meter you can check the filter's frequency characteristics in all bands. All technical data taken from the manufacturer's data sheet are listed in the table. The BA3812L can be replaced by KA22235 produced by Samsung.

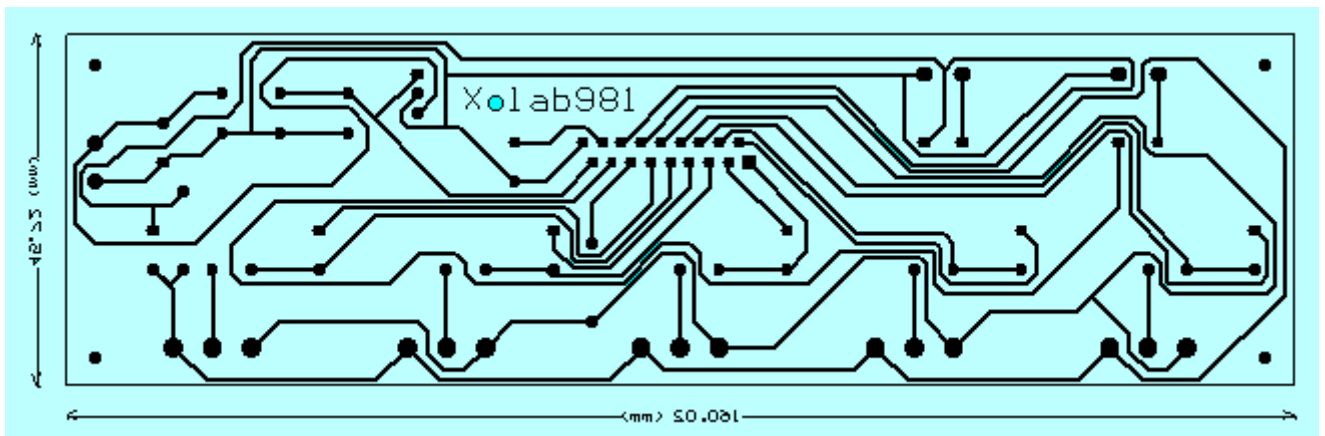
Figure 2



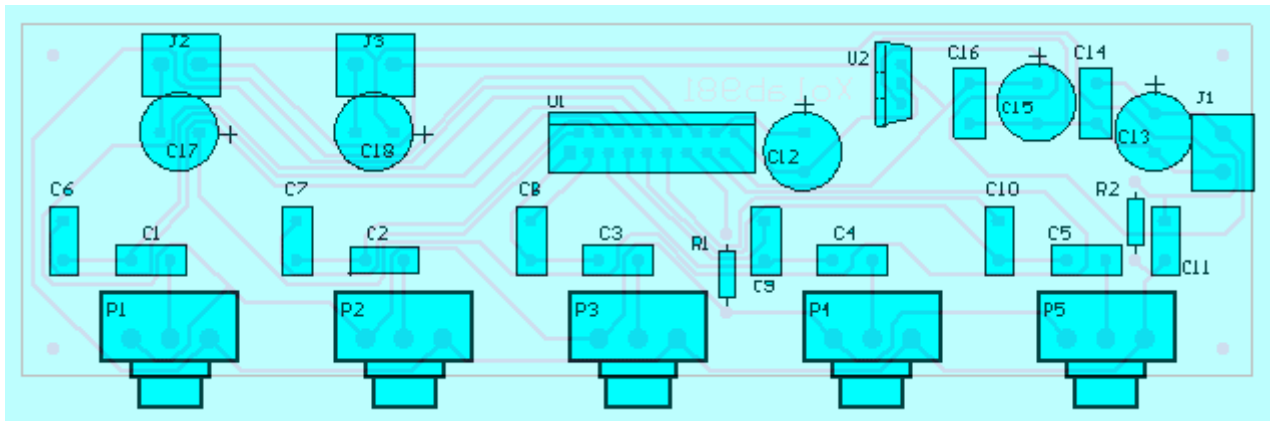
Technical specification

Supply Voltage:	12 ... 32 V =
Bands:	5
Frequency ranges:	67Hz, 250Hz, 1kHz, 4kHz, 11kHz
Control range:	typ.-12 ... +12 dB
Max. output voltage:	max. 2,1 V THD = 1%
Input/output gain:	0 dB
Total harmonic distortion:	0,01 % (Vout=120mV, 1kHz)

PCB - bottom side



PCB - component side



Parts:

R1, R2	6k8
P1, P2, P3, P4, P5	100k/lin.
C1	680nF
C2	220nF
C3	68nF
C4	22nF
C5	6n8
C6	100nF
C7	22nF

C8	4n7
C9, C11	1nF
C10	390pF
C12, C13	100uF/50V
C14, C16	100nF cer.
C15, C17, C18	10uF/50V
U1	BA3812L
U2	7812

5 band graphic equalizer using a single IC/chip

This circuit uses a single chip, IC BA3812L for realizing a 5 band graphic equalizer for use in hi-fi audio systems. The BA3812L is a five-point graphic equalizer that has all the required functions integrated onto one IC. The IC is comprised of the five tone control circuits and input and output buffer amplifiers. The BA3812L features low distortion, low noise, and wide dynamic range, and is an ideal choice for Hi-Fi stereo applications. It also has a wide operating voltage range (3.5V to 16V), which means that it can be adapted for use with most types of stereo equipment.

The five center frequencies are independently set using external capacitors, and as the output stage buffer amplifier and tone control section are independent circuits, fine control over a part of the frequency bandwidth is possible. By using two BA3812Ls, it is possible to construct a 10-point graphic equalizer. The amount of boost and cut can be set by external components.

The recommended power supply is 8V, but the circuit should work for a supply of 9V also. The maximum voltage limit is 16V.

The circuit given in the diagram operates around the five frequency bands:

100Hz / 300Hz / 1kHz / 3kHz / 10kHz

