

Step-Up Boost Converters

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Electronics & Prototyping

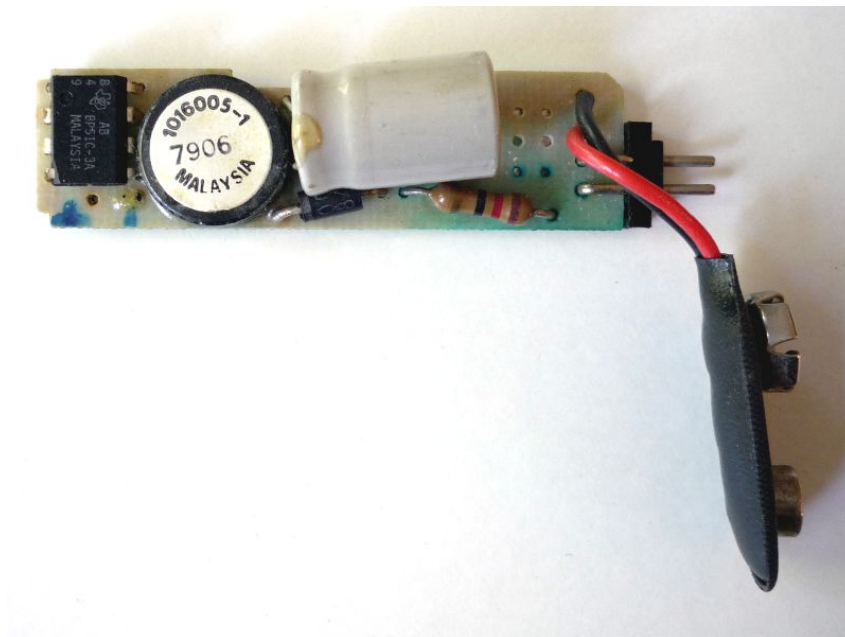


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A boost converter raises a low DC voltage to a higher output - such as 3.7 V from a LiPo up to 5 V for boards and 12 V for motors - efficiently powering circuits that need more voltage than the battery provides.

Key Features

- XL6009 and MT3608 modules common
- Inputs from 2-32 V
- Adjustable output to 35 V
- 1-4 A capacity
- Trimpot voltage adjustment

Typical Uses in the Workshop

- Power 5 V boards from single-cell batteries
- Drive 12 V motors from lower supplies
- Create adjustable rails in prototypes
- Maximise battery usefulness

Safe Operation

1. Set the output before connecting the load
2. Wire the input with correct polarity
3. Mount with airflow for the current
4. Verify the output with a meter
5. Load-test within the rated current

SAFETY NOTES

- A boost converter can spike - set the output carefully
- Never feed voltage back into the input
- Keep away from moisture
- Check the input current demand
- Add fuses at both ends

Maintenance & Consumables

- Check the trimpot and terminals
- Verify the output voltage regularly
- Keep the coils and board clean
- Replace overheated modules
- Store with input disconnected

Specification & Buying Notes

Match the module current to the load - boost converters AMPS matter most. Quality modules hold regulation; cheap ones sag and buzz under load.