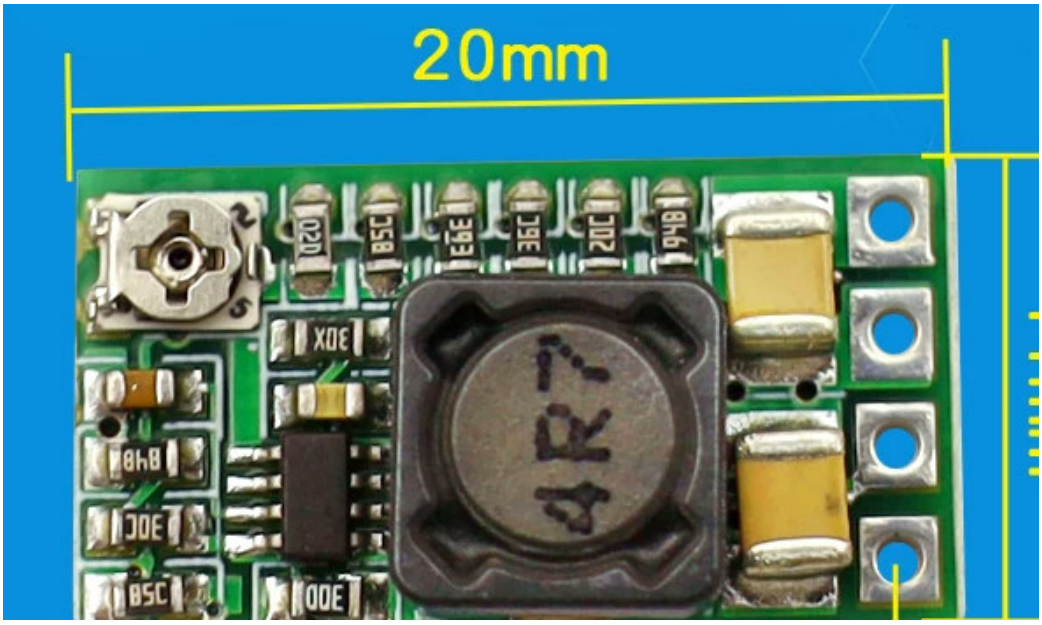
High-Efficiency 97.5% Buck Module

ADJUSTABLE / FIXED-OUTPUT DC-DC STEP-DOWN CONVERTER



Product Description

A compact non-isolated step-down converter module with an integrated adjustable output and selectable fixed-output configurations. The detail description identifies a 4.5-24 V DC input range, a 0.8-17 V adjustable output range and a stated board efficiency of 97.5%.

Important: The detail section does not state a continuous-current rating for this exact 97.5% module. Determine allowable load current by testing voltage regulation and temperature in the final installation.

Electrical Specifications

Parameter	Specification	Conditions and notes
Converter type	Non-isolated DC-DC buck	Input and output share a common ground
Input voltage	4.5-24 V DC	Operate within the stated range
Adjustable output	0.8-17 V DC	Set before connecting the final load
Fixed-output options	1.8 V, 2.5 V, 3.3 V, 5 V, 9 V, 12 V	Configured using the selection points on the rear of the board
Board efficiency	97.5% stated	Actual efficiency depends on operating point

Mechanical Dimensions

Parameter	Specification	Conditions and notes
Board length	20 mm	Overall PCB length
Board width	11 mm	Overall PCB width
Connection-hole diameter	1 mm	Four plated connection holes

Connections

Parameter	Specification	Conditions and notes
VIN+	Positive input	Connect to source positive
VIN-	Input return	Connect to source negative / ground
VOUT+	Positive regulated output	Connect to load positive
VOUT-	Output return	Connect to load negative / ground

Installation and Commissioning

1. Inspect the board for damage, loose parts or solder bridges.

2. With power disconnected, connect short, adequately sized leads and verify polarity.

3. For adjustable versions, measure and set the output voltage before connecting the load.

4. Apply power without the final load and confirm the output voltage with a multimeter.

5. Connect the load, recheck voltage under load and monitor temperature during an extended test.

6. Add cooling, fusing, surge protection and filtering as required by the source, load and enclosure.

Operating Guidance

• Do not reverse input polarity or short the output.

• Keep power wiring short to reduce voltage drop and noise.

• Do not exceed the listed input range, output current or temperature limits.

• The module is an open-frame component and must be protected from moisture, conductive debris and accidental contact.

• Maximum efficiency and peak-current figures are operating-point dependent and are not unconditional continuous ratings.

Troubleshooting

Parameter	Specification	Conditions and notes
No output	Missing input, reversed polarity, open connection or disabled EN	Remove power; verify source, polarity, wiring and enable state
Low output	Input sag, overload or excessive cable resistance	Measure input under load; reduce load and improve wiring
Overheating	Excess current, poor airflow or high ambient temperature	Disconnect power; reduce load and improve cooling
Noise or resets	Long wiring, grounding problems or transient load	Shorten wiring and add suitable local filtering

Revision Note

This document is based only on the technical information and product imagery present in the page detail-description section. Board appearance and component markings may vary by production revision. Verify the received hardware before production, safety-critical or high-reliability use.