LYOUNG 远阳® ENERGY

聚合物锂离子电池产品规格书

Polymer lithium-ion battery product specification

客户名称:
Customer Name

产品名称:
Model Name 柱式锂离子电池组-三角形排列

规格型号:
Product model FLY.18650.3S1P.TX

送样日期:
Date

◆ 出厂签章:

工程部 PIE	品质部 QA	业务部 B&D	批准 Approved
黄烈清	王仁树	王培	陈远洪
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◆ 客户确认签章:

审 核 Checked	批 准 Approved	确认签章 Company Stamp

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电话:0769-83269986 地址: 东莞市寮步镇松湖智谷研发中心 A4 栋 4F

规格书修订记录 Revision history

更改日期 Date	更改内容 Event	版本号 Version
2023 年 07 月 06 日 July 06, 2023	首次发行 First issue	A/0

目 录 Content

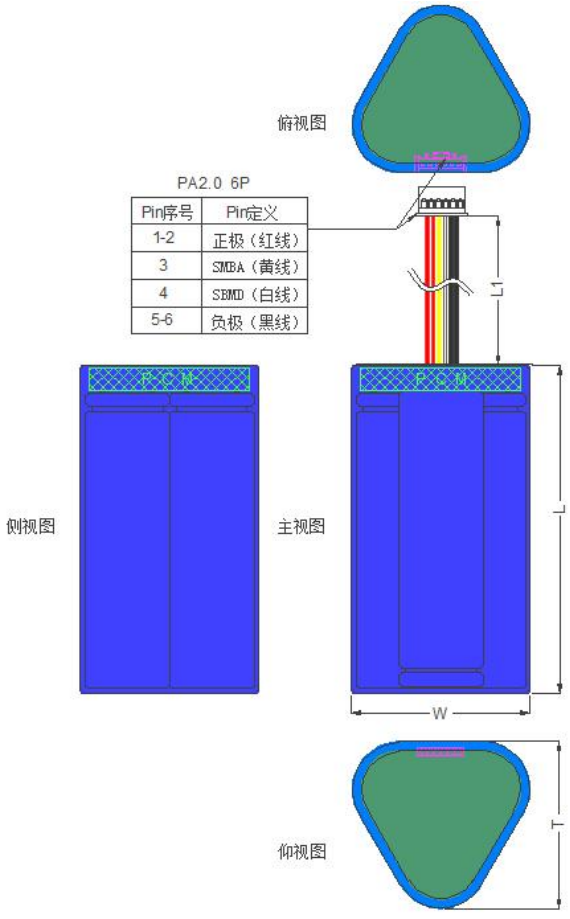
1. 适用范围 Scope

本标准规定了由远阳公司生产的锂离子电芯技术要求，测试方法及注意事项。
This standard specifies the technical requirements, testing methods and precautions for lithium-ion batteries produced by FLYOUNG Company.

2. 电池主要物料 Battery main materials

序号 NO.	物料名称 Material name	规格型号 Specifications	数量 Qty	备注 Remark
1	电芯/Cell	18650-3000mAh	3	
2	保护板/PCM	BQ40Z50RSMR-R1+MXN3011M/MXN 3342*4	1	
3	导线/Wire	UL3239-26#双红色/黄色/白色/双黑色	1	红线 P+,黄色 SMBA，白色 SBMD,黑色 P-
4	标签/ Label	亚银标签 50*20*0.05mm	1	
5	热缩套管/PVC	80*60*0.18mm	1	蓝色
6	连接器端子 Connector terminal	PA2.0-6P-正向	1	红红黄白黑黑

3. 电池尺寸及显示信息 Battery size and display information



项目 Item	规格参数 Specification
L	Max 69.5±1.0mm
W	Max 37.0±1.0mm
T	Max 34.5±1.0mm
L1	55±3mm
说明：保护板焊线位置，焊接后会打工业胶固定，工业胶符合 ROHS。	

4. 电池规格 Specifications of cell

序号 NO.	项目 Items	规格参数 Specifications		
1	标称电压 Nominal voltage	10.8V		
2	标称容量 Nominal capacity	3000mAh 0.2C 放电(0.2C Discharge)		
3	最小容量 Min capacity	2950mAh 0.2C 放电(0.2C Discharge)		
4	充电电流 Charge current	标准充电： 0.2C Standard Charging:： 0.2C 快速充电： 1.0C Rapid charge： 1.0C		
5	标准充电方法 Standard Charging method	0.2C CC(恒流)充电至 12.6V,再 CV(恒压 12.6V)充电直至充电电流≤0.02C 0.2C CC（constant current）charge to 12.6V,then CV(constant voltage 12.6V)charge till charge current decline to ≤0.02C		
6	充电时间 Charging time	标准充电： 3.5 小时（参考值）Standard Charging： 3.5hours(Ref.) 快速充电： 2.0 小时（参考值） Rapid charge： 2.0hours(Ref.)		
7	最大充电电流 Max. Charge current (不用于循环)Not For Cycle	1.0C (3.0A)		
8	最大放电电流 Max.discharge current	2.7C (8.0A)		
9	充电电压 Charge voltage	12.6V		
10	放电截止电压 Discharge cut-off voltage	7.95V		
11	过充保护电压 Overcharge protection	12.75V±0.075V		
12	过放保护电压 Overdischarge protection	7.95V±0.075V		
13	关断模式电压 Cell shutdown voltage	7.65V±0.075V		
14	工作温度 Operating temperature (不可在极限温度长时间持续充放电) Don't long time charge and discharge in extreme temperatures	充电/ Charging：	0℃~15℃：0.2C	16℃~50℃：1.0C
		放电/ Discharging：	-20℃~60℃：0.2C	16℃~60℃：2.7C
15	储存温度 Storage temperature	1 个月内:0℃~ +60℃ Within 1 month: 0℃~ +60℃	3 个月内:0℃~ +45℃ Within 3 months: 0℃~ +45℃	6 个月内:0℃~ +25℃ Within 6 months: 0℃~ +25℃
16	电池内阻 Resistance	≤175mΩ(成品)		
17	出厂电压 Factory voltage	10.2V-11.5V（电量显示 15%~65%SOC）		
18	电池重量 Battery weight	145.5±5 g		
19	预充电压电流 Precharge voltage current	7.95V/60mA		

5. 外观检查 Visual inspection

无破裂、划痕、变形、污迹、电解液泄露等
Without break, scratch, distortion, contamination, leakage and so on

6. 测试条件 Test Conditions

6.1 标准测试条件 Standard Test Conditions

若无特别要求，此规格书上的产品测试条件均为温度： 25°C±2°C；湿度：65%±20% RH。
Unless otherwise specified,all tests stated in this Product Specification should be conducted at temperature 25°C±2°C and humidity 65%±20% RH.

6.2 标准充电方式 Standard Charge Method

“标准充电”即在环境温度为 25°C±2°C 的条件下，先以恒定电流（0.2C）充电至 12.6V，再以 12.6V 的恒压充电至电流小于（0.02C）。
The "Standard Charge" means charging the cell at a constant current of （0.2C）until the voltage is 12.6V, and then charged at a constant voltage of 12.6V until its current is less than （0.02C）mA. For test purpose, charging shall be performed at 25°C±2°C.

6.3 标准放电方式 Standard discharge method

“标准放电”即在环境温度为 25°C±2°C 的条件下，以恒定电流（0.2C）放电到 7.95V。
The "Standard Discharge" means discharging the cell at a constant current of（0.2C）until the voltage is 7.95V. For test purpose, discharging shall be performed at 25°C±2°C.

7. 性能检查及测试 Performance Criteria

7.1 电性能 Electrical characteristics

<table>
<tr><th>序号
NO.</th><th>测试项目
Test Item</th><th>测试方法
Test Method</th><th colspan="4">检验标准
Criteria</th></tr>
<tr><td rowspan="3">1</td><td rowspan="3">倍率放电性能
Discharge Rate Capabilities</td><td rowspan="3">电池按照右表不同电流放电至截止电压 (7.95V)
The battery is measured with the various discharge currents in right table to the cut-off voltage after the standard charge.(7.95V)</td><td colspan="4">放电条件
Discharge Condition</td></tr>
<tr><td colspan="2">放电电流
Discharge Current</td><td>3000mA</td><td>8000mA</td></tr>
<tr><td colspan="2">相对（0.2C）放电容量比 Relative Capacity Rate of （0.2C）</td><td>≥88%</td><td>≥85%</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">不同温度放电性能
Different Temperature Discharge Capacity</td><td rowspan="2">电池按右表不同温度搁置 4h 以（0.2C） 电流放电至 7.95V
The battery is measured with discharge constant current of （0.2C） to 7.95V with follow discharge temperature and rest for 4h after the standard charging.</td><td>放电温度
Discharge temperature</td><td>-20°C</td><td>25°C</td><td>55°C</td></tr>
<tr><td>相对容量
Relative Capacity</td><td>≥65%</td><td>100%</td><td>≥85%</td></tr>
</table>

3	循环寿命 Cycle Life	电池以（0.2C）电流充电至 12.6V，（0.02C）电流截止，以（1.0C）电流放电至 7.95V ，25°C±2°C 连续进行充放电循环 800 次 Each cycle is an interval between（0.2C） charges to 12.6V with （0.02C） cut-off and （1.0C） discharge with 7.95V cut-off at 25°C±2°C. Capacity after 800cycles.	容量保持率≥65%初始容量 Capacity retention≥65% Initial capacity		
4	储存 Storage	电池按规定充电，45°C±2°C 储存 28d 后以（0.2C）电流放电至截止电压测试容量恢复率 Capacity after storage for 28d at 45°C±2°C after the standard charged measured with discharge current of（0.2C）to cut-off voltage	容量恢复率≥90%初始容量 Capacity recovery ≥90% Initial capacity		
5	常温荷电保持与恢复能力 Normal Temperature Charge Retention and Regain	电池按规定充电，25°C±2°C 储存 28d 后以（0.2C）电流放电至截止电压测试容量保持和恢复 Capacity after storage for 28d at 25°C±2°C after the standard charged measured with discharge current of（0.2C）to cut-off voltage.	相对初始容量 Relative Capacity vs. Initial Capability	保持率 Retention	恢复率 Regain
				≥85%	≥90%
6	高温荷电保持与恢复能力 High Temperature Charge Retention and Regain	电池按规定充电，60°C±2°C 储存 7d 后，以（0.2C）电流放电至截止电压测试容量保持率和容量恢复率 Capacity after storage for 7d at 60°C±2°C after the standard charged measured with discharge current of（0.2C）to cut-off voltage.	相对初始容量 Relative Capacity vs. Initial Capability	保持率 Retention	恢复率 Regain
				≥85%	≥90%

7.2 机械特性 Mechanical characteristics

序号 NO.	测试项目 Test Item	测试方法 Test Method	检验标准 Criteria
1	跌落测试 Drop Test	满电电池从 1m 的高度以随机的方向跌落至木地板 3 次(从头部、尾部、侧面三个方向)，实验后放置至少 1h 后进行外观检查。 A fully charged battery drop onto the wooden floor from 1.0m height three times in a random direction. After the experiment placed at least 1h, the appearance of theinspection.	不爆炸、不起火 No explosion, no fire
2	振动测试 Vibration Test	电池经受简单的调谐振动，振幅为 0.76mm。振动频率在 10~55Hz 范围内以 1Hz/min 的速率变化，在 90±5min 内恢复回来，电芯沿 3 个相互垂直的方向振动。 Battery is to be subjected to simple harmonic motion with amplitude of 0.76 mm. The frequency is to be varied at the rate of 1 hertz per minute between 10 and 55 hertz,and return in not less than 90±5 minutes. The cell is to be tested in three mutually perpendicular directions.	不爆炸、不起火、不漏液 No explosion, no fire, no leakage

7.3 安全测试 Safety Test

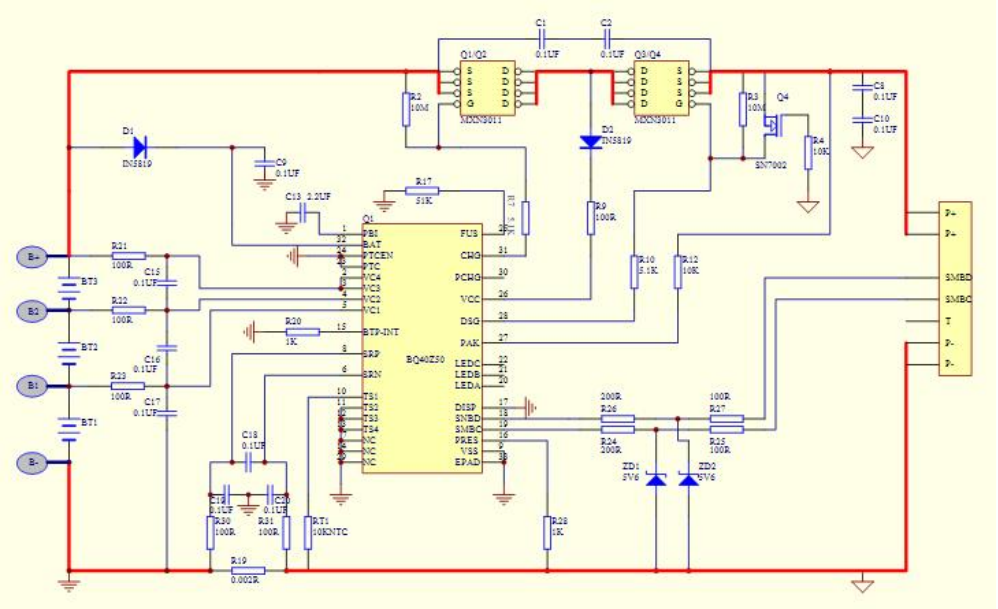
下述试验应在有强制排风条件及防爆措施的装置内进行，在试验前所有的电芯都按 6.2 规定标准充电方式充电，并搁置 24h 后，再进行以下试验。

All below tests are carried out on the equipment with forced ventilation and explosion-proof device. Before test, all cells should be charged in accordance with 6.2, and stored 24h prior for testing.

序号 NO.	测试项目 Test Item	测试方法 Test Method	检验标准 Criteria
1	挤压测试 Crush Test	将电池置于挤压设备的两个挤压平面之间，用液压油缸或类似的力挤压， 挤压面与电池接触，逐渐增加压力至 13±1 KN 后停止。 Battery is to be crushed between two flat surfaces.The force for the crushing is to be applied by a hydraulic ram or similar force mechanism. The flat surfaces are to be brought in contact with the batterys and the crushing is to be continued until an applied force of 13±1 KN is reached. Once the maximum force has been obtained is to be released.	不爆炸、不起火 No explosion, no fire
2	加热测试 Heating Test	将电池放在电热鼓风干燥箱中加热，温度以 5°C±2°C /min 的速率由室温升至 130°C±2°C 并保持 30min，观察 1h。 Battery is to be heated in a gravity convection or circulating air oven. The temperature of the oven is to be raised at a rate of 5°C±2°C per minute to a temperature of 130°C±2°C and remain for 30 min and observed 1h.	不爆炸、不起火 No explosion, no fire
3	过充（无保护板） Over-charge Test (NO PCM)	标准充电方式充满电后，以(1C) 电流充电至 6.3V 或者充电 1h，观察 1h。 Fully standard charged cell is charged with (1C) to 6.3V or until charging time up to 1h.	不爆炸、不起火 No explosion, no fire
4	短路测试（无保护板） Short-circuit Test (NO PCM)	短接电芯的正负极，外部线路总电阻小于 5mΩ，10min 后结束实验。 Short-circuit the standard charged cell by connecting positive and negative terminal less than 5mΩ, until the test time is lasting to 10min.	不爆炸、不起火 No explosion, no fire
5	过放电（无保护板） Over-discharge Test(NO PCM)	标准放电方式后的 电芯以（1.0C）电流放电 90 min, 观察 1h。 Each standard discharged cell is discharged at （1.0C）current for 90 min and observed 1h.	不爆炸、不起火 No explosion, no fire
6	低气压 Altitude Simulation	电池放入温度为 20°C±5°C 的低气压箱中，调节试验箱中气压为 11.6KPa，静置 6h 后观察 1h 。 Each fully charged battery is placed in a vacuum chamber with the ambient temperature (20°C±5°C). Once the chamber has been sealed, its internal pressure is gradually reduced to a pressure equal to or less than 11.6KPa held at that value for 6 hours. And it need take 1 hour to observe.	不爆炸、不起火、不漏液 No explosion, no fire, no leakage

8. 保护板参数 PCM parameter

8.1 保护板原理图 PCM Schematic Diagram



8.2 保护板性能 PCM performance

项目Item	经典值Criteria	最小值MIN	最大值MAX
1. 过充保护电压 Over charge protection voltage	4.250V	4.225V	4.275V
2. 过充保护恢复电压 Over charge release voltage	4.100V	4.075V	4.125V
3. 过充保护延迟时间 Over charge protection delay time	1500ms	1000ms	2000ms
4. 过放检测电压 Over discharge detection voltage	2.650V	2.625V	2.675V
5. 过放保护恢复电压 Over discharge release voltage	3.000V	2.950V	3.050V
6. 过放保护延迟时间 Over discharge protection delay time	1500ms	1000ms	2000ms
7. 关断模式电压 Chip shutdown voltage	2.55V	2.52V	2.58V
8. 放电过流保护电流1 Discharge overcurrent protection current 1st	8.0A	7.9A	8.1A
9. 放电过流保护延时 Discharge overcurrent protection delay	2.0S	/	/
10. 放电过流保护电流2 Discharge overcurrent protection current 2st	10.0A	9.9A	10.1A
11. 放电过流保护延时 Discharge overcurrent protection delay	1.5s	/	/
12. 充电过流保护电流1 Charging Overcurrent Protection Current 1st	5.0A	4.9A	5.1A

13. 充电过流保护延时 Charging overcurrent protection delay	1.5s	/	/
14. 充电过流保护电流2 Charging Overcurrent Protection Current 2st	7.0A	6.9A	7.1A
15. 充电过流保护延时 Charging overcurrent protection delay	1.0s	/	/
16. 过流保护解除条件 Over current protection release condition	放电电流= 0mA 延时10S		
17. 短路保护延迟时间 Short protection delay time	168us	80us	1049us
18. 短路保护电流 Short Circuit in Discharge	外部短路电流＞20A±1A启动保护 External Short circuit current＞20A±1A Start protection control		
19. 恢复条件 Release Conditions	15S后自动恢复		
20. 正常工作时自耗电流 Current consumption(Operation)	360μA	150μA	700μA
21. 备机状态时自耗电流 Current consumption(standby)	100μA	/	360μA
22. 内阻 Internal resistance	/	/	80mΩ
23. 输入电压(B+与B-间) Input voltage(B+ to B-)	-0.3V	/	+12.825V
24. 最大持续充电电流 Maximum continuous charging current	4.0A	3.9A	4.1A
25. 最大持续放电电流 Maximum continuous discharge current	8.0A	7.9A	8.1A
26. 充电过温 Over temperature in Charge	50℃	47℃	53℃
27. 低温充电 Under Temperature in Charge	0℃	-3℃	3℃
28. 放电过温保护 Over temperature in Discharge	65℃	63℃	67℃
29. 低温放电保护 Under Temperature in Discharge	-25℃	-23℃	-27℃
30. NTC电阻 NTC Resistor(环境温度25℃)	10.00KΩ	9.90KΩ	10.10KΩ
31. 标称容量 Nominal Capacity		3000mAh	
32. 标称电压 Nominal Voltage		10800mV	
33. 串数 cell		3	
34. 温度精度 Temperature Accuracy	Ta① ℃	Ta-3 ℃	Ta+3 ℃

35. 电压精度 Cell Voltage Accuracy	4000②mV	3995mV	4005mV
36. 电流精度 Current Accuracy	2000mA	1990mA	2010mA
37. 化学ID Chem ID		2501	
38. 均衡 equilibrium	内部均衡 1：充电到80%有压差启动均衡,均衡电流≤5mA； 2：压差＞100mv直接启动均衡，均衡电流≤5mA； 3.：压差≤3mV或者均衡时间超出18000S停止均衡。		

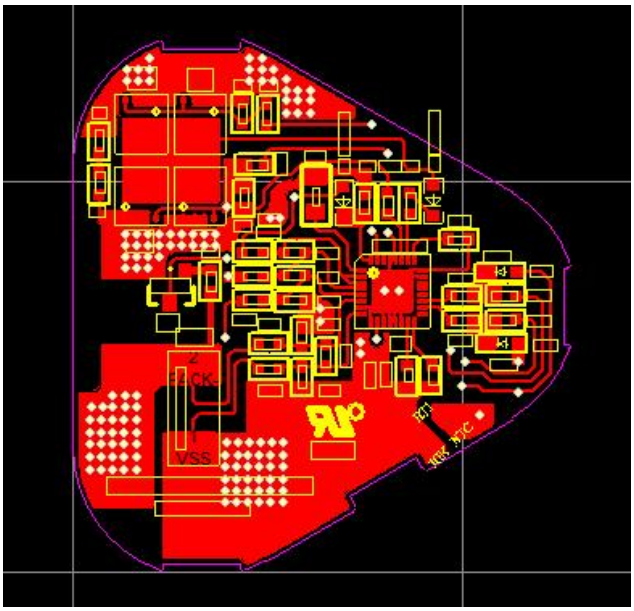
8.3 保护板主要元件清单 PCB component list

物料代码 Material code	名称 Name	物料型号 Material model	单位 Unit	用量 Consumption	位号 Tag number
	PCB	ZY-FLY-3S1P-V1.0 白字黑油 OSP FR-4 2 层 1OZ ROHS	PCS	1	供应商：路通达
305-000208	电容	电容 GRM155R71E104KE14D 100nF ±10% X7R 25V 0402 MURATA ROHS	PCS	6	C15,C16,C17,C18, C19,C20
305-000145	电容	SMD 电容 GRM188R71H104KA93D 100nF ±10% 50V X7R 0603 MURATA 村田 HF	PCS	4	C1,C2,C8,C10
305-000059	电容	电容 CL10A225KA8NN5C 2.2uF ±10% 25V X5R 0603 SAMSUNG ROHS	PCS	1	C13
304-000193	电阻	电阻 0402WGF5102TCE 51KΩ ±1% 1/16W 0402 ROYALOHM 厚生 ROHS	PCS	1	R17
304-000120	电阻	电阻 RJ0402-10M-HS 10MΩ ±5% 1/16W 0402 UNIOHM 厚声 ROHS	PCS	2	R2,R3
304-000169	电阻	电阻 RC0402FR-0710KL 10KΩ ±1% 1/16W 0402 YAGEO 国巨 ROHS	PCS	2	R4,R12
304-000176	电阻	电阻 RJ0402-5.1K-HS 5.1KΩ ±5% 1/16W 0402 ROYALOHM ROHS	PCS	2	R7,R10
304-000177	电阻	电阻 RJ0402-1K-HS 1KΩ ±5% 1/16W 0402 ROYALOHM ROHS	PCS	2	R20,R28
304-000178	电阻	电阻 RC0402FR-07100RL 100Ω ±1% 1/16W 0402 YAGEO 国巨 ROHS	PCS	8	R9.R21,R22,R23,R24,R26,R30.R31
304-000127	电阻	电阻 RJ0402-200R-HS 200Ω ±5% 1/16W 0402 UNIOHM 厚声 ROHS	PCS	2	R25,R27
316-000054	合金电阻	合金电阻 SMA25A2FR002T 2mΩ ±1% 2W 2512 大毅 HF	PCS	1	R19
302-000281	IC	SMD IC Gas Gauge BQ40Z50RSMR-R1 FW:1.06 VQFN-32 TI HF 丝印：BQ40Z50	PCS	1	U1
303-000363	MOSFET	SMD MOS N-MOSMXN3011/MSN3342/6.9mΩ 45A PPAK3*3 ROHS	PCS	4	Q1,Q2,Q3,Q4
303-000035	MOSFET	N-MOS T2N7002BK 60V/±20V SOT-23 TOSHIBA ROHS	PCS	1	Q5

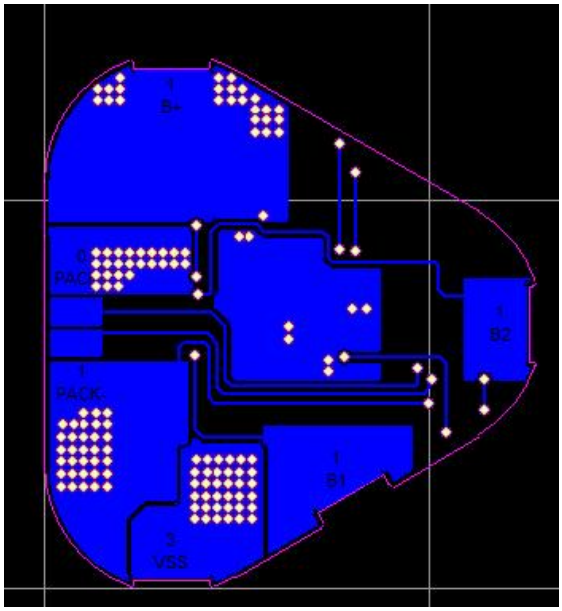
303-000300	MOSFET	N-MOS 2N7002K 60V/±20V 340MA SOT-23 CJ 长电 MARK:72K ROHS （备选物料）	PCS		
310-000035	二极管	二极管 SWITCH DIODE LBAS16HT1G S0D-323 LRC 乐山 ROHS	PCS	1	D1
310-000016	二极管	二极管 ZENER DIODE BZT52C5V6S 5.6V SOD-323 JCET ROHS	PCS	2	ZD1,ZD2
308-000015	NTC	DIP 线状 NTC SNS103B23435FE1L030E15 10KΩ ±1% B=3435 L=50±1mm 镀锡 1.5±0.5mm SENSICOM 仙桥 HF	PCS	1	RT1

8.4 保护板布局 PCM layout

TopLayer



Bottomlayer



9. 储存及运输 Storage and Transportation

9.1 储存 Storage:

9.1.1 锂电池需保存在阴凉，干燥，通风的环境中，避免接触火源与热源。
The Li-ion battery pack should be stored in a cool, dry and well-ventilated area, and should be far from the fire and the high temperature.
9.1.2 电池需按规格书规定温度范围进行储存，最佳储存温度为 25°C±2°C，最佳湿度为≤65%RH。
The battery should store in the product specification book stipulation temperature range, the best storage temp. Is 25°C±2°C. The best humidity is ≤65%RH.
9.1.3 电池应当在室温下存放，应充到 40%至 60%的电量。为防止电池过放，建议每 3 个月按标准充电方式进行一次充电，如储存时间超过一年，建议每年按标准充放电方式进行一次充、放电循环以激活电池。
The battery should be stored within room temperature, and charged to 40%~60% electric quantity. In order to avoid over-discharge, we suggest charge the batteries every three months. If stored over one year, we suggest activate the battery as per standard charge-discharge method.

9.2 运输 Transportation:

9.2.1 请勿与其他货物混合。

Do not mix the battery products with other cargos.

9.2.2 请勿将电池浸入水中或使其受潮。

Do not immerse the battery products in water or allow it to get wet.

9.2.3 最高运输温度不超过 60℃。

The highest temperature in transportation is lower than 60℃.

9.2.4 运输过程应防止剧烈振动、冲击、日晒雨淋。

During transportation, keep the cell from acutely vibration, impacting, solarization, drenching.

9.2.5 出货电池处于 10.35~11.1V 充电状态，由于电池存在自耗，运送到客户端的电池无法完全保证 10.35~11.1V 充电状态。

The capacity of delivery cell is approximately at 10.35~11.1V of charging. It is not specified more than 10.35~11.1V at customer, because of self-discharge.

10. 安全守则 Precautions and Safety Instructions

滥用锂离子充电电芯可能会造成电芯的损害或人身的伤害。在使用锂离子充电电芯以前，请仔细阅读以下内容。
Lithium-Ion rechargeable batteries subject to abusive conditions can cause damage to the cell and/or personal injury. Please read and observe the standard cell precautions below before using utilization.

10.1 电芯防范措施 Standard Cell Precaution

a.不要将电芯暴露在极热或有火星的环境中。

Do not expose the battery to extreme heat or flame.

b.不要将电池短路，过充或过放。

Do not short circuit, over-charge or over-discharge the battery.

c.不要使电池承受过重的机械冲击。

Do not subject the battery to strong mechanical shocks.

d.不要将电池浸入海水或水中，或者使其吸湿。

Do not immerse the battery in water or sea water, or get it wet.

e.不要颠倒电池的正负极。

Do not reverse the polarity of the battery for any reason.

f.不要拆卸或修整电池。

Do not disassemble or modify the battery.

g.不要和项链,硬币或发夹等金属物品放置在一起。

Do not handle or store with metallic like necklaces, coins or hairpins, etc..

h.不要使电池受到明显的损害或变形。

Do not use the battery with conspicuous damage or deformation.

i.不要将电池与插座连接。

Do not connect battery to the plug socket or car-cigarette-plug.

j.不要直接接触泄漏的电池。

Do not touch a leaked battery directly.

k.不要将锂离子电池混合使用。

Do not use Lithium-ion battery in mixture.

l.不要将电池放置在太阳光直射的地方。

Do not use or leave the battery under the blazing sun (or in heated car by sunshine).

m.将电池放置在远离儿童的地方。

Keep battery away from children.

n.不要针刺、锤打或践踏电池。

Do not drive a nail into the battery, strike it by hammer or tread it.

o.不要撞击或投掷电池。
Do not give battery impact or fling it.

10.2 电芯使用说明 Cell Operation Instruction

10.2.1.充电 Charging
a.电池充电温度范围为 0°C~50°C。
Charge the battery in a temperature range of 0°C to 50°C.
b.以（0.2C）的电流恒流充电至 12.6V，超过 （0.2C）的电流建议不要使用。
Charge the cell at a constant current of （0.2C） until 12.6V is attained. Charge rates greater than （0.2C） are not recommended.
c.保持恒压 12.6V 充电 1 小时(最大容量)。
Maintain charge voltage at 12.6V for 1hour (recommended for maximum capacity).
*必须使用恒流恒压方式对电池进行充电。
Cell must be charged with constant current-constant voltage method.
*不要超过标准时间持续充电。
Do not continue to charge cell over specified time.
10.2.2.放电 Discharging
a.建议放电终止电压为 7.95V，建议最大持续恒流放电电流为（8.0A）。
Recommended cut-off voltage to7.95V. Recommended max continuous discharge current is （8.0A）.
b.为了达到较好的性能，电池的放电温度范围为-20°C~65°C。
For maximum performance, discharge the cell in a temperature range of -20°C to 65°C.
10.2.3.储存建议 Storage Recommendations
a.短期存放 Short Period Storage
•如果短期存放(不超过 3 个月) 电芯应储存在温度范围为 0°C~45°C，低湿度和不含腐蚀性气体的环境中。
Storage the cell at temperature of 0°C to 45°C (less than 3 months), low humidity and no corrosive gas atmosphere.
b.长期存放 Long Period Storage
•如果长期存放(超过 3 个月)，电池应存储在温度范围为 0°C~25°C，低湿度和不含腐蚀性气体的环境中。
In case of long period storage (more than 3 months), storage the cell at temperature range of 0°C ~ 25°C, low humidity, no corrosive gas atmosphere.
•不要让电池承担任何压力。
Don't put any stress on the battery.

11.质量保证 Warranty

自出货之日起，电芯的保质期限依合同而定，但是在此期限内，如果非远阳公司的制程原因而是客户的误用造成的电芯质量问题，远阳公司不承诺免费更换。
The warranty period of cell is made according to business contract. However, even though the problemoccurs within this period, FLYOUNG won't replace a new cell for free as long as the problem is not due to the failure of FLYOUNG manufacturing process or is due to customer's abuse or misuse.
＞远阳公司对违反安全守则操作所产生的问题不承担任何责任。
FLYOUNG will not be responsible for trouble occurred by handling outside of the precautions in instructions.
＞远阳公司对与电路、 电芯组、充电器搭配使用所产生的问题不承担任何责任。
FLYOUNG will not be responsible for trouble occurred by matching electric circuit, cell pack and charger.
＞出货后客户在产品组装过程中产生的不良电池不在远阳公司质量保证的范围之列。
FLYOUNG will be exempt from warrantee any defect cells during assembling after acceptance.

12. 附录 Appendix

前言: 文件“锂离子充电电池操作指示及注意事项”仅适用于远阳公司生产的电池。

Preface:This document of ‘Polymer lithium ion rechargeable battery operating instructions and matters needing attention ’shall be applied to the battery cells manufactured by FLYOUNG company .

声明 一：

客户若需要将电池用于超出文件规定以外的设备，或在文件规定以外的使用条件下使用电芯，应事先联系远阳公司，因为需要进行特定的实验测试以核实电芯在该使用条件下的性能及安全性。

Note(1):

The customer is requested to contact FLYOUNG company in advance, if and when the customer needs otheappli cations or operating conditions than those described in this document. Additional experiment a tion may be required to verify performance and safety under such conditions.

声明 二：

对于在超出文件规定以外的条件下使用电芯而造成的任何意外事故远阳概不负责。

Note(2):

FLYOUNG company will take no responsibility for any accident when the cell is used under other conditions than those described in this Document.

声明 三：

如有必要，远阳公司会以书面形式告之客户有关正确操作使用电池的改进措施。

Note(3):

FLYOUNG company will inform, in a written form, the customer of improvement(s) regarding proper use and handing of the if it is deemed necessary

声明 四：

规格书所未包含的其它条款由双方协议解决。

Note(4):

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