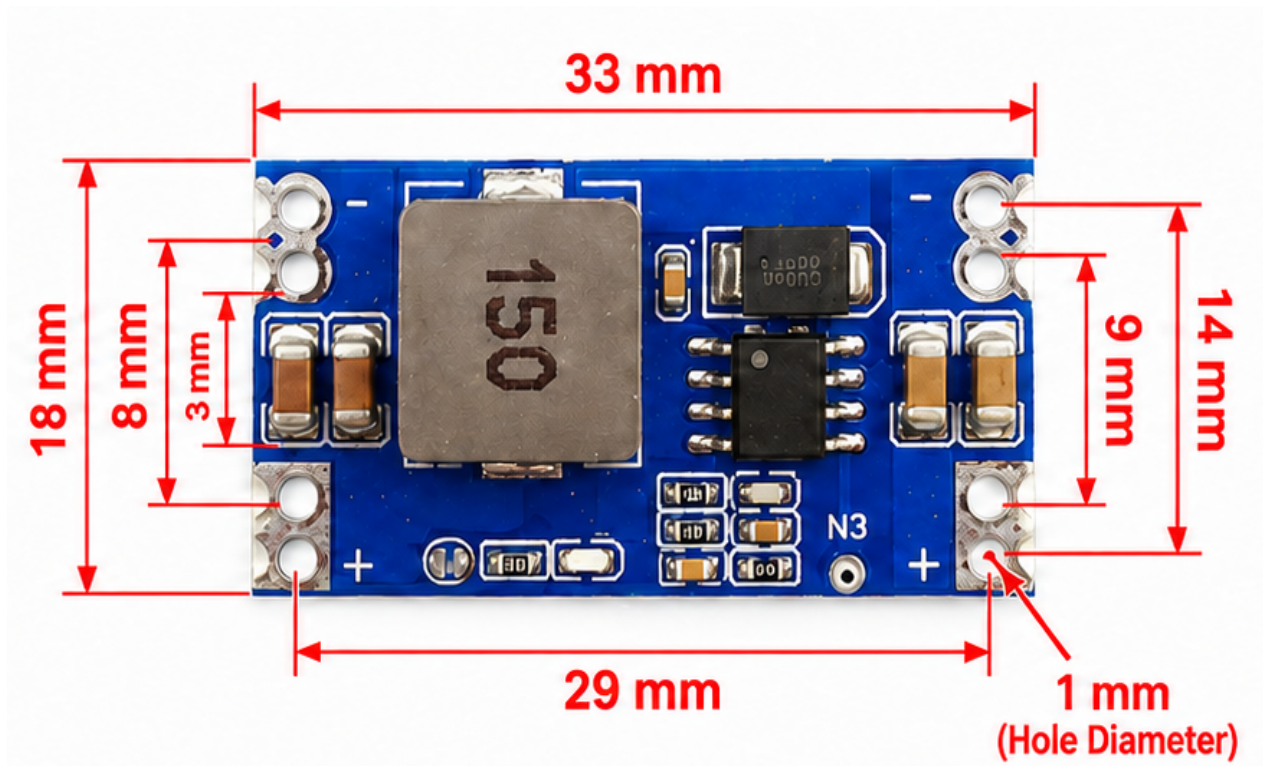


MINI560 PRO 12 V Buck Converter

PRODUCT SPECIFICATION AND USER GUIDE



Product Description

The MINI560 PRO is a compact synchronous, non-isolated DC-DC step-down module. This version provides a fixed 12 V output and uses the same PCB construction and mechanical envelope as the other MINI560 PRO fixed-output versions.

Thermal note: The output-current rating is below 5 A. Additional cooling is required for continuous current above 4 A. Verify temperature under the actual input voltage, load and enclosure conditions.

Electrical Specifications

Parameter	Specification	Source status / notes
Product family	MINI560 PRO	Fixed-output synchronous buck module
Converter function	Non-isolated DC-DC buck	Input and output grounds are common
Input voltage	5-32 VDC	Maintain at least 1.7 V input-output differential
Output voltage	12 V fixed	Version-specific output
Output current	<5 A	Additional cooling required above 4 A continuous
Maximum efficiency	99%	Operating-point dependent
Switching frequency	500 kHz	Nominal
Operating temperature	-40 to +80 deg C	Thermal derating may be required
Rectification	Synchronous	As stated in the product image

Mechanical Dimensions

Parameter	Specification	Source status / notes
Overall length	33 mm	Maximum end-to-end dimension shown
PCB / mounting length	29 mm	Horizontal dimension shown on drawing
Overall width	18 mm	Maximum width shown
Left-side vertical callouts	8 mm and 3 mm	Positions shown in the mechanical image
Right-side vertical callouts	14 mm and 9 mm	Positions shown in the mechanical image
Mounting-hole diameter	1 mm	Connection / mounting hole diameter

Connections

Parameter	Specification	Source status / notes
VIN+	Positive DC input	Right-side lower positive terminal
VIN-	Input return / ground	Right-side upper negative terminal
VOUT+	Positive regulated output	Left-side lower positive terminal; output is 12 V
VOUT-	Output return / ground	Left-side upper negative terminal
EN	Enable control	Enable pad identified on the board

Commissioning Procedure

1. Inspect the received module and record its PCB dimensions, component markings and terminal labels.
2. With power disconnected, identify VIN+, VIN-, VOUT+ and VOUT- from the actual board markings.
3. Use a current-limited bench supply. Begin at a conservative input voltage appropriate for step-down operation.
4. Apply power without the final load and verify the output is 12 V.
5. Increase load gradually while monitoring output regulation, input current and component temperature.
6. Establish production limits only after the missing manufacturer ratings have been obtained or validated by controlled testing.

Safety and Release Status

Do not reverse polarity or short the output. This open-frame module requires protection from moisture, conductive debris and accidental contact. Confirm the fixed output voltage before connecting the final load and verify thermal performance at the intended continuous current.

Source Note

The product appearance, electrical values and mechanical dimensions are taken from the supplied MINI560 PRO product image. The same PCB image and mechanical dimensions apply to the four fixed-output versions; the output voltage is version-specific.