Power Supply Module

Overview

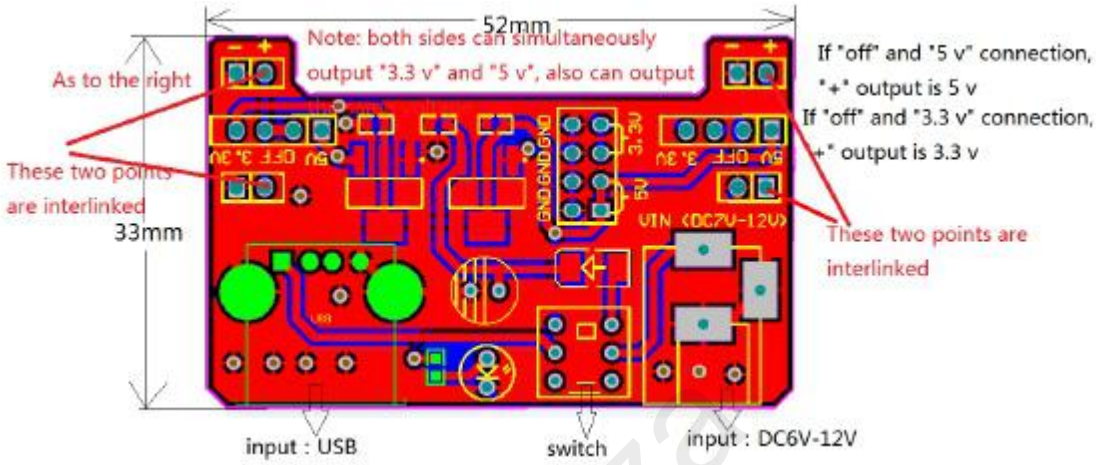
There is a green/red LED to indicate the presence of power, and an ON / OFF latching switch to control the power to the board. On this particular model and version, the center pin of the barrel socket is positive; however, please double check with the manufacturer’ s instructions, in case they have made any changes. You have to push the switch IN to use this device.

The operating instructions state that the input voltage through the barrel socket must be between 6 V and 12 V. Hence, if you wish to use it to its maximum capability you will need to remain in that range. This is a non-adjustable fixed power supply model, which is good enough for most applications. The manual states maximum output current to be 700 mA. However, it is probably better to use much lower voltages and current to be on the safe side in case you make a mistake on your breadboard circuit.

Specification

- Apply to MB102 breadboard.
- Locking ON / OFF Switch
- LED Power Indicator
- Input Voltage: 6 V to 12 V (DC)
- Output Voltage: 3.3 V / 5 V
- Maximum Output Current: 700 Ma
- Power Rails 0 V, 3.3 V, 5 V on Breadboard
- Two Groups of Header Pins
- Size: 5.3 cm × 3.5 cm

Jumper Pins and Headers



Jumper pins are utilised for selecting the voltage levels on each side of the breadboard power rails. You can choose between 5 V, OFF, and 3.3 V. There are two sets of jumper selectors for each side of the breadboard power rails; hence, you can have any combination of voltages on either rail. There are also header pins for tapping off voltages, using a cable or jumper wires.

Voltage Regulator AMS1117 Spec

The AMS1117 is a voltage regulator manufactured by Advanced Monolithic Systems. There are two regulators where one regulator establishes a 3.3 V rail, whilst another establishes the 5 V rail. These are a good make of components found in a SOT-223 package. Their documentation states that this series can provide a maximum output current of 1 A, and the absolute maximum input voltage rating is 15 V.

The documentation indicates that these regulators have built-in protection against short-circuit through power limiting circuitry. There is also thermal overload protection circuitry, which will shut-down the regulator should its junction temperature reach 165 °C.

These regulators also have internal diode protection and can handle transient surge currents

This is a high efficiency low dropout regulator, which can operate down to 1 V. It has a 1 V input-to-output differential and therefore useful for battery powered applications. Line regulation is 1.2 % and maximum load regulation 0.4 %.

The AMS1117 series is an excellent choice for creating adjustable power supplies as well. The package provides a 1.25 V reference voltage from the adjust pin, and with a pair of resistors in a voltage divider network the regulated output can be adjusted. The documentation is also very clear and comprehensive in its use.

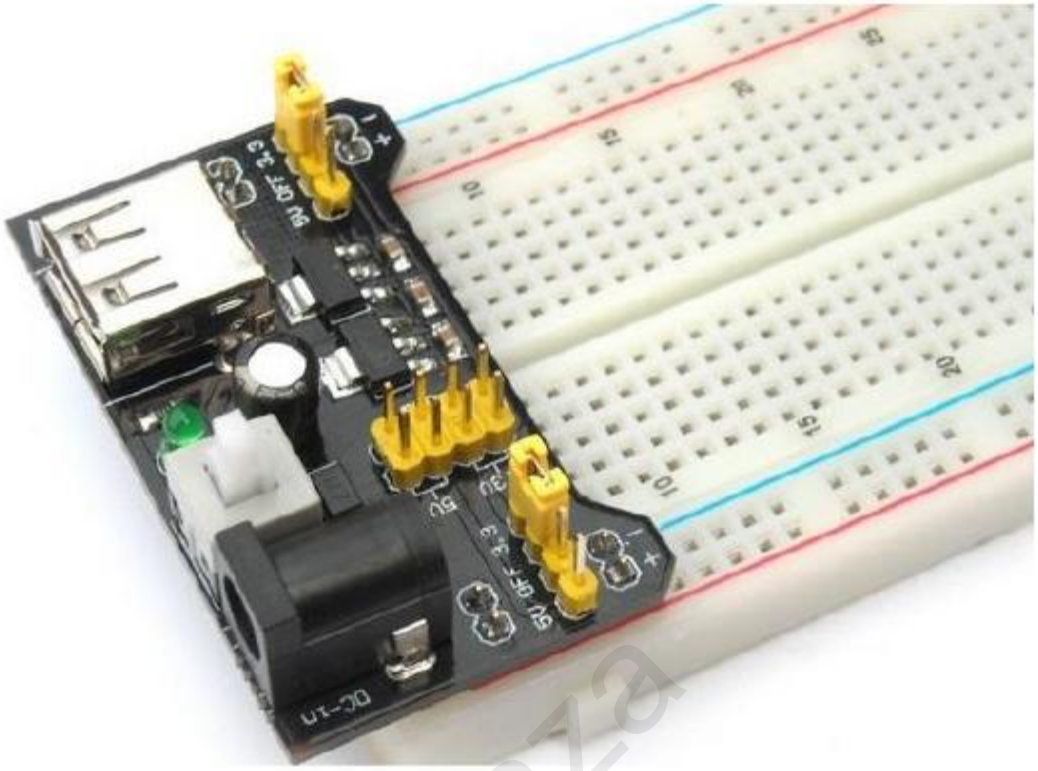
USB

Some modules provide a +5 V regulated output through a female USB socket to power other USB devices, which can be extremely useful. Some modules also allow the board to receive power through the same socket.

Power adater

We recommend that you use the specs of power adapter like below:
Input: 100-240V~50/60Hz
Output: 9V 1000mA
Interface: DC 5.5*2.1

How to use a Breadboard Power Supply



This is a plug-in power supply and the headers below the board simply plug-in to the breadboard.

Once plugged in, the voltage rails to both sides on the breadboard then provide power. You then use the yellow jumpers to select the voltage levels required. This is a dual output 3.3 V, 5 V regulated board and you can have either voltage on either rail on the breadboard, which is very useful.

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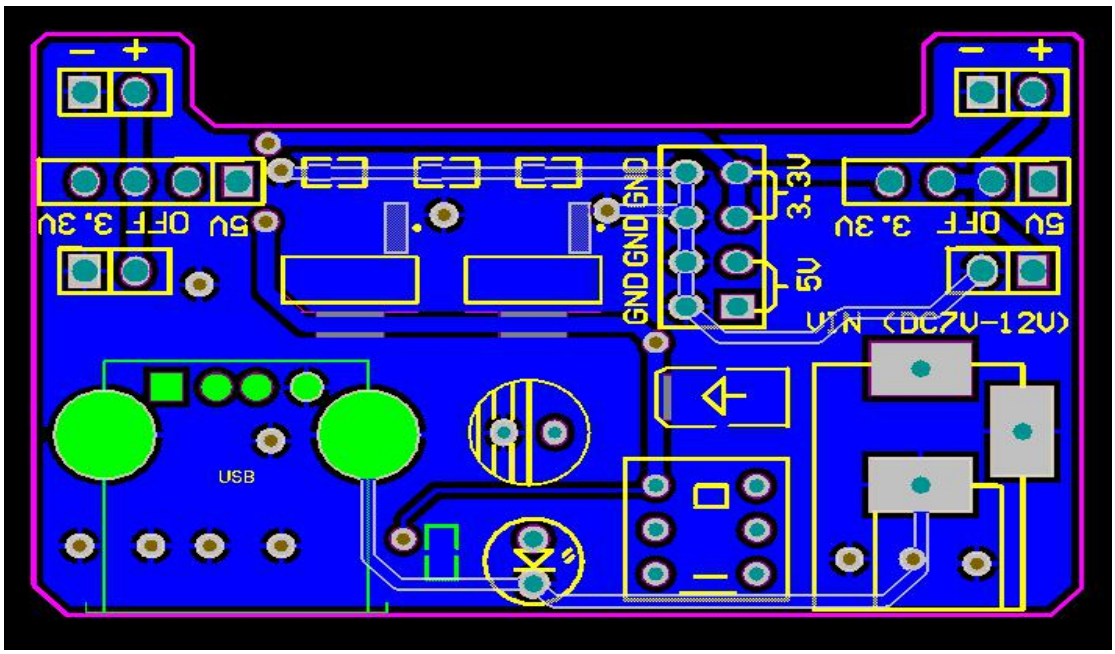
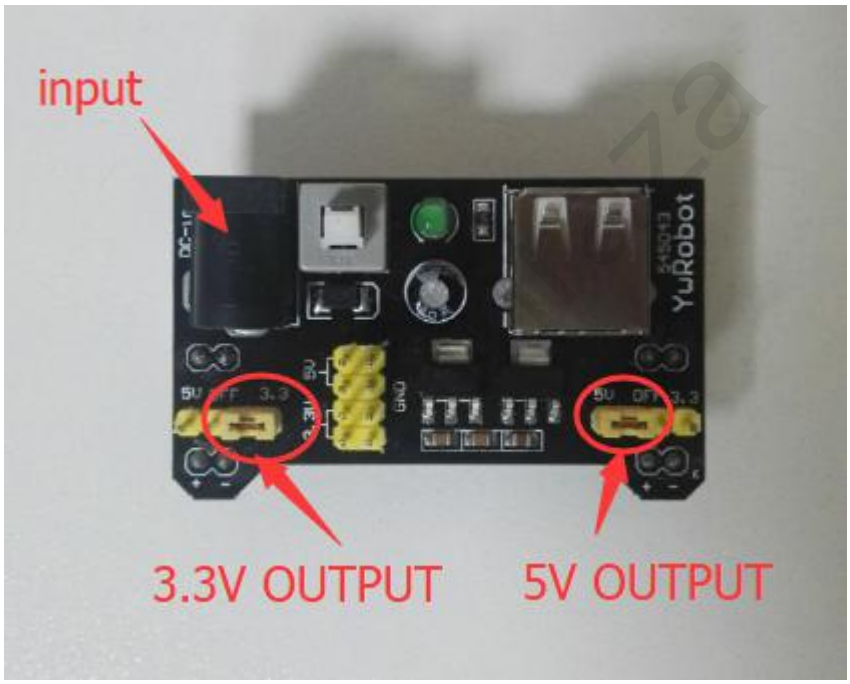
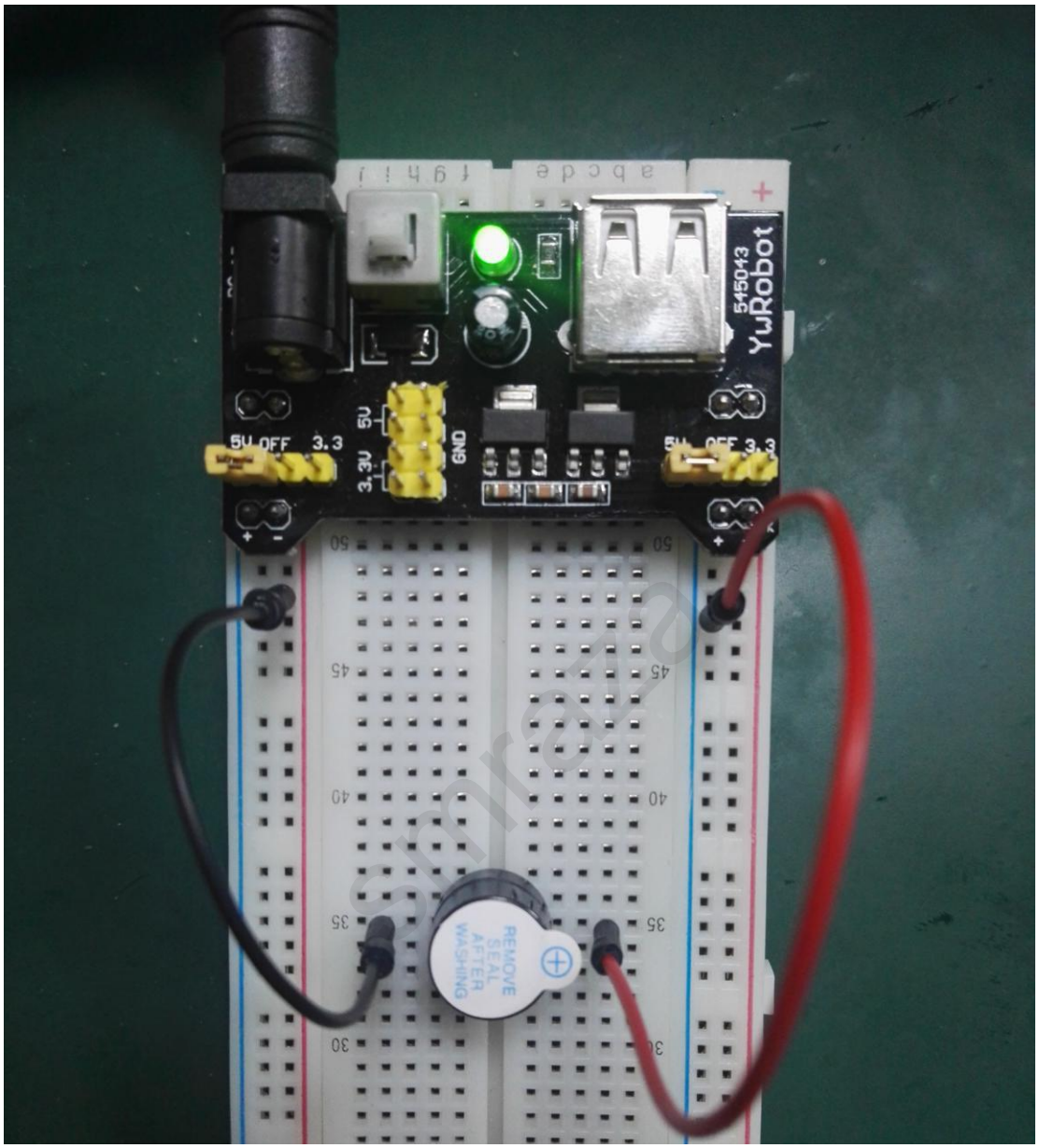

5V OFF 3.3V
GND GND GND
3.3V
5V
VIN (DC7V-12V)
USB

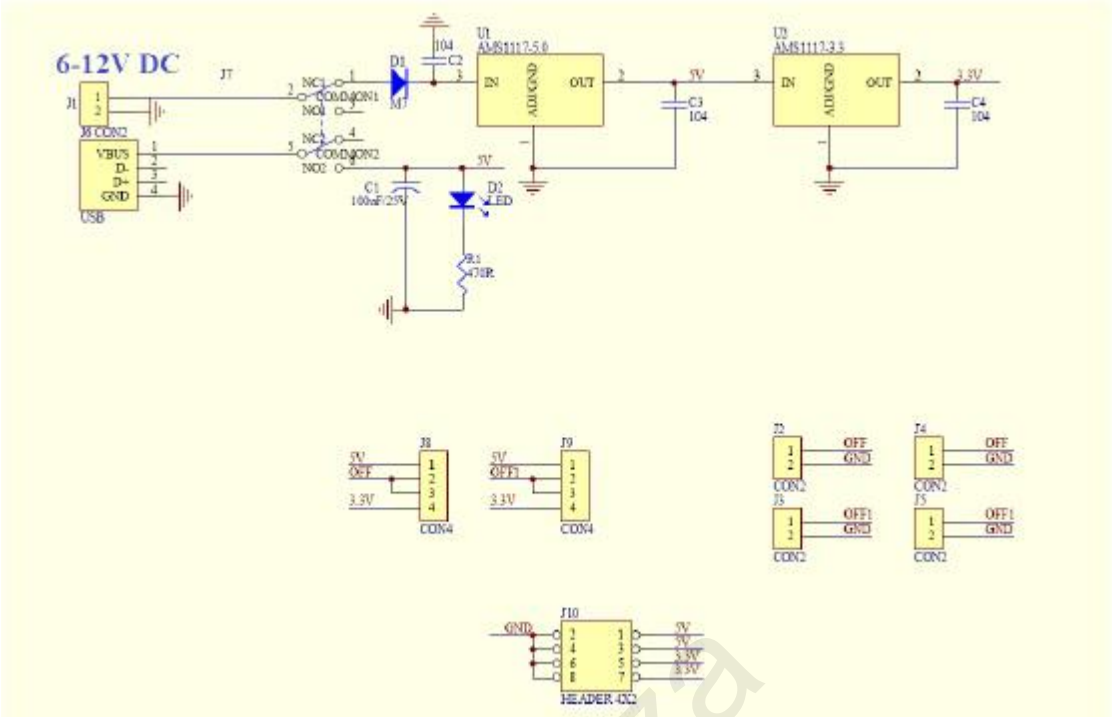

input
3.3V OUTPUT
5V OUTPUT
YwRobot

Its function is: + 7V ~ +12 V DC power supply into +5 V and +3.3 V DC power supply.



Note: The power supply module can be powered up by 9V/1A power adapter. Aftering powering for the power supply module, you can press the on/off button of it. If the led of power supply module turns on， the power supply module can work normally. Please noticed that the jumper cap on the power supply module can be selected the output voltage is 3.3V or 5V.

PCB



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* About Smraza:

* We are a leading manufacturer of electronic components for Arduino and Raspberry Pi.

* Official website: http://www.smraza.com/

* We have a professional engineering team dedicated to providing tutorials and support to help you get started.

* If you have any technical questions, please feel free to contact our support staff via email at support@smraza.com

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