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CPR-EP030-ABCDE 4/10S

Protection Mudule Specification for 4 to 10S Lithium Battery of General Type

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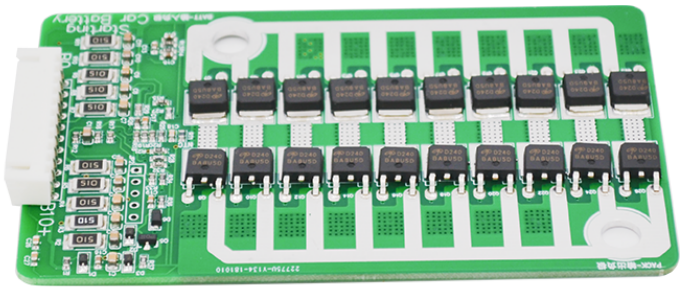
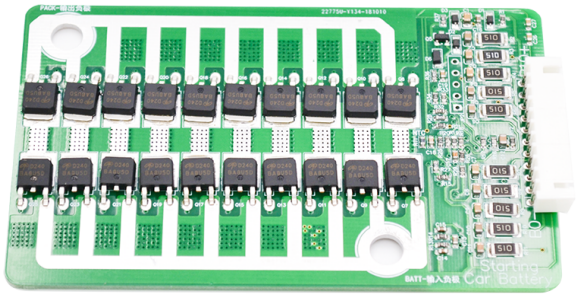
Picture Review

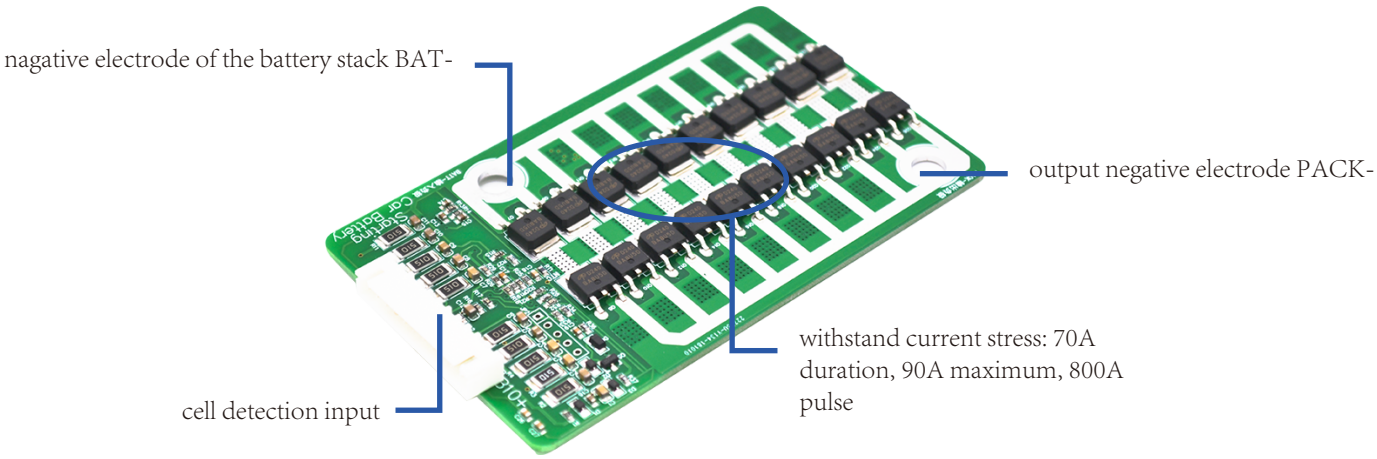




Function Review

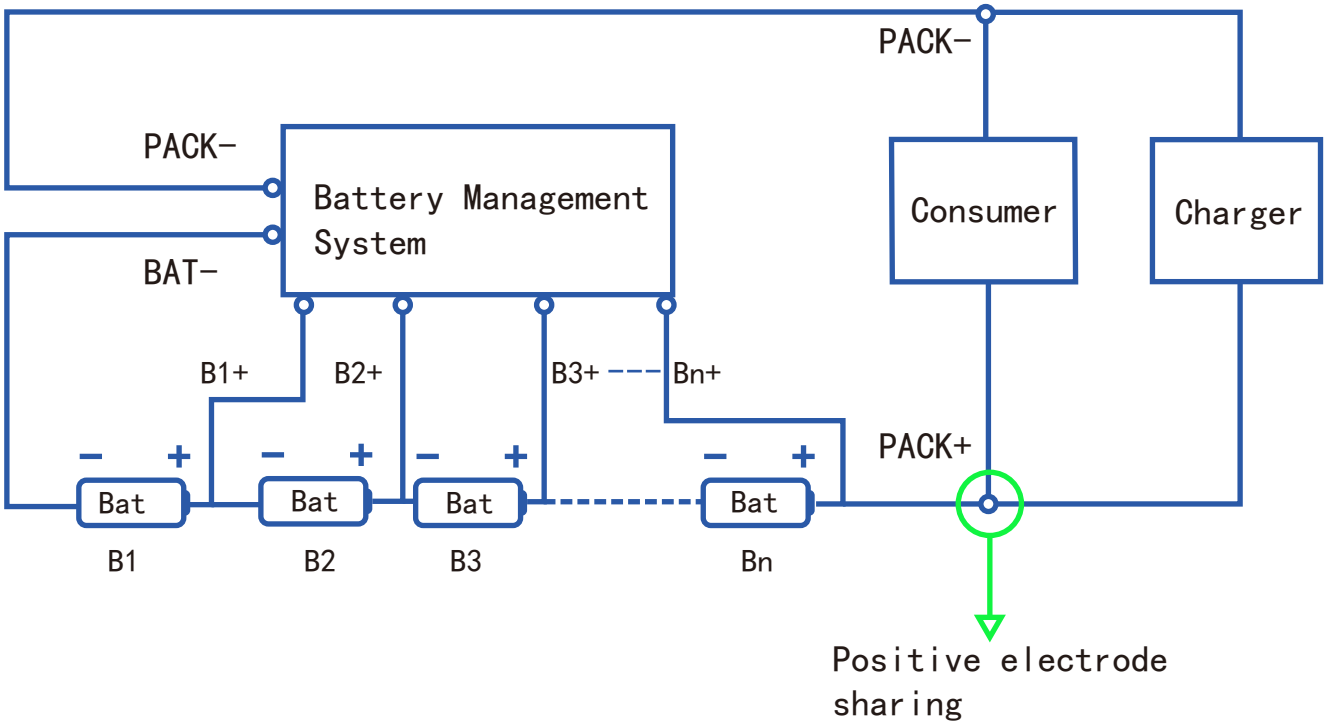
- 1.Configurable to 4,5,6,7,8,9, and 10 series battery protection.
- 2.Independent battery voltage monitoring ? internal 50mA automatic battery balance.
- 3.The power supply voltage range is 5.6 V to 50 V.
- 4.Normal mode: 50 mu A, typical value.
- 5.The low-voltage differential voltage stabilizer (LDO) is closed in shut-off mode: 3uA.
- 6.Battery protection and battery balancing devices for lithium ion and lithium polymer battery packs.
- 7.Monitor 4 to 10 series independent battery voltages and provide for driving N channel metal oxide semiconductor field effect transistors. (MOSFET) quick action output to interrupt power access.
- 8.The activation delay and recovery method for security conditions can be fully programmed in non-volatile memory.
- 9Use internal 50 mA battery circuit to realize automatic battery balance.
- 10.Robust balanced algorithm ensures optimal performance by maintaining all battery voltages in a balanced state.
- 11.Only in the charging process can the balance be configured to run continuously or be completely disabled.

Product Interface

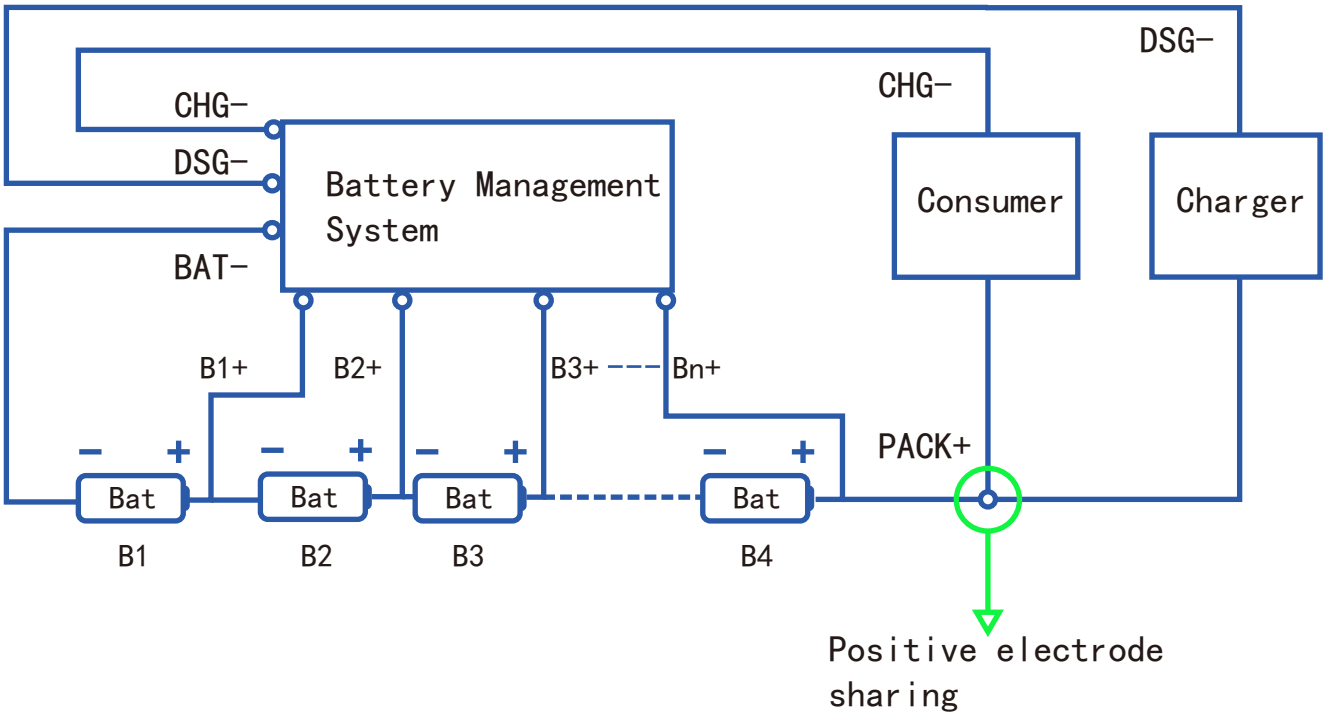


Product Wiring

Same-port Connection



- Split-port Connection



1. Parameters of charge, discharge, currrent and temperature

Number	Item	Value
1	Max charge current	Reference from parameters table 4 on page 6
2	Charging rated current/maximum working current	75A/90A
3	Normal charging over-charge protection voltage	Reference from parameters table 4 on page 6
4	Normal discharge over-discharge protection voltage	Reference from parameters table 4 on page 6
5	Nominal discharge current/maximumworking current	75A/90A
6	Over-current protection current/delay	1000A/100mS
7	Delay for short-circuit protection	<300uS
8	over-temperature protection temperature	65℃
9	Temprature range	-20℃——65℃

2. Parameters of

Number	Item	Value
1	Balance start voltage	Reference from parameters table 4 on page 6
2	Balance current	50mA (power consumer state)

3. Parameters of board

Number	Item	Value
1	Static power consumption of board	≤100uA(power consumption in dormancy state)
2	Activated power consumption of board	≤300uA(power consumption in activated state)
3	Resistance of protection board	≤10mΩ(discharge)/≤15mΩ(charge)
4	Size of the protection board	length*width*thickness 100*60*5mm

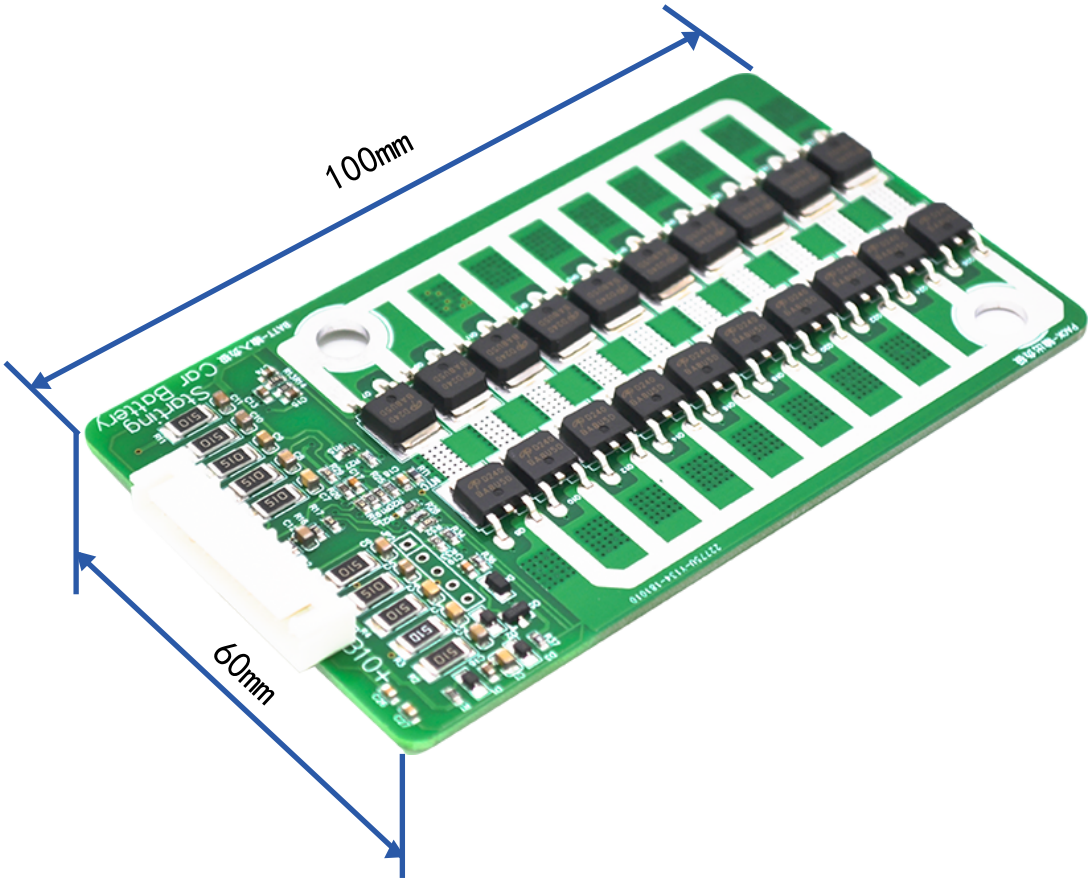
4. Parameters about battery of different chemical type

Type	Chemical Name	Chemical Symbol	Voltage Class	Over-charge Voltgae	Over-discharge Volatge	Banlanced Start	Balanced Current*	Charge Voltage Class*
A	lithium cobaltate	LiCoO2	3.70V	4.25V	2.50V	3.90V	50mA	4.25V
B	Ternary lithium	NiCoMn	3.70V	4.20V	2.80V	3.90V	50mA	4.25V
C	iron phosphate Lithium	LiFePo4	3.20V	3.65V	2.50V	3.50V	50mA	3.75V
D	High voltage lithium	High Voltage	3.80V	4.35V	3.00V	3.90V	50mA	4.35V
E	Lithium titanate	Titanate LTO	2.40V	2.80V	1.80V	2.50V	50mA	2.80V
F	Super capacitor	Super CAP	1.50V	2.80V	1.60V	2.40V	50mA	2.70V

Balanced current*:passive heat consumption and heating balance

Charge voltage class*: it is for each cell, and when the battery stack is set for 10 series, then the charge voltage class is 4.25V*10=42.5V

- Product size： 100*60*5mm， 75g
- Product accessories： mainboard *1 pcs detect wire XH2.54-AWG22*1 set
- Expandable function ： equipped with communication interface port for user to DIY



• CATION •

- When connecting PCM to battery pack, or dismantling PCM from battery pack, we should comply with connection sequences and rules.If the operating sequences go against required sequences,chips probably work abnormal and protection functions stop moving after power on.It will result in serious consequences.

- When fixing PCM to battery pack, we should wear reliable earth wrist strap.PCM should not short circuit with charged polar wires of battery pack. PCM should not be squeezed and various operations that probably destroy PCM should not be allowed.
  Preparation work and PCM fixing sequences: B- of PCM weld to the negative of battery pack,then insert the connector of the voltage detection line to J1 socket of PCM. Notice pin sequences of J1 socket marks.

- Sequences of dismantle PCM:Dismantle the connector connected on the PCM, then weld off negative wire of the battery pack。