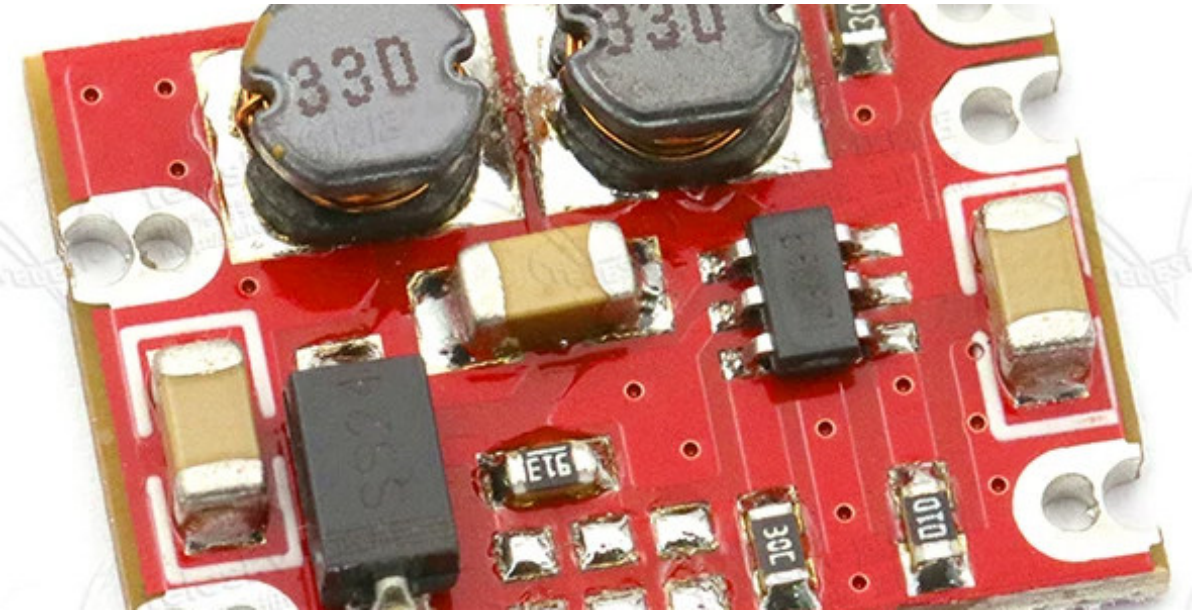
S09 3.3 V Automatic Buck-Boost Converter

600 mA FIXED-OUTPUT DC-DC REGULATOR WITH ENABLE



Product Description

The S09 is a non-isolated automatic buck-boost module that maintains a fixed 3.3 V output from a 3-15 V DC source. An enable terminal supports external on/off control.

Important: For continuous operation, connect EN to VIN+ or drive EN high. The detail drawing states that approximately 2-15 V at EN turns the module on; floating or low level turns it off.

Electrical Specifications

Parameter	Specification	Conditions and notes
Model	S09	Surface-mount or 2.54 mm pin-header installation
Input voltage	3-15 V DC	Maximum stated input is 15 V
Output voltage	3.3 V fixed	This datasheet covers the 3.3 V version
Maximum output current	600 mA	0.6 A maximum
Maximum efficiency	75%	Operating-point dependent
Output ripple	<50 mV	As stated in the detail table
Output accuracy	+/-0.1 V	As stated
Quiescent current	<200 uA	As stated in the detail description
Switching frequency	1.2 MHz	Fixed switching frequency
Operating temperature	-20 to +85 deg C	Natural cooling
Relative humidity	20-90%	Non-condensing installation recommended
PCB construction	2 layers, 1.2 mm thick	Reflow-soldered module

Mechanical Dimensions

Parameter	Specification	Conditions and notes
Board length	19 mm	Overall PCB length
Board width	14 mm	Overall PCB width
Board height	4 mm	Overall assembled height
Pin spacing along each side	8 mm	Center-to-center, shown in mechanical drawing
Header pitch	2.54 mm	Compatible plug-in option

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.