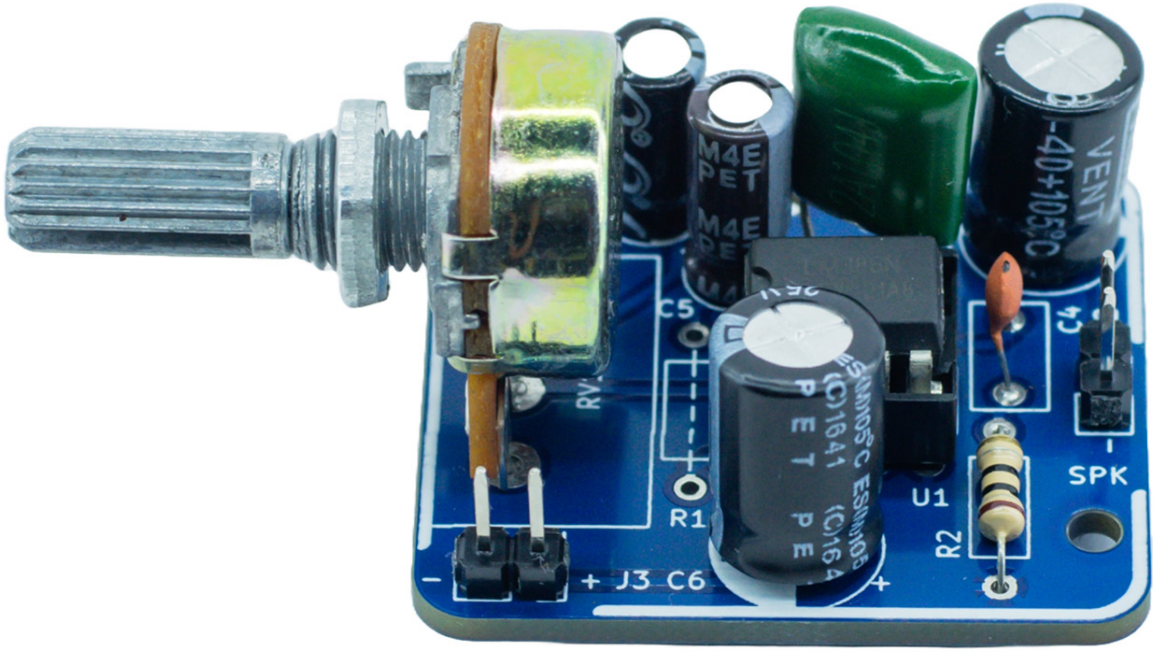
Simtelic



LM386 Power Amplifier

Thank you for purchasing this Simtelic DIY Electronic Kit.

Revision: 1.0.0-EN

Web Site: https://simtelic.com

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Introduction

This is an easy-to-use circuit board that can amplify audio signals to drive a speaker. It is based on the LM386 integrated circuit, which is a low-voltage audio power amplifier.

- **Low voltage operation:** The LM386 can operate on a wide range of supply voltages, from 4V to 12V. This makes it ideal for battery-powered applications.
- **High efficiency:** The LM386 is very efficient, converting a large percentage of the input power to output power. This means that it can produce a lot of sound power without draining the battery quickly.
- **Adjustable gain:** In this given PCB design the gain of the LM386 can be adjusted from 20 to 200. This allows you to control the volume of the output signal.
- **Low distortion:** The LM386 produces very low distortion, resulting in clear and accurate sound reproduction.
- **Applications:**
  - Portable radios
  - MP3 players
  - Speaker systems
  - Intercom systems
  - Doorbells
  - Telephone amplifiers

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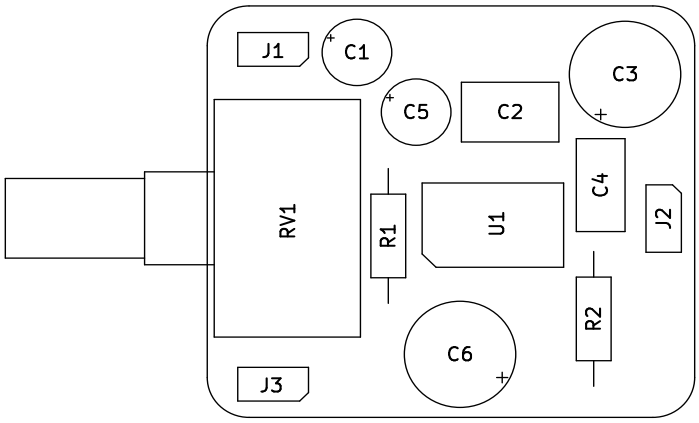
Identify connectors and adjustments

Top Side



J1 - Audio In.

J2 - Speaker Output.

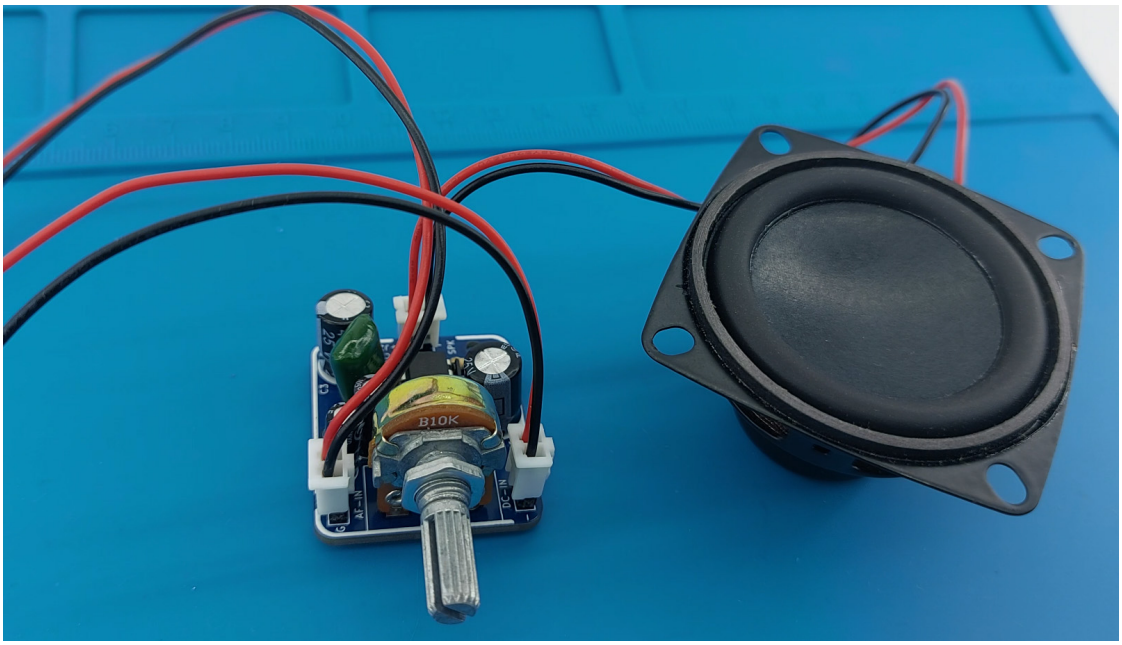
J3 - DC In.

RV1 - Volume controller.

C1	2.2µF/25V	(THT)
C2	0.1µF	(THT)
C3	470µF/25V	(THT)
C4	0.047µF	(THT)
C5	10µF/25V	(THT)
C6	220µF/25V	(THT)
R2	10Ω	(THT)
RV1	10kΩ (LOG) Potentiometer	
J1, J2 and J3	1x2-pin, 2.54mm Pin Header	
U1	LM386N	(DIP-8)

How to use

1. Connect the full range speaker with J2 pin header
2. Connect mono audio source with J1 pin header
3. Attached the DC power source to J3 pin header (please refer kit specifications)



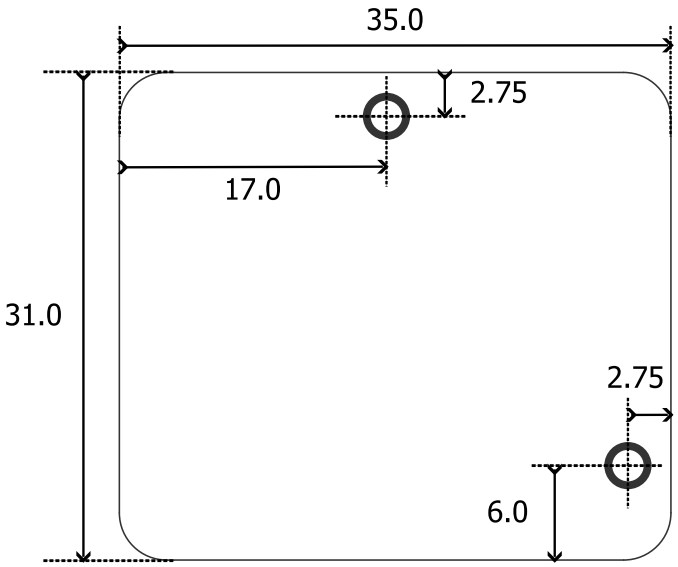
The LM386 has an internal feedback resistor of 1.35kΩ, which sets the gain to 20 if R1 is left open. If R1 is closed (short-circuit) the gain increases to 200. The value of the R1 can range between 1.5kΩ to 15kΩ.

PCB assembly video : https://www.youtube.com/watch?v=ducyk6rSn1c

Scan for the video

Kit specifications

Power supply	DC 4V - 12 V / 500mA
Gain	Adjustable between 20 - 200
Total harmonic distortion	0.2% (1 W, 8Ω)
Frequency Response	20Hz - 20kHz
Audio output power	Maximum 1W (8Ω)
Dimensions	35.0 x 31.0mm



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