

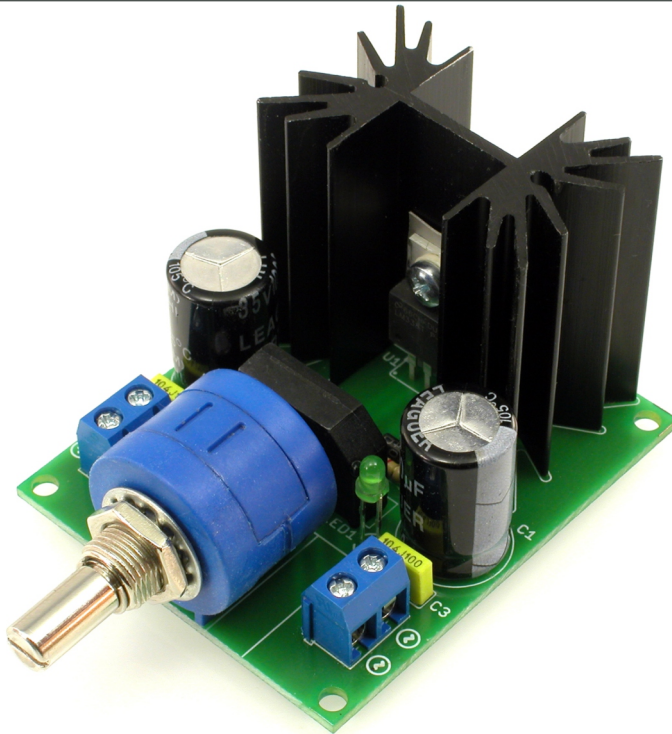
AVT 1976

Precise power supply with adjustable output voltage within range 1.5-32V/3A

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The LM338 integrated circuit based power supply module. LM338 integrates all components of a high-quality voltage regulator. A precision multi-turn potentiometer is used to control the output voltage.

Specifications

- supply voltage within range 5-24V AC or 5-33V DC
- output voltage 1.5-32V DC
- maximum output current 3A
- built-in overload protection and short-circuit protection

Functional description

The schematic of the power supply is shown in Figure 1. The standard stabilizer application is extended by a rectifier bridge, capacitive filtering input voltage and multi-turn potentiometer. The LM338 is protected against overheating and short-circuit. LED1 indicates that the power supply is on. The output voltage

is adjusted by a multi-turn, precision potentiometer P1. The maximum voltage applied to the module input must not exceed 24 V AC.

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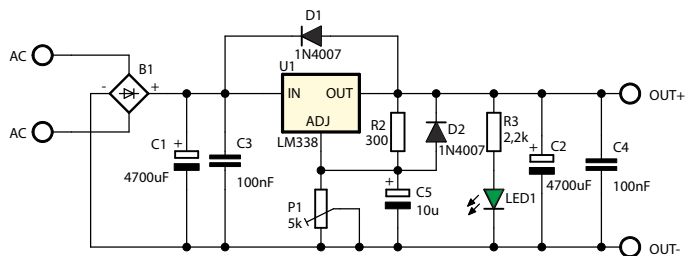


Figure 1. Schematic diagram

Assembly and test

Assembly is typical. It starts with the smallest components and ends up with the biggest ones.

The power supply is ready to operate immediately after the input voltage is applied.

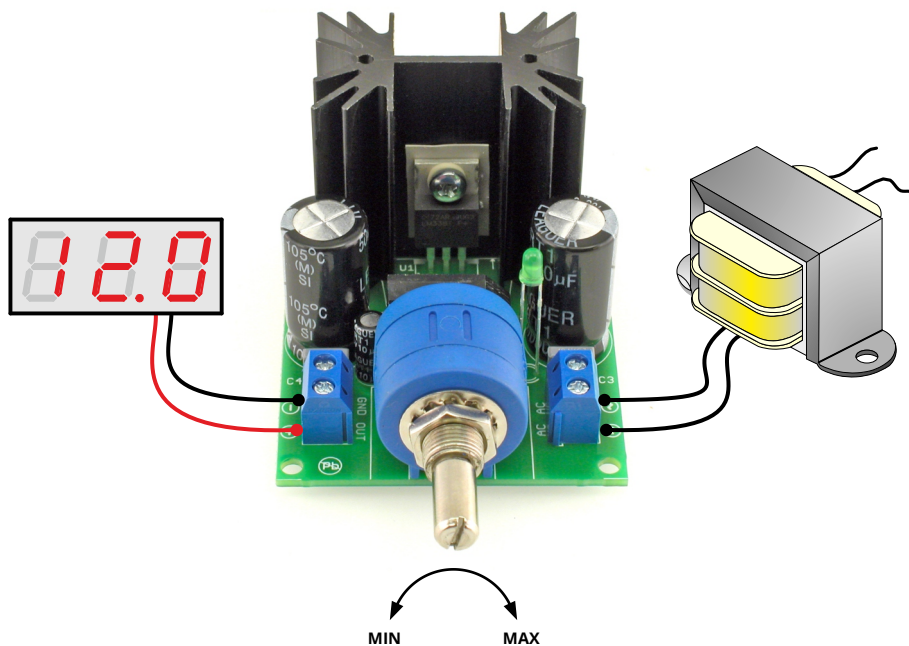


Figure 2. Connection example



Start off by soldering the printed circuit elements in order from smallest to largest. The unit assembled flawlessly, using the supplied components will operate immediately after switching on the power supply.

Component list

Resistors:

R2:.....220Ω (red-red-brown-gold)

R3:.....2,2kΩ (red-red-red-gold)

PR1:.....precision potentiometer 5kΩ

Capacitors:

C1, C2:1000μF !

C3, C4:100nF (also marked as 104)

C5:.....10μF !

Semiconductors:

D1, D2:.....1N4007 or similar !

B1:rectifier

U1:.....LM338 !

LED1:.....LED diode

Others:

CON1, CON2:....terminal block connection
heatsink + fixing elements

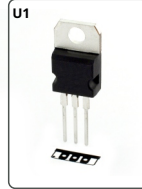
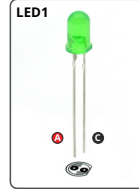
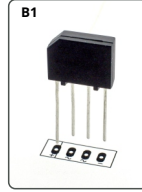
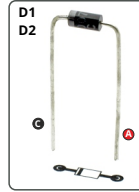
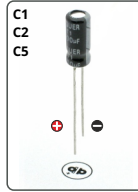


While assembling the components marked with an exclamation mark attention should be paid to their polarity. Symbols of the components on the PCB as well as photos of assembled sets may come in useful. To access high-resolution images, download the PDF file.

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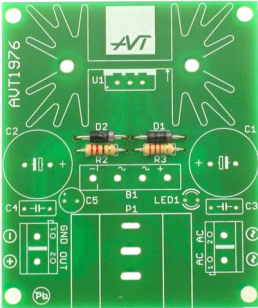


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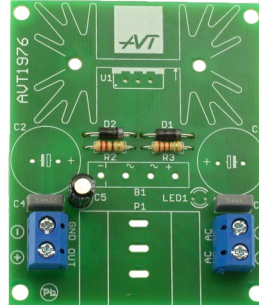


Assembly in 4 steps

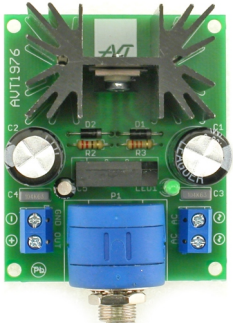
1 Solder resistors R2, R3 and diodes D1, D2



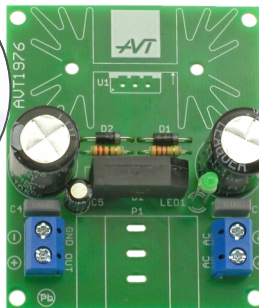
2 Solder capacitors C3, C4, terminal block connectors and capacitor C5



4 Solder potentiometer and voltage stabilizer with heatsink



3 Solder bridge, capacitors C1, C2 and LED1



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Assembly and connection of the device not in accordance with the instructions, unauthorized modification of components and any structural modifications may cause damage to the device and endanger the person using it. In this case, the manufacturer and its authorized representatives shall not be liable for any damages arising directly or indirectly from the use or malfunction of the product.