

AUTODESK
Instructables

The Introduction of XL6009 Step-up Power Module DC-DC Converter

By [ICStation](#) in [CircuitsElectronics](#)



Introduction: The Introduction of XL6009 Step-up Power Module DC-DC Converter



www.ICStation.com



www.ICStation.com

[ICStation](#) team have developed this new product-[XL6009 Step-up Power Module](#) recently. We share the knowledge of this product in details and show you the actual testing results with the digital storage oscilloscope. You could find the information about **applicable occasion**, **feature**, **function**, **diagram**, and **testing results** through this article.

Applicable occasion:

1. experiment teaching
2. temporarily set up power supply in the outdoor
3. car(audio, electric fan)power supply
4. industrial power display

Feature:

1. [XL6009 Step-up Power Module](#) uses [XL6009](#) as main control chip to realize broader scope of application about boosting.
2. It shows the adjusted results intuitively with the digital tube.
3. There is no need to use the multimeter, which will be more convenient.
4. Equipped with the Schottky diode, you need not to be worried about wrong operation.
5. It adds ventilation hole on [PCB](#) to enhance the capacity of heat dissipation.

Tools you need to test:

1. [Copper Wire](#)
2. [Copper Cylinder](#)
3. [Nut](#)
4. [Pin Header](#)
5. [Screw Driver](#)
6. [Power Connector](#)
7. [Terminal Wire Connector](#)

Description:

Input voltage:4.2-32V

Output voltage:5-52V

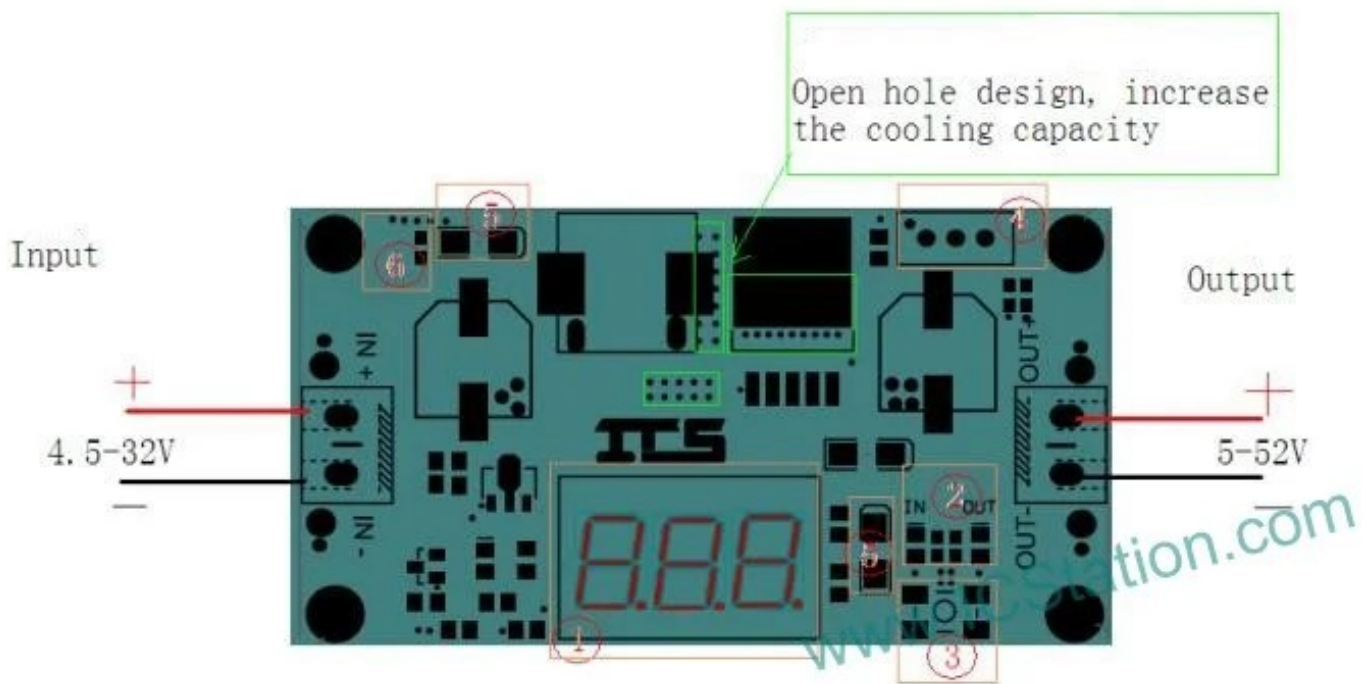
Maximum input current:4A

Transfer efficiency:94%

Output ripple:50mV

Operating temperature:-40°C~+85°C

Step 1: Function Introduction



①The voltage display

②Indicating input and output voltage area

③Function key:

Short press: input/output display options

Moderate press: Enter the fine-tuning state and increase or decrease the offset(the default is 0). when the voltage display inaccurate use , you can short press to regulate, long press or long press to restore.

Long press: the state of low power consumption, the digital tube and the lights are out, the normal work of the module. Click the button again to restore. Normal display

④Adjust output voltage :

Clockwise----- increasing voltage

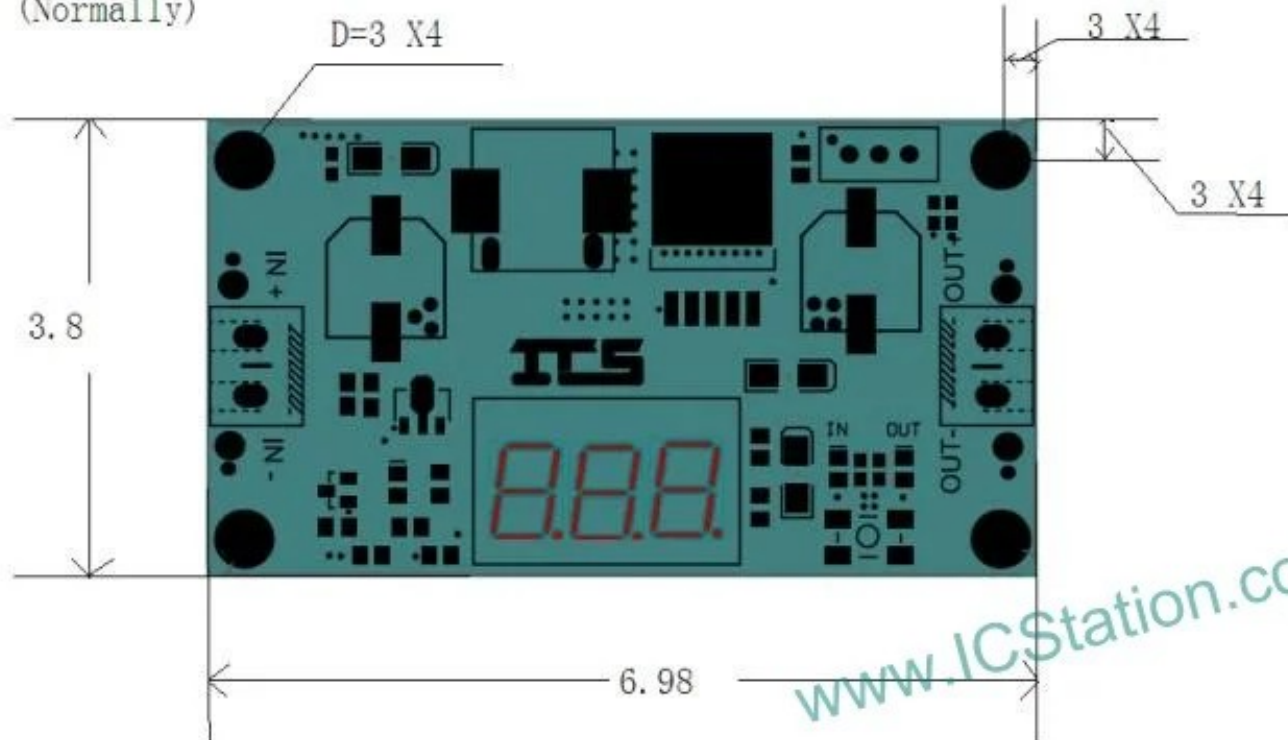
Counterclockwise----reduce the voltage

⑤schottky diode provides protection of reverse connection.

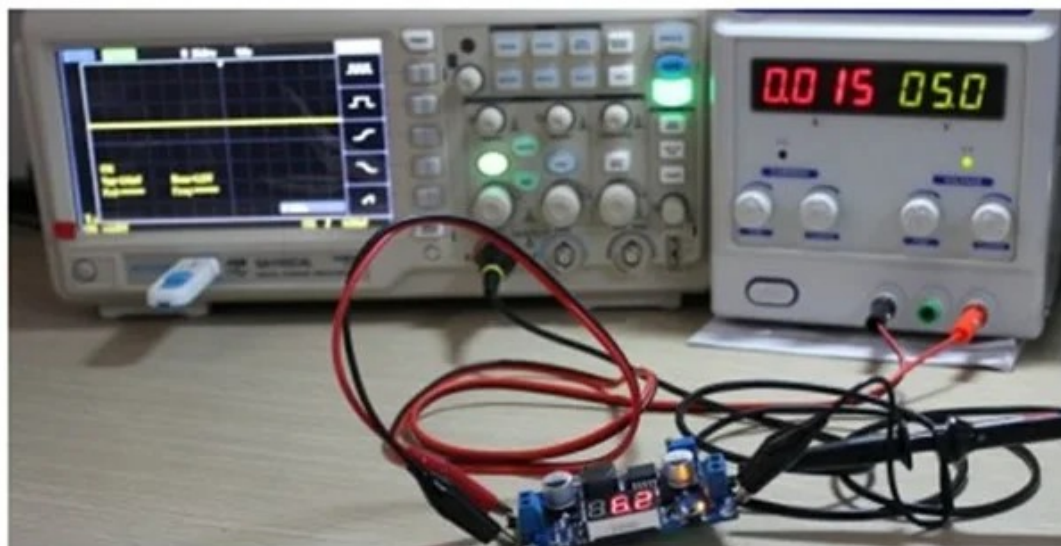
⑥High frequency capacitance to eliminate electric spark

Step 2: Diagram

Unit: mm
(Normally)



Step 3: Testing Result: Input Voltage 5V



Test condition:

Input voltage:5V

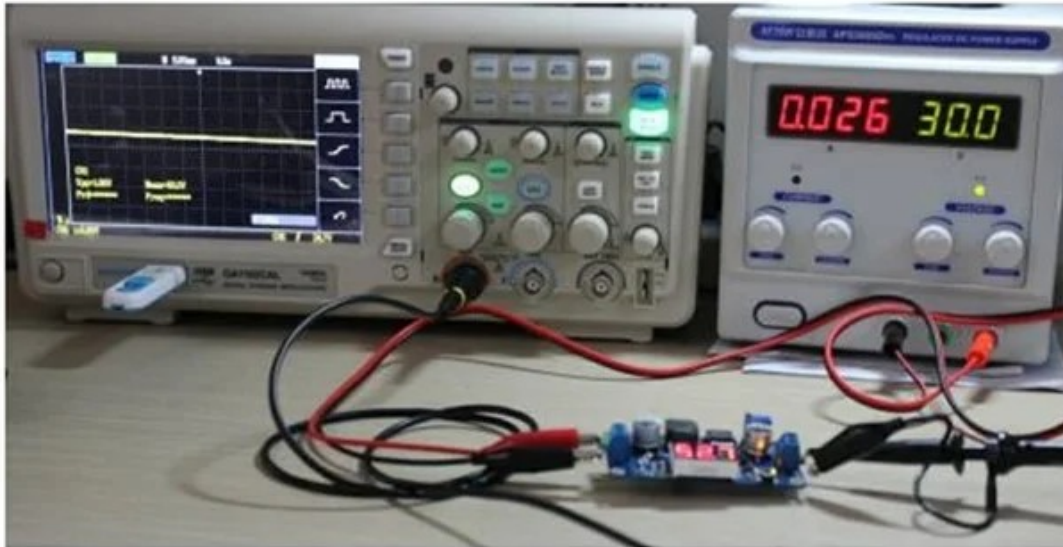
Output voltage:6.2V

The actual testing results:

Output voltage:6.21V

Output ripple:78mv(higher than the description, caused by the power supply by the preliminary analysis)

Step 4: Testing Result:Input Voltage 30V



Test condition:
Input voltage:30V
Output voltage:52.7V

The actual testing results:
Output voltage:52.3V
Output ripple: 1.76V(the value of voltage is unstable caused by the low output capacitance and low input current)

Note: When the voltage is much higher, the corresponding current will be higher (at least 3A). Otherwise the power supply will mistaken for short circuit and display abnormally.