

Power Amplifier 2 Watt Model GSK-602

This kit is designed to amplify (boost) audio signal, an excellent entry level tool to demonstrate the principles of an amplification circuit.

Technical Specifications

- Power Source: 3-12 VDC
- Power Consumption: 300 mA max.
- Output Power: 2 W max.
- Adjustment: amplification adjusted through trimmer potentiometer
- S/N Ratio: 80 dB (A weighted)
- Frequency Response: 20 Hz to 20 kHz (-3 dB)
- PCB Dimensions: 1.62 x 1.42 inches

Operating Principles

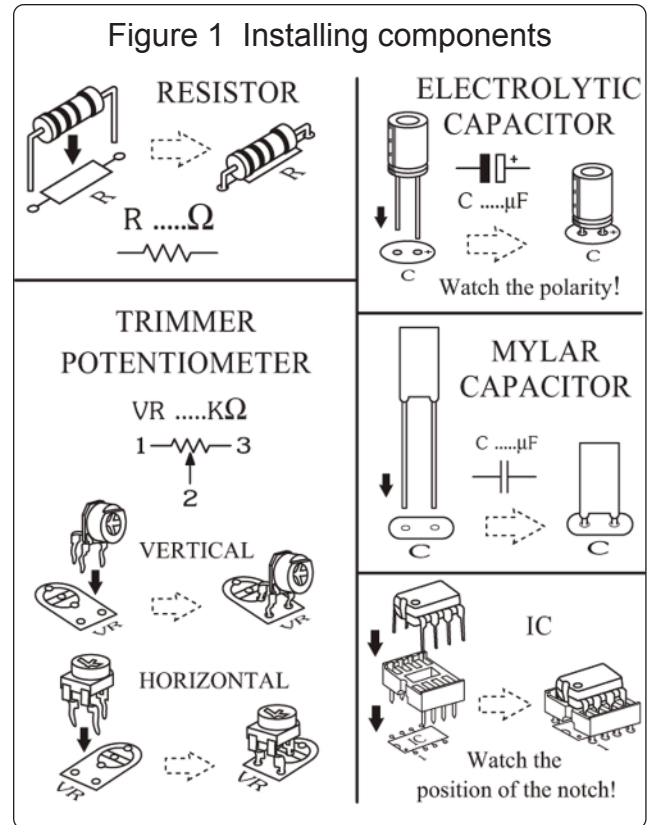
Input signal will pass through C1 and Variable Resistor 1 to adjust sound signal. Signal passes through Integrated Circuit 1 for amplification. Amplified signal passes through C8 for coupling to speaker.

Circuit Assembly

Please refer to Figures 1, 2 and 3 for aid in component placement. It is recommended to start with lower components i.e. diodes, resistors, electrolyte capacitors, and transistors. Be careful to check polarity with Figure 3 before soldering. Take extra precaution to ensure electrolytic capacitors are inserted correctly. If a problem is detected, it is best too use a desoldering pump or desoldering braids to remove component. This will minimize potential damage to the printed circuit board.

Testing

Adjust the potentiometer VR1 counterclockwise to minimize amplification. Connect input signal from radio, phone, CD, etc. to "IN" contacts. Connect speaker and power source. Increase volume by turning the potentiometer VR1 clockwise to hear amplified (increased volume) through speaker. If upon increasing the volume the sound becomes distorted the input signal is too strong and needs to be adjusted.



Troubleshooting

This circuit has only a few components, the main cause of problems come from misplaced components or faulty soldering. Utilize Figure 3 to ensure proper placement/polarity and then check solder points for connectivity.

Figure 2 Power amp 2 W circuit

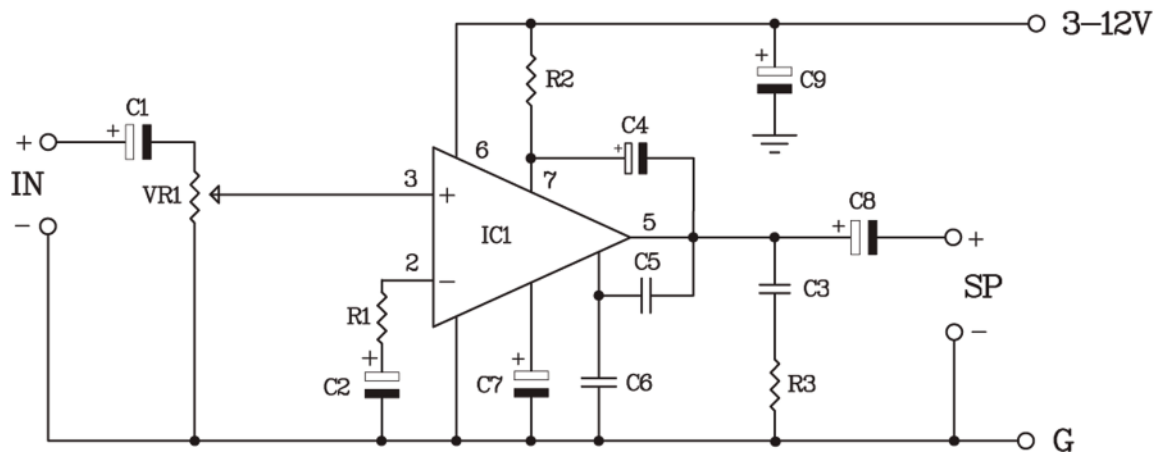
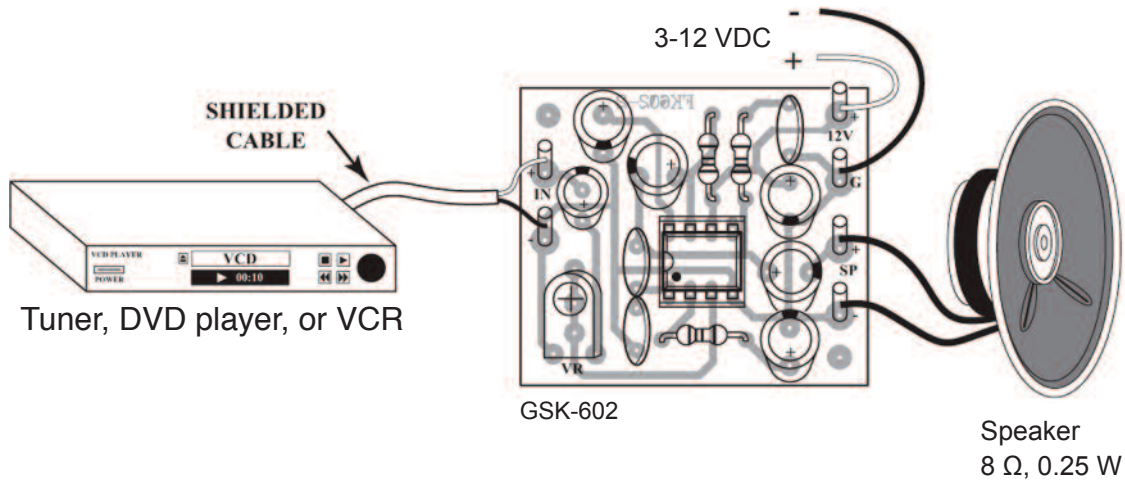


Figure 3 Connecting circuits



Resistors

R1	120 Ω	brown – red – brown - gold
R2	56 Ω	green – blue – black - gold
R3	1 Ω	brown – black – gold - gold

Potentiometer

VR1 10 kΩ or 103 or 14

Electrolytic Capacitors

C1	10 μF
C2, C4, C7	100 μF
C8	220 μF
C9	47 μF

Mylar Capacitors

C3	0.1 μF or 104
C5	220 pF
C6	0.003 μF or 302

Integrated Circuit

IC1 TBA820M