specifications for appliances

Customer Name:_____
Customer model number:_____
Main Material Configuration: MM3474L02VBE+SS018N08LS*26
Hen King Material No.: XJ-D038V3FT4S200A-01
Date: 2023-07-18

Hen King Internal Confirmation			
Confirmation of works	Quality Confirmation	market recognition	vetting
Customer Confirmation			
Confirmation of works	Quality Confirmation	Procurement confirmation	vetting
Confirmation result: Pass ( ) Fail ( ) Other ( )			

1. Overview

This acknowledgement describes the scope of application, process standards, electrical performance parameters, main materials, dimensional specifications, testing standards and other items related to lithium battery protection circuit produced by Dongguan Xuanjing Electronics Co. All the standards described in this acknowledgement can be used as the quality inspection standards and basis.

2.Product application range

2.1 Liquid lithium ion rechargeable batteries;

2.2 Polymer lithium ion rechargeable battery.

3. Product appearance and process indicators

serial number	sports event		Test Methods and Means	Inspection Standards
3.1	Product Appearance		visual	The appearance of the protection board should meet the following requirements: reasonable wiring, neat arrangement of components, no oxidation or color abnormality of the pads and soldering points, clean and stain-free surface of the components and the PCB board, which does not affect its commercial value.
3.2	offerings arts and crafts	Welding process	Visualize with the aid of a magnifying glass	The welding joints are round and smooth, the welding is firm and reliable, and there are no welding defects such as false welding, false welding and burr.
		Plate Material		☑ Glass Fiber Double Sided ☐ Glass Fiber Single Sided ☐ Plain Single Sided ☐ Others
		PCB Plating Process		☐ Thick gold ☐ Cobalt gold ☐ Sprayed tin ☐ Plain gold ■Sprayed lead-free tin ☐ Others
		Finished plate welding process		☐ Ordinary tin ☐ Environmentally friendly lead-free tin ☐ Environmentally friendly halogen-free tin ☐ Others

4.Main parameters of electrical performance

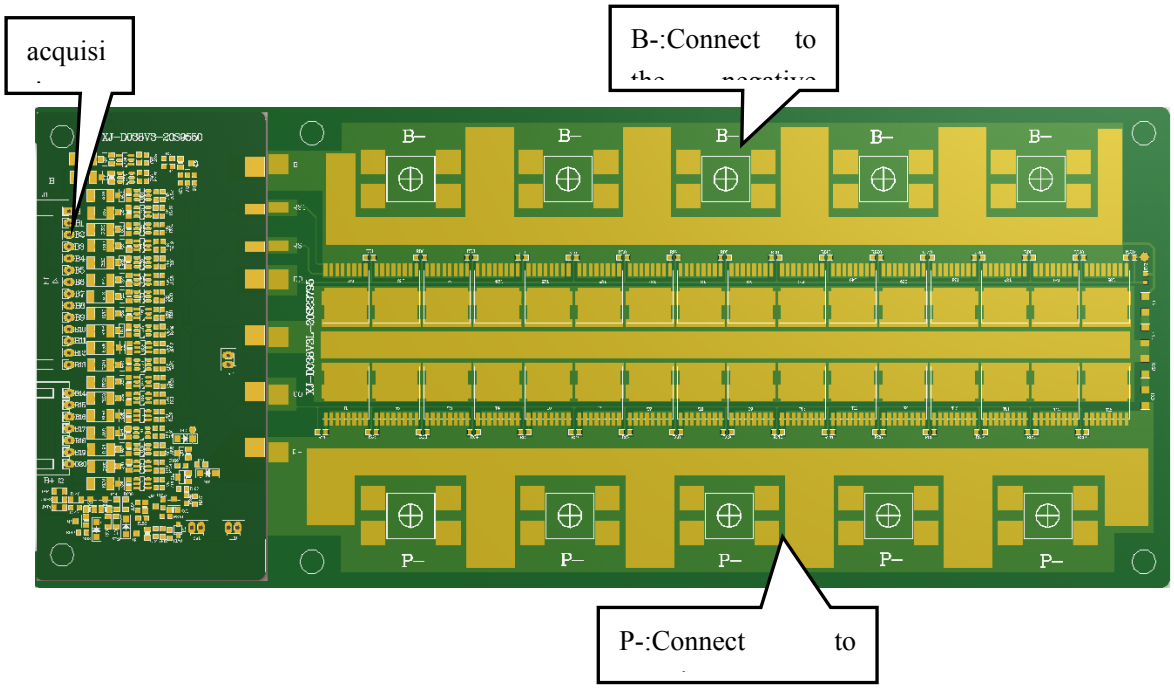
serial number	Item	minimal	typical case	greatest	unit (of measure)
1	Battery Pack Charging Voltage		15	15.1	V
2	Charging MOS withstand voltage value	85			V
3	Discharge MOS withstand voltage value	85			V
4	Single Overcharge Detection Voltage	3.70	3.75	3.80	V

5	Overcharge recovery voltage	3.50	3.55	3.60	V
6	Overcharge detection delay	500	1000	1500	mS
7	Single-section overdischarge detection voltage	2.10	2.20	2.30	V
8	overdischarge recovery voltage	2.60	2.70	2.80	V
9	Overdrive detection delay	500	1000	1500	mS
10	Battery Pack Continuous Discharge Current			200	A
11	Battery pack continuous charging current			200	A
12	Discharge overcurrent protection	900	1000	1100	A
13	Overcurrent protection delay	5	10	15	mS
14	fig. waste one's own energy		30	50	uA
15	Equalization current	30	40	50	mA
16	Charging temperature protection	65±4° C.			
17	Discharge temperature protection	115±4° C.			
18	Output short circuit/over discharge/over current protection recovery	Automatic recovery from load removal after short circuit/over discharge/over current protection			
19	Short circuit protection delay	100	300	600	uS
20	Normal operating condition B- to P- internal resistance			10	mΩ

Note: The above test environments are all measured at 25℃, may be different under extraordinary temperatures, the operating temperature range of the circuit is -40 to 85℃, please refer to the specifications of the protection IC for the specific test conditions and test circuits.

5. Wiring instructions:

acquisition line	B1	Section 1 Negative Electrode
	B2	Section 1 Core Positive
	B3	Section 2 Core Positive
	.....	.....
	.....	.....
	B5	Section 4 Core Positive
B-	Connect to the negative pole of the battery, select the thickness of the power cord according to the current.	
P-	Protect the negative pole of the board charging and discharging, choose the thickness of the power cord according to the current.	
Connection method	1. Capture wires are soldered to the core in a corresponding manner, and the order of the capture wires must not be wrong. 2. Solder B- to B-pad on PCBA.	

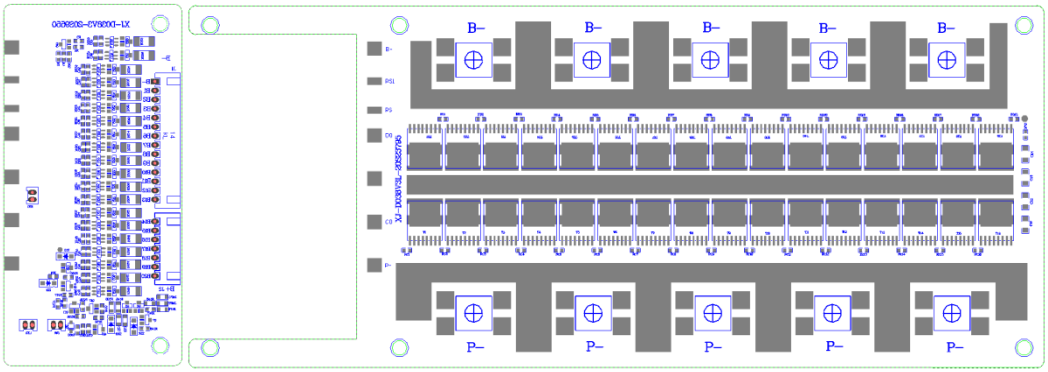


7. Main Bill of Materials

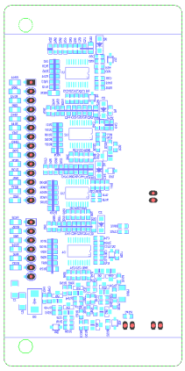
serial number	Material Name	Material code	Material Specification	dosage	company
1	Protection IC	U1	mm3474l02vbe/tssop-20	1	Aesthetics
2	MOSFET	t4-t16,t24-t30,t35-t40	SS018N08LS/TOLL	26	consider opening one's eyes
3	circuit board	PCB	XJ-D038V3L-20S23795 239.49*101*1.6mm/Green oil with white characters/Aluminum substrate/2.0 OZ/ROHS	1	
4	circuit board	PCB	XJ-D038V3-20S9550/101*50*0.8mm/green oil with white characters/FR4/1.0 OZ/ROHS	1	

8. PCB layout

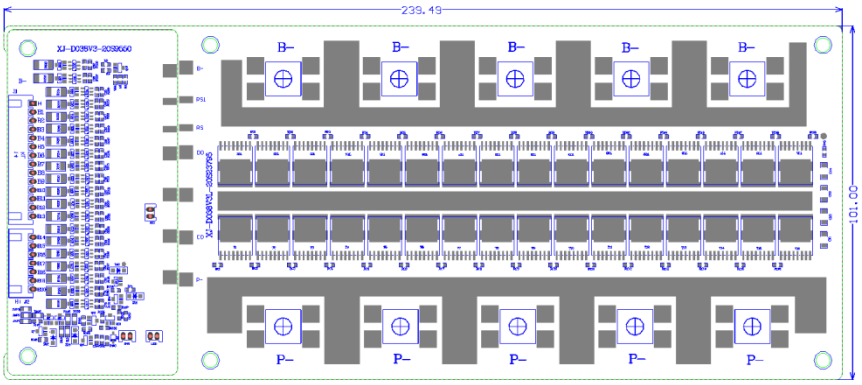
Top level circuit board component location diagram



Bottom circuit board component location diagram



9. PCB dimension drawing (length 239.49±0.2mm, width 101±0.2mm, thickness 2.4±0.3mm)



10. Environmental substance requirements:

All materials in the contents of this specification comply with the requirements of the RoHS Directive, and the content of restricted substances complies with the following standards:

限用物质清单

List of Prohibited Substances

有害物质各称 Hazardous substances	限定值PPm （mg/Kg） Limit ppm(mg/kg)	保证符合选项 Guarantee of conformity	备注Remark
Cd	≤100ppm	OK	欧盟RoHS 2.0
Pb	≤1000ppm	OK	欧盟RoHS 2.0
Hg	≤1000ppm	OK	欧盟RoHS 2.0
Cr6+	≤1000ppm	OK	欧盟RoHS 2.0
PBB	≤1000ppm	OK	欧盟RoHS 2.0
PBDE	≤1000ppm	OK	欧盟RoHS 2.0
DIBP	≤1000ppm	OK	欧盟RoHS 2.0
DEHP	≤1000ppm	OK	欧盟RoHS 2.0
BBP	≤1000ppm	OK	欧盟RoHS 2.0
DBP	≤1000ppm	OK	欧盟RoHS 2.0

11. The use of flux and rosin is strictly prohibited in the PACK production process!

If used it will cause intermittent short circuit between the IC or MOS tube pins of the protection board, resulting in the phenomenon that the battery cannot be charged and discharged normally and the self-consumption is too high.

12 Guidelines for packaging, storage and transportation

Packing: The finished product of the splicing board will be wrapped with anti-static film according to the actual quantity, and labeled with the material label, indicating clearly the model, quantity, and configuration.

Transportation: express delivery or send someone to deliver.

Storage: General storage temperature is -15°C~45°C, relative humidity is not more than 60%, no dust/no acid/no alkaline/no other corrosive gas. The storage time is one year.

More than one year should be fully inspected and passed before being circulated for use again.

Note: In the process of transportation and use, attention should be paid to moisture, humidity, avoid extrusion, collision, etc., so as not to protect the deformation of the board.