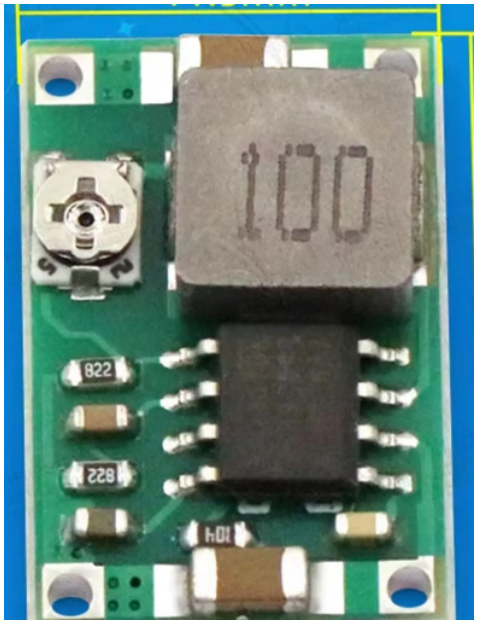
Mini-360 Adjustable Buck Converter

3 A PEAK SYNCHRONOUS DC-DC STEP-DOWN MODULE



Product Description

The Mini-360 is a miniature synchronous, non-isolated DC-DC buck converter for compact embedded and model-electronics power systems. Its output is adjusted with the onboard potentiometer.

Important: The detail image notes reverse-connection protection and automatic shutdown protection at 85 deg C. The 3 A value is a peak rating; design continuous operation around the stated 1.8 A long-term limit and verify temperature.

Electrical Specifications

Parameter	Specification	Conditions and notes
Input voltage	4.75-23 V DC	Step-down operation only
Output voltage	1.0-17 V adjustable	Set before connecting the load
Output current	3 A peak; 1.8 A long-term	Thermal conditions affect continuous capability
Conversion efficiency	Up to 96%	Depends on input, output and load
Switching frequency	340 kHz	Nominal
Output ripple	30 mV at no load	As stated in the detail table
Load regulation	+/-0.5%	As stated
Voltage regulation	+/-2.5%	As stated
Operating temperature	-4 to +85 deg C	Observe thermal derating

Mechanical Dimensions

Parameter	Specification	Conditions and notes
Board length	17.5 mm	Overall PCB length
Board width	11.5 mm	Overall PCB width

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.