

	东莞市浩博光电科技有限公司	DOC NO.: <u>PS-0005-A1003-551430</u> REV.: <u>A</u> DATE: <u>2020/09 /25</u>
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Li-ion Battery Specification

聚合物锂离子电池规格书

Model/型号: (551430-2P 420mAh)

Prepared by 编制	Checked by 审核	Approved by 批准

Customer Name 客户名称	
Customer Material No. 客户料号	
File No. 文件编号	
Date/日期	

Note（注意）：

1. Kindly please sign specification back to us, if the sample has been approved.

如果样品已确认，请回签规格书给我司。

2. Kindly please contact us as soon as possible if the sample has not been approved. Thanks!

如果样品未确认，请尽快与我司联系，谢谢！



DATE: 2020/09 /25

修改记录

[illegible]



Contents/目 录

1.Scope/适用范围	4
2.Product configuration/产品配置	4
3.Product Photo/产品图片	4
4.Product Specification/产品规格	5
5.Product Performance/产品性能	6
6.PCM Specification/保护板规格	7
7.Storage and Transportation//存储和运输	7
8.Use Attentions/使用注意事项	8
9.Period of Warranty/保质期	8
10.Note/注释	8

1. Scope/适用范围

This specification is applied to Polymer 2P Manufactured by Hoppt .

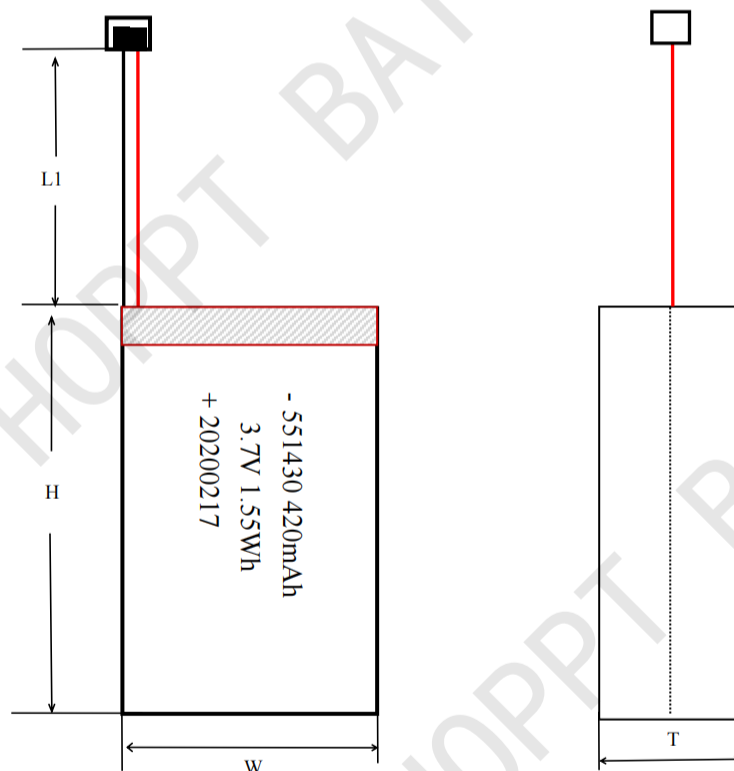
本规格书适用于浩博生产的聚合物 2P 电池。

2. Product Configuration/产品配置

No./序号	Item/项目	SPEC/规格	Remark/备注
1	聚合物电芯	551430-210mAh	2CELL
2	插头线	JST-SH1.0-2P 反向 UL1571-28AWG	N/A
3	保护板	1S-2A	1CELL

3. Product Photo/产品图片

标贴内容



ITEM	尺寸 (mm)
H	Max. 32
W	Max. 15
T	Max. 11.40
L1	30±3

4. Product Specification/产品规格

Table 1 (表 1):

No. 序号	Items/项目	Rated Performance/额定性能	Remarks/备注
1	Nominal Capacity/标称容量	420mAh	Discharge at 0.2C after standard charge fully. 按 0.2C 标准完全放电。
2	Minimum Capacity/最小容量	420mAh	
3	Nominal Voltage/标称电压	3.7V	
4	End-of-Voltage at end of Discharge 放电截止电压	2.5V	
5	End-of-Charging Voltage/ 充电截止电压	4.2V	
6	AC Impedance /电池阻抗	≤300 mΩ	AC 1KHz
7	Standard Charge/标准充电	0.2C CC/CV→4.2V 0.05C cutoff	Charge time/充电时间: Approx 6.0h.
8	Standard Discharge/标准放电	0.2C CC→2.5V cutoff	
9	Fast Charge/快速充电	0.5C CC/CV →0.05C cutoff	Charge time/充电时间: Approx 2.5h.
10	Fast Discharge/快速放电	0.5C CC→2.5V cutoff	
11	Maximum Continuous Charge Current/最大持续充电电流	420 mA	
12	Maximum Continuous Discharge Current/ 最大持续放电电流	510 mA	
13	Operation Temperature Range 工作温度范围	Charge 充电: 0~45℃	Humidity /湿度 60±25%
		Discharge 放电: -20~60℃	
14	Storage T/H Range 存储温、湿度范围	-25~50℃/60±25%	
15	Weigh/重量	Approx/大约 4.2g	
16	Product Dimension/ 产品尺寸	长度 Length: 32mm(MAX)	Initial dimension 初始尺寸 (* 按标准正常循环后电池 厚度膨胀率 ≤ 5% 标准厚度)
		宽度 Width: 14.5mm(MAX)	
		厚度 Thickness: 11.2mm(MAX)	
		导线外露: 30±3mm	

5. Product Performance/产品性能

5.1 Standard Testing Conditions/标准测试环境

Temperature/温度: $25 \pm 5^{\circ}\text{C}$

Humidity Range /湿度: 25 ~ 85% 范围内进行。

5.2 Test method and request/检测方法 with 要求

No. 序号	Items /项 目	Test Method /检测方法	Request/要 求
1	Appearance 外 观	By sight 目测	No obvious flaw、blot、scratch distorted, tympanous. 无凹陷、划痕、污渍、变形、鼓胀等缺陷。
2	Open-Circuit Voltage 开路电压	The open-circuit voltage shall be measured within 24 hours after standard charge. 开路电压是在标准充电后 24 小时内测量。	$\geq 3.8\text{V}$
3	Impedance 内阻	AC Impedance Resistance 交流阻抗电阻	$\leq 300\text{ m}\Omega$
4	Nominal Capacity 标称容量	0.2C ₅ A discharge 0.2C放电容量	Discharge Capacity/放电容量 $\geq 410\text{mAh}$
5	Cycle Life 循环寿命 (0.2C)	Test condition: temperature: 测试条件: 温度: $23 \pm 5^{\circ}\text{C}$ First step: 0.2C CC/CV to 4.2V 第 1 步: 0.2C 恒流恒压充电至 4.2V Second step: Static 10 min 第 2 步: 静置 10 分钟 Third step: 0.2C CC to 2.7V. 第 3 步: 0.2C 恒流放电至 2.7V Fourth step: Static 10 min 第 4 步: 静置 10 分钟 Fifth step: Repeat first step to fourth step 300cycles, record 300cycle then compare with first cycle value. 第 5 步: 重复第 1 步至第 4 步 300 次, 记录 300 周循环后容量与第 1 次循环容量的比值。 Sixth step: end 第 6 步: 结束	Higher than 80% of the Initial Capacities of the Cell 高于 80% 的电池初始容量

5.3 Safety Performance/安全性能

Hoppt product's safety performance is confirmed to UL1642 standard.

浩博产品安全性能遵循 UL1642 标准。

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5.4 Mechanical characteristics/机械性能

No. 序号	Items 项目	Test Method and Condition 测试方法和条件	Criteria 标准
1	Vibration test 振动测试	Battery(Shipment) on the three Mutually perpendicular direction, use 0.8mm amplitude,10~55Hz vibrate 90mins. 电池(出货)在三个相互垂直方向以 0.8mm 振幅,频率为 10~55Hz 振动 90 分钟.	No leakage, capacity Recovery rate:≥ 90% (storage 3h) 无泄漏,容量恢复率: ≥ 90%(放置 3h)
2	Drop test 跌落测试	Battery drop from 1m to board 2 times. 电池由 1 米高跌落至木板 2 次.	No explode, no fire, no leakage. 不爆炸,不起火,无泄漏.

6PCM parameter PCM 参数

No.序号	ITEM 项目	Criteria 标准
1	Over-charge Protection voltage 过充保护电压	4.28±0.05V/CELL
2	Over-discharge Protection voltage 过放保护电压	2.4±0.1V/CELL
3	Over current Protection current 过流保护电流	2-5A
4	Inner resistance 内阻	≤100m Ω
5	Normal current consumption	≤30 μ A

7. Storage and Transportation/储存和运输

7.1 Storage/储存:

- Li-ion battery should be stored in a cool, dry and well-ventilated area, and should be far from the fire and the high temperature.
锂离子电池组应储存在阴凉、干燥、通风良好的地方。并应远离火和高温。
- The best capacity in storage is 30%-50% (voltage between 3.6 -3.9V).
保持储容量最好是在 30%-50% （在 3.6-3.9V 之间的电压）。
- The battery should be stored within the proper temperature and humidity range specified by specification.
电池应储存在产品规格书规定的温度和湿度范围内。
- If stored for more than six months or longer, the battery will be suggested to charge.
如果电池存放时间超过六个月以上或更长，建议对电池进行充电。

7.2 Transportation/运输:

- Forbidden to mix battery with other goods. /禁止将电池与其他货物混装。
- Forbidden to immerse battery into liquid such as water or soak it with liquid. /禁止将电池浸入水中或弄湿。
- Forbidden to deposit battery over 6 layers or upside-down. /禁止电池堆放超过 6 层或倒立。
- The highest temperature during battery transportation should be lower than 65°C. /电池运输过程中最高温度应低于 65°C 。

8. Use Attentions/使用注意事项

8.1 Attentions /注意事项



- Avoid insolation or dropping into fire. /避免暴晒或投入火中。
- Avoid shorting the battery. /避免将电池短路。
- Avoid excessive physical shock or vibration. /避免电池过度冲击或振动。
- Don't disassemble or deform the battery. /不得拆卸或扭曲电池
- Don't immerse in water. /不得浸入水中
- Don't use the battery mixed with other model or manufacturer batteries.
不要与其他型号或品牌的电池混合使用。
- Battery usage by children should be supervised. /儿童使用电池应受到监督。

8.2 Charge/充电

- Battery charge should be used appropriate charger. /电池充电必须使用专用的充电器。
- Forbidden to use modified or damaged charger. /禁止使用改装或已损坏的充电器。
- Forbidden to charge over 24 hours for battery. /禁止充电超过 24 小时。
- Charge current: can not surpass the biggest charge current specified by battery specification.
充电电流：不能超过在规格书规定的最大充电电流。
- Charge voltage: can not surpass the highest charge voltage specified by battery specification.
充电电压：不能超过在规格书规定的最高电压。
- Charge temperature: The battery should be charged within proper temperature range specified in specification.
充电温度：电池必须在规格书规定的环境温度范围内进行充电。
- Forbidden of reverse charge: The battery should be connected correctly, the polarity has to be confirmed before wiring in case of the battery is connected improperly, the battery can not be charge. Simultaneously, the reverse charge may cause damaging to the battery which may lead to degradation of battery performance and damage the battery safety, and could cause heat generation or leakage.
禁止反充：电池应该当正确连接，配线前就要确认极性，万一连接不正确，电池将不能充电。同时，反充可能会损坏电池，会导致电池性能下降，破坏电池安全性，还可能导致发热或泄漏。

8.3 Discharge/放电：

- Discharge current: can not surpass the biggest discharge current specified by battery specification.
放电电流：不能超过在规格书规定的最大放电电流。
- Discharge temperature: The battery should be discharged within proper temperature range specified by specification.
放电温度：电池必须在规格书规定的环境温度范围内进行放电。
- Over-discharge: it should be noted that the battery would be at over-discharged state by its self-self-discharge characteristics in case the battery is not used for long time. To prevent over-discharge, the battery shall be charged periodically to maintain between 3.6V and 3.9V/cell.
过放：需要注意的是，在电池长期未使用期间，它可能会因其自放电特性而处于某种过放电状态。为防止过放电的发生，电池应定期充电，将其电压维持在 3.6V 到 3.9V 之间每只。

8.4 Disposal/处置：

The disposal of battery should meet the local law.

电池的处理应当符合当地法律。

9. Warranty Period /保质期

Unless special declaration in product specification, the warranty period of battery is 12 months from the day of battery manufacture.

除在产品规格书中特别声明，电池保质期自制造之日起 12 个月内有效。

10. Note/注释

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

任何其他不包括在本规范的项目，应由双方协商决定。