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> [eletechsup DD39AJPA- 20W DC-DC Boost-Buck Converter Module Instruction Manual](#)

**eletechsup DD39AJPA-**

# eletechsup DD39AJPA- 20W DC-DC Boost-Buck Converter Module Instruction Manual

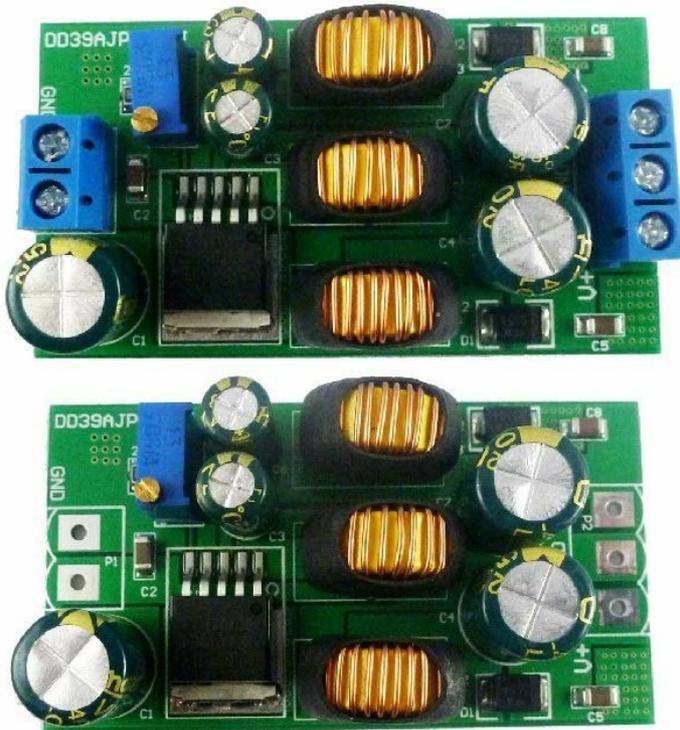
## 1. PRODUCT OVERVIEW

The eletechsup DD39AJPA- is a versatile 20W DC-DC Boost-Buck Converter Module designed to provide adjustable positive and negative dual output voltages from a single positive input. It features high efficiency and built-in protection functions, making it suitable for various electronic applications.

# DC-DC Converter

## Boost-Buck Positive & Negative Module

Input DC 3.6-30V,  
Adjustable Output :  $\pm 3.3V$



$\pm 5V$   
 $\pm 6V$   
 $\pm 9V$   
 $\pm 10V$   
 $\pm 12V$   
 $\pm 15V$   
 $\pm 18V$   
 $\pm 24V$

**Image 1:** DC-DC Boost-Buck Converter Module with adjustable output ranges. This image highlights the various adjustable positive and negative output voltages from  $\pm 3.3V$  to  $\pm 24V$ .

## 2. SPECIFICATIONS

Feature	Description
Input Voltage	3.6V to 30V DC
Output Voltage	$\pm 3V$ to $\pm 30V$ DC (Adjustable)
Maximum Output Power	20W
Conversion Efficiency	69% - 88%
Quiescent Current	3mA
Working Frequency	180KHz

Feature	Description
Operating Temperature	-40°C to +85°C
Dimensions	60 x 34 x 15mm
Weight	33g (with terminal), 29g (no terminal)
Built-in Features	Frequency Compensation, Soft-Start Function, Thermal Shutdown Function, Current Limit Function

**Size : 60 x 34 x 15mm**

**Weight : 33g**



**Image 2:** Module Dimensions and Weight. This image displays the physical size (60 x 34 x 15mm) and weight (33g with terminal) of the converter module.



Image 3: Top view of the eletechsup DD39AJPA- module with terminals, showing component layout.



**Image 4:** Side view of the eletechsup DD39AJPA- module with terminals, highlighting the height and component arrangement.

### 3. SETUP AND WIRING

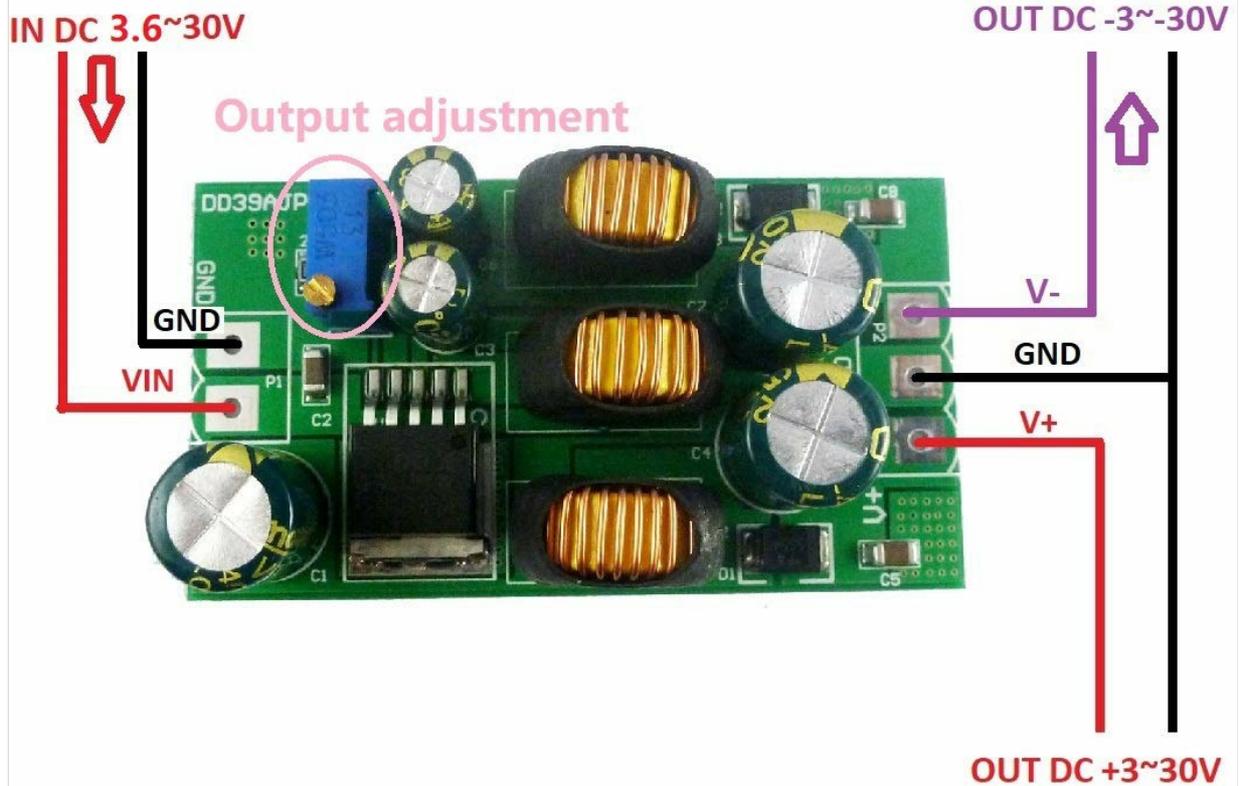
#### 3.1. Application 1: Positive and Negative Dual Output

This configuration provides both positive (V+) and negative (V-) output voltages from a single positive input. It is crucial that the negative voltage (V-) is not used alone. When using V-, a load must also be connected to the positive voltage (V+) terminal.

# Application 1

**Input positive voltage, output positive and negative voltage**

**Note: Positive and Negative voltages should be used at the same time. Negative voltage cannot be used separately.**



**Image 5:** Application 1: Input positive voltage, output positive and negative voltage. This diagram illustrates the wiring for a dual positive and negative output configuration. Note that negative voltage cannot be used separately.

## 3.2. Application 2: Positive Output Only

This configuration provides only a positive (V+) output voltage from a single positive input. The V- terminal is not utilized in this setup.

# Application 2

Input positive voltage, output Positive voltage

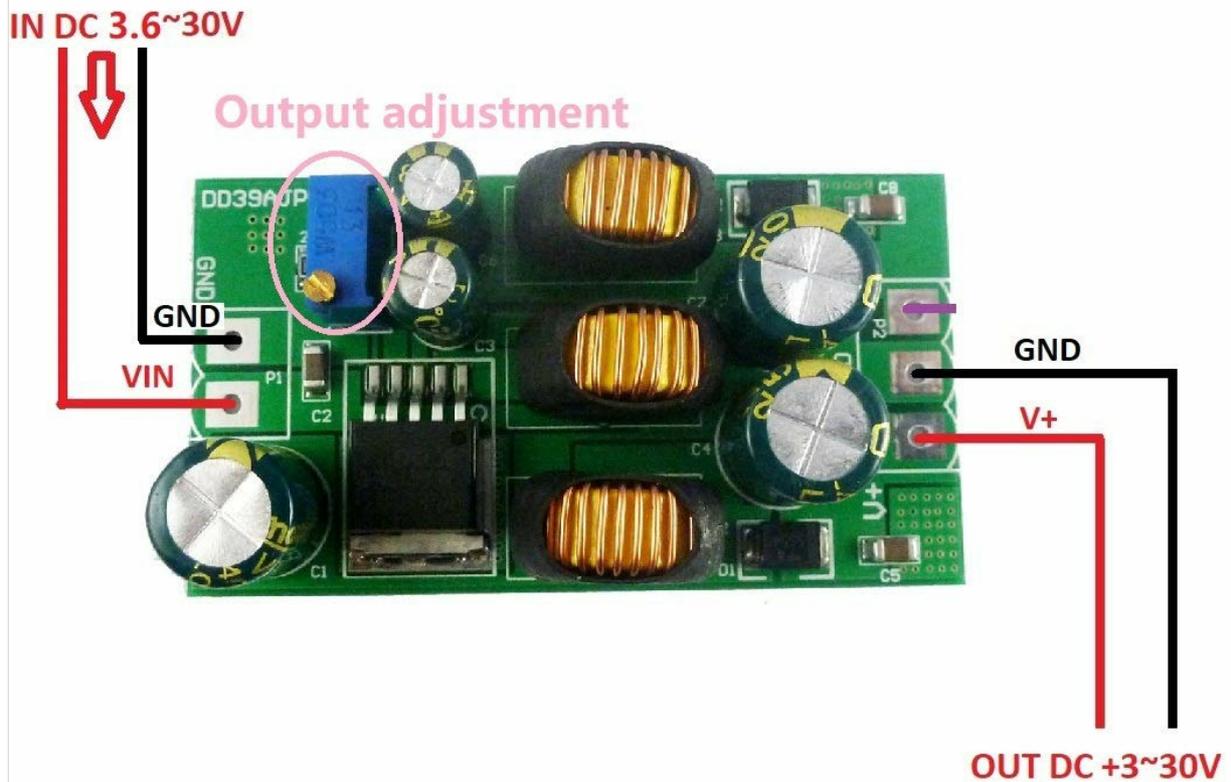


Image 6: Application 2: Input positive voltage, output positive voltage. This diagram shows the wiring for a single positive output configuration.

## 3.3. Output Voltage Adjustment

The output voltage (both positive and negative) can be adjusted using the onboard potentiometer. Carefully turn the potentiometer with a small screwdriver to set the desired output voltage within the specified range.

## 4. OPERATING GUIDELINES

- **Stable Voltage Output:** For more stable voltage output, it is recommended that the output current is greater than 15mA.
- **Startup Current:** The startup current of the module is typically 2.5-3 times the operating current.
- **Reducing Startup Current:** Increasing the capacitance by adding a 1UF-10UF MLCC capacitor can help reduce the startup current. Refer to the image below for placement.

- 1 The startup current of the module is 2.5-3 times the operating current.
- 2 Increasing the 1UF-10UF MLCC capacitor reduces the startup current(As shown below)

Soldering 0805 1UF-10UF MLCC capacitor as below

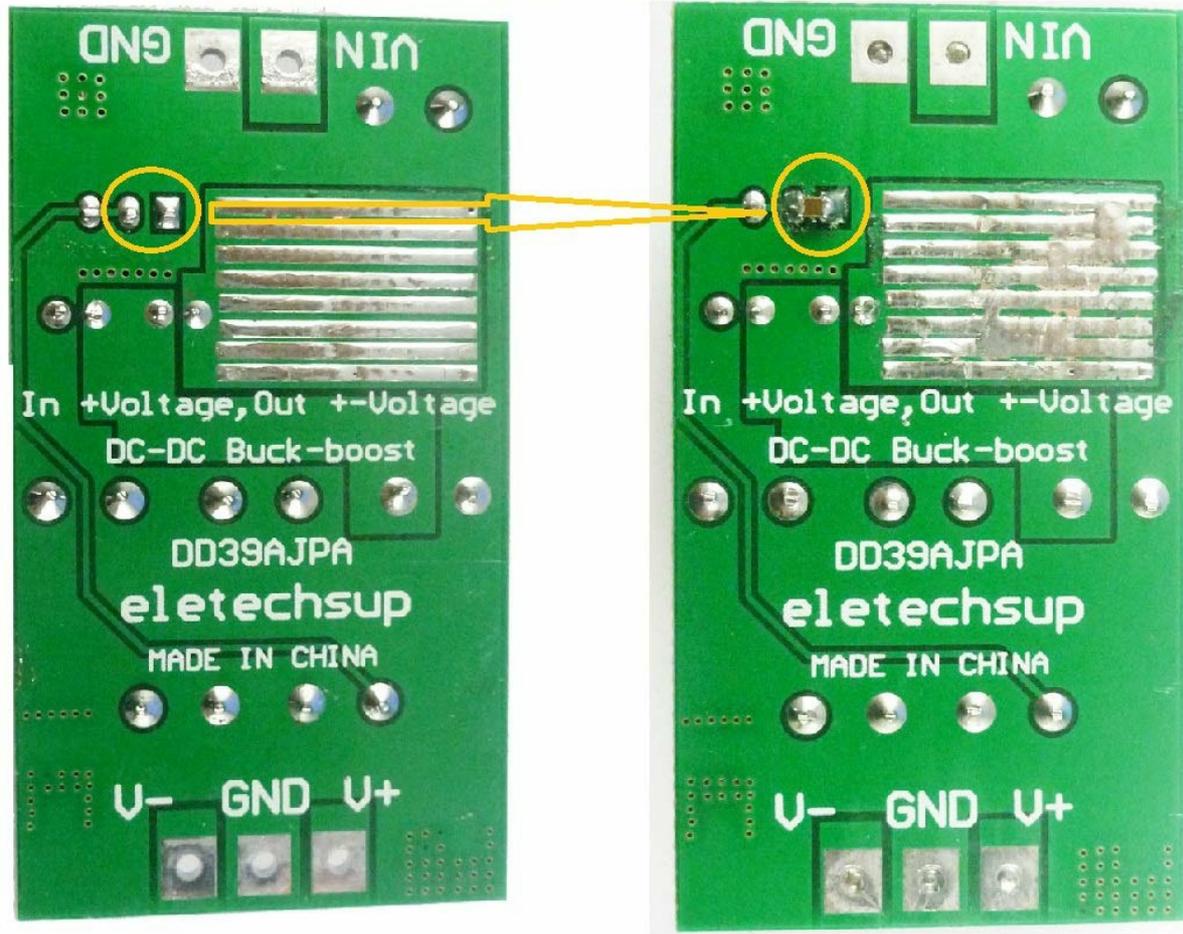


Image 7: Illustration of soldering a 1UF-10UF MLCC capacitor to reduce startup current. The image shows the top and bottom views of the PCB with the recommended capacitor placement.

## 5. IMPORTANT NOTES AND WARNINGS

- The input voltage must not exceed the maximum input range of 30V.
- The output power should not exceed the maximum load of 20W for extended periods.
- The input power must always be greater than the output power, accounting for the module's internal power consumption.
- The negative voltage (V-) cannot be used independently. If a negative voltage is required, a corresponding load must also be connected to the positive voltage (V+) terminal.

## 6. TROUBLESHOOTING

### 6.1. Output Voltage is Less Than Nominal

**Issue:** The measured output voltage is lower than the expected or set nominal voltage.

**Solution:** This often indicates that the input power supply is insufficient. Use a multimeter to check the input

voltage; it may be too low under load. Ensure your input power source can provide adequate current and voltage for the desired output.

## 6.2. No Negative Voltage Output or Output Too Low

**Issue:** The negative voltage (V-) is not present or is significantly lower than expected.

**Solution:** The negative voltage output cannot be used alone. When utilizing the negative voltage, a load must also be connected to the positive voltage (V+) terminal. Ensure both positive and negative outputs have appropriate loads connected.

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## 7. APPLICATIONS

This DC-DC Boost-Buck Converter Module is suitable for a wide range of applications, including:

- ADC/DAC/Operational Amplifier power supplies
  - RS232, RS485, RS422 Bus systems
  - Audio equipment and low-power audio power supplies
  - Car audio amplifier dual power boards
  - LCD power supplies
  - Instrumentation equipment and multimeters
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## 8. MAINTENANCE

The eletechsup DD39AJPA- module is designed for reliable operation and typically requires no specific user maintenance. Ensure proper ventilation and keep the module free from dust and moisture to prolong its lifespan.

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