Li-Polymer Battery Specification

Model No.: PL204370/7.4V

Nominal Capacity:3000mAh

Customer: *********

Total Page: 10 pages

Registered	Checked	Approved
Pinghui Zhou		
2017-8-17		

Customer Approve		
Dept.	**Signature**	**Date**
QA Dept		
R&D Dept		
Approved		

Content

1.MODIFIED LIST

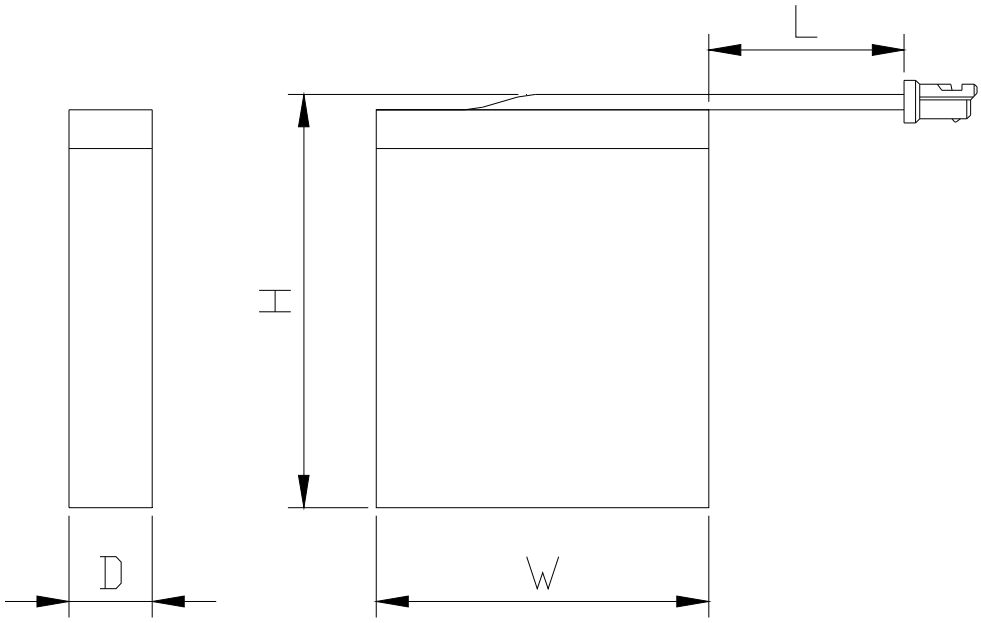
Product Modified Record List

Revision	Date	Mark	Modified content	Approved by
A0	2017-8-17		None	

2 .Scope

This specification describes the basic performance, technical requirement ,testing method , warning and KBP of the Li-Polymer rechargeable battery .

3. Initial Dimension



L Max:70±1.0mm	W . Max:43±0.5mm	T Max:20±0.3mm	With connector

Wire Model No.: Same as samples

Wire length: 100mm +/- 2mm

4.Electrical Characteristic

Item Specification	Content	Criterion
4.1 Over charge protection	Over charge detection voltage	8.400V+/-0.025V
	Over charge detection delay time	0.8-2.0S
	Over charge release voltage	8.2v+/-0.025
4.2 Over discharge protection	Over discharge detection voltage	4.8V+/-0.1V
	Over discharge detection delay time	120-180ms
	Over discharge release voltage	6.0v+/-0.05v
4.3 Over current Protection	Over current detection voltage	0.30v+/-0.015v
	Over current detection current	2-6A
	Detection delay time	7.2-11ms
	Release condition	Cut load
4.4 Short protection	Detection condition	Exterior short circuit
	Detection delay time	150-540us
	Release condition	Cut short circuit
4.5 Interior resistance	Main loop electrify resistance	V_C=8.4V ; R_{DS}≤120mΩ
4.6 Current consumption	Current consume in normal operation	less than 10uA

5.Specification

NO.	Item	Specifications
5.1	Nominal capacity	3000mAh 0.2C Discharge
	Min capacity	2950mAh 0.2C Discharge
5.2	Nominal voltage	7.4V
5.3	Charge current	Standard Charge：0.2C
5.4	Standard Charging method	0.5C CC（constant current）charge to 8.4V,then constant voltage 8.4V charge till charge current decline to ≤0.01C
5.5	Charging time	Standard Charging Approx4 hours
5.6	Max.discharge current	1000mA (0.5C) end voltage 6.0V
5.7	Standard Discharge Current	Constant current 400mA (0.2 C) end voltage 6.0V
5.8	Discharge cut-off voltage	6.0V
5.9	Charge cut-off Voltage	8.4V
5.10	Initial Impedance	≤160mΩ
5.11	Weight	Approx.：120g
5.12	Operating temperature	Charging： 0℃~45℃ Discharging：-20℃~60℃
5.13	Storage temperature	-10℃～+40℃(less then 1 month), 0℃～+35℃(less then 6 month)
5.14	Storage Humidity	≤75% RH
5.15	Appearance	Without scratch,distortion,contamination and leakage
5.16	Standard environmental condition	Temperature :23±5℃ Humidity： 45-75%RH Atmospheric Pressure:86-106 Kpa

6 General Performance

No.	Item	Test Methods and Condition	Criteria
6.1	Cycle Life	Constant current 0.5C charge to 8.4V, then constant voltage charge to current declines to 0.01C, rest 10min，constant current 0.2C discharge to 3.0V，rest 10min. Repeat above steps till continuously discharging capacity Higher than 80% of the Initial Capacities of the Cells	≥500 times
6.2	Capability of keeping electricity	20±5℃, After standard charging, rest the battery 28days, discharging at 0.2C to capacity Higher than 80% recording the discharging time.	≥240min

7 Environment Performance

No.	Item	Test Methods and Condition	Criteria
7.1	Discharge at high temperature	After standard charging, rest the Cells 4h at 60±2℃, then discharging at 1C to voltage 6.0V, recording the discharging time.	≥54min
7.2	Discharge at low temperature	After standard charging, rest the Cells 16h at -20±2℃, then discharging at 0.2C to voltage 6.0V, recording the discharging time.	≥210min
7.3	Thermal shock	Put the battery in the oven. The temperature of the oven is to be raised at 5±2℃ per minute to a temperature of 130±2℃ and remains 30 minutes.	No fire, no smoke

8 Safe Characteristic

No.	Item	Test Methods and Condition	Criteria
8.1	Over charge testing	At 23±5℃, charging batteries with constant current 3C to voltage 10V, then with constant voltage 10V till current decline to 0. Stop test till batteries' temperature 10℃ lower than max temperature.	No smoke or fire

8.2	Over discharge testing	At 23±5℃, According to the requirements of standard charge,the battery will be discharge to cut-off voltage, then connect with external load of 30 ohm for 24 hours.	No fire, no smoke, no leakage.
	Short-circuit testing	At 23±5℃, After standard charging, connect batteries' anode and cathode by wire which impedance less than 50mΩ, keep 6h.	No smoke or fire

※ Above testing of safe characteristic must be with protective equipment.

9. CAUTIONS IN USE

To ensure proper use of the battery please read the manual carefully before using it. Handling

- Do not expose to, dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid shorting the battery
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children.

. charge and discharge

- Battery must be charged in appropriate charger only.
- Never use a modified or damaged charger.
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- Do not leave battery in charger over 24 hours.

. storage

- Store the battery in a cool, dry and well-ventilated area.

. disposal

- Regulations vary for different countries. Dispose of in accordance with local regulations.

10. Battery operation instruction

10.1 Charging

Charging current：Cannot surpass the biggest charging current which in this specification book stipulated。

Charging voltage：Does not have to surpass the highest amount which in this specification book stipulated to decide the voltage。

Charge temperature：The battery must carry on the charge in the ambient temperature scope which this specification book stipulated。

Uses the constant electric current and the constant voltage way charge, the prohibition reverse charges. If the battery positive electrode and the cathode meet instead, can damage the battery。

10.2 Discharging current

The discharging current does not have to surpass this specification book stipulation the biggest discharging current, the oversized electric current electric discharge can cause the battery capacity play to reduce and to cause the battery heat。

10.3 discharge temperature

The battery discharge must carry on in the ambient temperature scope which this specification book stipulated

10.4 Over-discharges

After the short time excessively discharges charges immediately cannot affect the use, but the long time excessively discharges can cause the battery the performance, battery function losing. The battery long-term has not used, has the possibility to be able to be at because of its automatic flashover characteristic certain excessively discharges the condition, for prevented excessively discharges the occurrence, the battery should maintain the certain electric quantity。

10.5 Storing the Batteries

The battery should store in the product specification book stipulation temperature range. If has surpasses above for six months the long time storage, suggested you should carry on additional charge to the battery。

11. Period of Warranty

The period of warranty is half a year from the date of shipment. guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customers abuse and misuse.

12. Other The Chemical Reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

13.Note:

Any other items which are not covered in this specification shall be agreed by both parties.