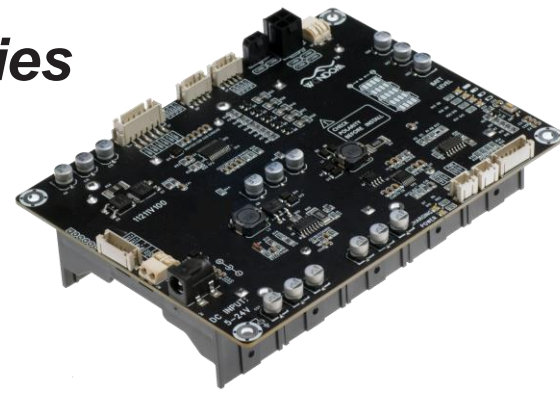


# Battery Charging and Protection Series

## 5S 26650 Lithium Battery Charging, Balance and Protection Board-BCPB4 (PS-BC12113)



### Overview:

As the new comer of BCPB (Battery Charging and Protection Board) series, BCPB4 inherits the high efficiency and high reliability of BCPB2, offering more battery holders and larger capacity. BCPB4 is designed for 5pieces 26650 Lithium Batteries in series and can be used as a power bank for Routers, Raspberry Pi, High power portable speakers and Mobile phones, which is widely used in Home DIY applications to save your precious time from the connection of electric wires. Supporting wide range of charging input voltage and hybrid charging sources is one of the highlights of BCPB4. Any 5-24V 2A adapters can be used to charge the batteries with BCPB4.

This board can only be used to charge Lithium-ion batteries. If you have requirements on charging other batteries, please contact us. Besides that, the balance and protection circuit constantly to monitor each cell's voltage, the current of charging or discharging, and the temperature of the environment to provide overcharge, over-discharge, output over-current, short circuit, charge over-current and over-temperature protections, etc.

### Distributors:



All Audio Amplifier boards are complied with ROHS and they are pre-tested with our power supply solution to comply with FCC and CE. We could provide FCC, CE and RoHs certifications for customers' convenience. The test reports will be provided upon requests by e-mails only for customers who apply for bulky purchasement of MOV USD\$10,000 or MOQ 500pcs.

Ready for:



### Contact Info

• Email:  
info@wondom.com



### Applications:

- Home Garden/Granary
- DIY Purpose (Optional)
  - Raspberry Pi
  - Arduino DIY

- Power Bank for Router/Drone/Laptop/iPad/Mobile Phone
- High Power Portable Speakers

### Key Features:

- 5-24V Wide Range Charging Voltage
- Hybrid Charging Sources
- Supporting Extension Board with Dual 5V 2A USB Discharge Ports
- Multi-discharging Ports
- Solar Charging Supported
- Large Capacity with 5 cells 26650 Batteries
- LED Indicators for Battery Status
- Balance Protection
- Short Circuit Protection
- Over-temperature Protection
- Over/Under Voltage Protection
- Output/Input Over-current Protection
- Over-charge and Over-discharge Protection
- Weight: 168g/0.37lbs (±10%)
- Size: 6.0 x 4.5 x 1.8 inches

### Notes:

1. Sure Electronics does not provide technical support for any behavior of connecting the battery charger and balance protection board with power supply out of the recommended range. Warranty will be lost due to this.
2. Turn off the apparatus if it is disused for long time.
3. For the 1<sup>st</sup> time to charge this new battery board/make the board active, it is normal to take much longer time to make the board fully charged .
4. If your board goes into protection status, please recharge the board with power adapter to make it active again.

### Electrical Specifications

Specifications typical @ +25°C, unless otherwise noted. Specifications subject to change without notice.

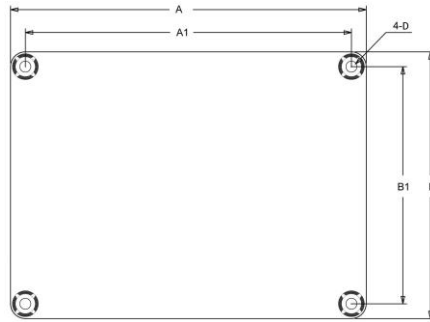
| Parameter(s)                     | Conditions      | Min. | Typ.  | Max. | Unit(s) |
|----------------------------------|-----------------|------|-------|------|---------|
| Supply Voltage                   | -               | 5    | 12    | 24   | VDC     |
| Maximum discharge current        | -               | -    | -     | 10   | A       |
| Typical charge current           | -               | 0.3  | 2     | 2.5  | A       |
| Overcharge detection voltage     | Per Single cell | -    | 4.235 | -    | V       |
| Overcharge release voltage       | Per Single cell | -    | 4.18  | -    | V       |
| Over-discharge detection voltage | Per Single cell | -    | 2.8   | -    | V       |
| Over-discharge release voltage   | Per Single cell | -    | 3.0   | -    | V       |
| Balance starting voltage         | Per Single cell | -    | 4.18  | -    | V       |
| Operating Temperature            | -               | -    | 20    | 50   | °C      |

## Electrical Specifications

Testing Results for Charging using our 26650 5500mAh batteries is attached for reference.

| Charging Conditions | 90% charged Time (Unit: h) |
|---------------------|----------------------------|
| 5V 2A               | 32                         |
| 12V 2A              | 6.5                        |
| 19V 2A              | 3.5                        |
| 24V 2A              | 3                          |

## Mechanical Dimensions



### Notes:

- All dimensions are typical in inches/mm
- Tolerance x.xx =  $\pm 0.02$  ( $\pm 0.50$ )
- Height: 1.8inch/45mm (Battery height: 1.02inch/26mm)

| Dimensions | A<br>(inch/mm) | A1<br>(inch/mm) | D<br>(inch/mm) |
|------------|----------------|-----------------|----------------|
|            | 6.00/152.40    | 5.60/142.24     | 0.15/3.8       |
| Dimensions | B<br>(inch/mm) | B1<br>(inch/mm) |                |
|            | 4.50/114.30    | 4.10/104.14     |                |

## Connections

### Charging:

- J14 DC 5V-24V Power Adapter  
Socket Jack 5.5mm/2.1mm
- J16 DC 5V-24V Power Supply  
WAGO-2060-2Pole-4mm Connector

| Pin | Definition |
|-----|------------|
| 1   | VCC        |
| 2   | GND        |

### LED Indicators (Position A) for Battery Level Status:

- Four LED indicators for battery level status.

Press SW1 for checking battery level

### LED Indicators (Position B) for Charging:

- J1 Charging Indicator connector
- J2 Power Indicator connector
- J7 External Battery Level Display and Control Switch Port
- SW1 Battery Level Display Switch  
ON OFF

| Status       | Charging Indicator | Power Indicator |
|--------------|--------------------|-----------------|
| Full Charged |                    |                 |
| Charging     |                    |                 |

### Notes:

- J3, J4, J5, J13, J17 and J18 are paralleled.
- Please be noted that PS-BC12113 is forbidden to be connected in paralleled or in series.
- J28 can be used to charge BCPB4 and can support extension board to deliver Dual 5V 2A USB discharge.

### Discharging:

- J5 WAGO-2060-2Pole-4mm Connector

| Pin | Definition |
|-----|------------|
| 1   | VBAT+      |
| 2   | VBAT-      |

- J3

JST compatible XH-2mm-6POS-Connector

| Pin | Definition |
|-----|------------|
| 1   | VBAT-      |
| 2   | VBAT-      |
| 3   | VBAT-      |
| 4   | VBAT+      |
| 5   | VBAT+      |
| 6   | VBAT+      |

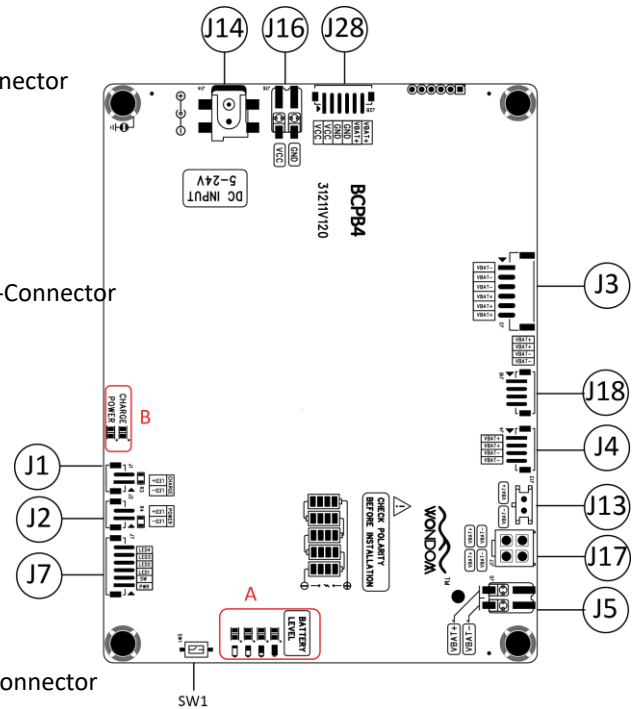
- J4, J18

JST compatible PH-2mm-4POS-Connector

| Pin | Definition |
|-----|------------|
| 1   | VBAT+      |
| 2   | VBAT+      |
| 3   | VBAT-      |
| 4   | VBAT-      |

- J17 Molex Mini-Fit

| Pin | Definition |
|-----|------------|
| 1   | VBAT-      |
| 2   | VBAT-      |
| 3   | VBAT+      |
| 4   | VBAT+      |



- J28

JST compatible PH-2mm-6POS-Connector

| Pin | Definition |
|-----|------------|
| 1   | VCC        |
| 2   | VCC        |
| 3   | GND        |
| 4   | GND        |
| 5   | VBAT+      |
| 6   | VBAT+      |

- J13 Molex Micro-Fit

| Pin | Definition |
|-----|------------|
| 1   | VBAT+      |
| 2   | VBAT-      |



**Sure Electronics**  
Make Your Audio Application Simple!

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