

力源电池科技（深圳）有限公司
Liyuan Battery Technology (ShenZhen) Co., Ltd
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Checked by 审核: zhongmiaoxin钟妙新

Approved by 批准: maxuj un马旭军

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Prepared: 2020年 06月 23日	Approved by 批准	Checked by 审核	Prepared by 制定
Amended: 年 月 日	maxujun 马旭军	ZHONGMIAOXIN 钟妙新	zoulujun 邹陆军
Approved: 2020年 06月 23日			

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1、Scope 范围

This document describes the Product Specification of the CR123A Battery supplied by
Liyuan Battery Technology (ShenZhen) Co.,Ltd

本产品适用于力源电池科技（深圳）有限公司生产的CR123A电池。

2、Model: CR123A 产品型号: CR123A

3、Specification (one year) 规格（1年内）

No. 序号	Item 项目		Specifications 规格
1	System 体系		Li—Manganese dioxide/Organic Electrolyte
2	Rated voltage 额定电压		3.0V
3	Off-load voltage 开路电压		3.05~3.40V
4	Internal resistance (within one month of shipment) was measured at 25 ° C ±5 and using Lanqi BK-600A internal resistance meter (measuring the metal of the anode and cathode in contact with the watch pen) 内阻（出货一个月内）在25℃±5、使用蓝奇BK-600A内阻仪条件下测得（表笔接触正负极金属测量）		≤600mΩ
5	Closed circuit voltage 负载电压（3.9Ω, 0.5 second）		≥2.60V
6	Rated capacity 标称容量		
	20mA discharge 20mA放电		1400mAh
	1mA discharge 1mA放电		1600mAh
	Discharge end-point voltage 放电终止电压		2.0V
7	Battery weight 电池重量		16.0±0.5g
8	Operating temperature 工作温度范围		- 40℃ ~ + 70℃*
9	Storage temperature 贮存温度		10℃ ~ 35℃
10	Battery dimension 电池尺寸	Height 高度	34.0±0.5mm
		Diameter 直径	16.5±0.3mm

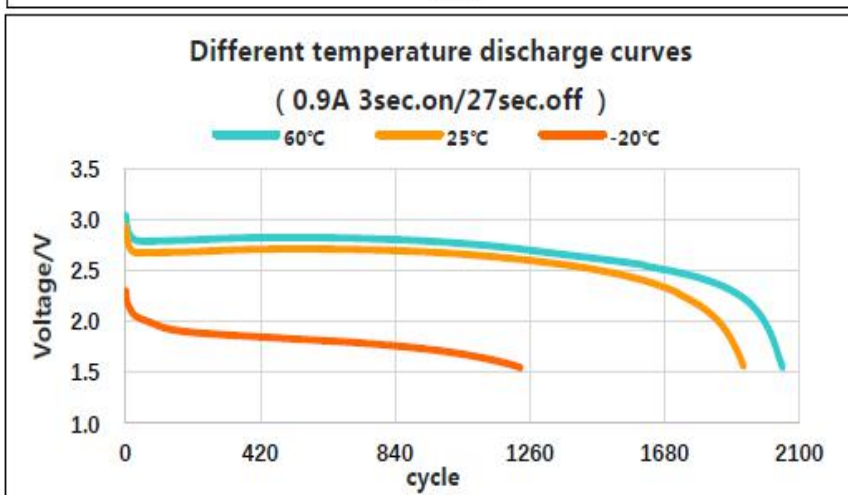
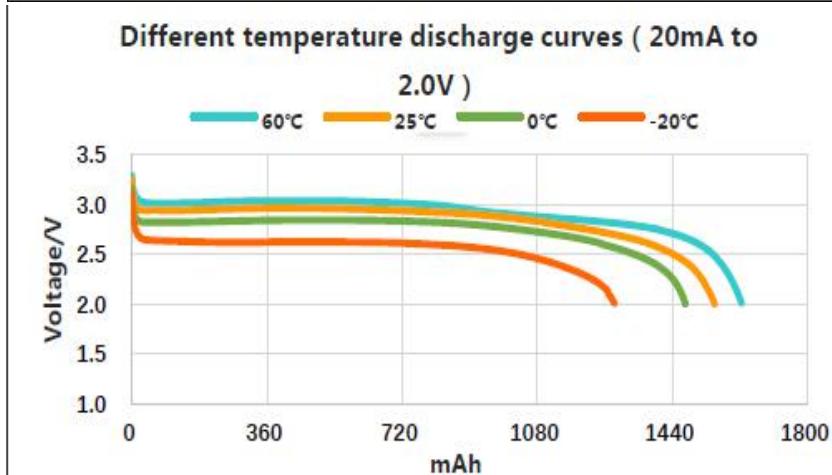
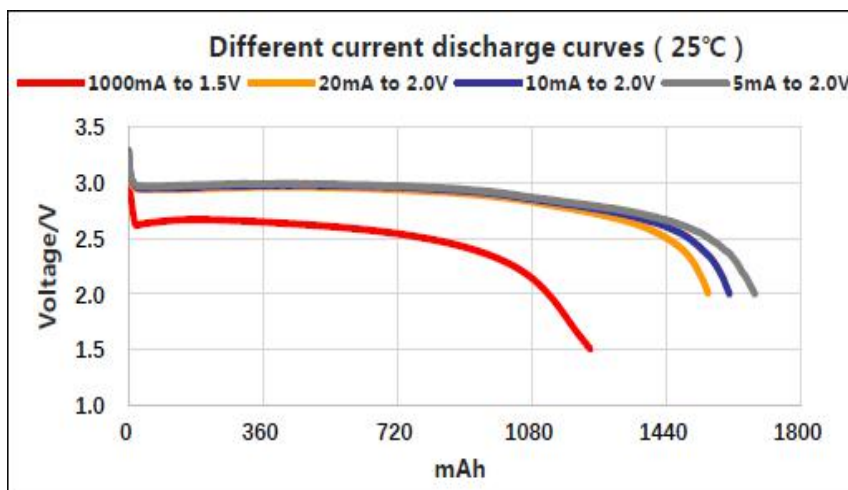
*Please consult Liyuan for use below and above -20℃ to 60℃.

*建议工作温度为-20℃~60℃，如工作温度超出-20℃~60℃，请咨询力源。

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4、Discharge Characteristic 放电曲线



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5、Battery Performance Criteria 电池性能标准

5.1、Visual inspection 外观检查

There shall be no such defect as distortion, flaw, and leakage, which may adversely affect commercial value of the battery.

不允许有任何影响电芯性能的外观缺陷，诸如变形、破损、漏液等。

5.2、Standard environmental test condition 标准测试环境

Unless otherwise specified, all tests in this Product Specification are conducted at below condition:

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

Humidity: 45%~75%

Atmospheric pressure: 86~106kpa

测试电池必须是本公司出厂时间不超过一个月的新电，且电池未进行放电测试。

除非特别说明，本标准书中所有测试均在以下环境条件下进行：

温度： $25\pm 5^{\circ}\text{C}$

湿度：45%~75%

大气压力：86~106kpa

5.3、Resistance leakage 耐漏液性能

Test batteries shall be stored for 24h at a temperature of (70°C) and Humidity ($60\pm 15\%$), followed by storage for at least 8h at ambient temperature.

Criteria: No electrolyte leakage, explosion or fire.

70℃高温24小时后在常温 $23\pm 3^{\circ}\text{C}$ 、60±15%状态下将电池放置8小时进行目视检验。 判

定标准：无漏液、无爆炸、无着火。

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5.4、Electrical Characteristics 电气安全性能

No. 序号	Items 项目	Test Method and Condition 测试方法	Criteria 判定标准
1	External short circuit 外部短路	The test batteries subjected to a short-circuit condition with a total external resistance of less than 0.1Ω, This short-circuit condition is continued for at least 1h. 电池正、负极直接短接，外电路总电阻小于0.1Ω，持续1h。	No Explosion 无爆炸 No Fire 无着火
2	Free fall 自由跌落	Undischarged test batteries shall be dropped from a height of 1m onto a concrete surface.Each test battery shall be dropped six times, The test batteries shall be stored for 1h afterwards. 未放过电的电池从1米高处沿x、y、z轴三个方向各跌落二次，然后放置1h。	No Venting 无泄放 No Explosion 无爆炸 No Fire 无着火
3	High temperature 高温	Test batteries shall be stored for 5h at a temperature of 100℃, followed by storage for 8h at ambient temperature. 被试电池在100℃置放5h，常温置放8h。	No Venting 无泄放 No Explosion 无爆炸 No Fire 无着火
4	Thermal shock 热冲击	Test batteries shall be stored for at least 6h at test temperature of 75℃, followed by storage for at least 6h at a test temperature of -40℃, The maximum time for transfer to each temperature shall be 30min. Each test battery shall undergo this procedure 10 times. This is then followed by storage for at least 24h at ambient temperature. 被检电池在75℃环境下至少放置6h，再在-40℃环境下至少放置6h，不同温度转换时间应不超过30min。每个被检电池进行10个循环后，在环境温度下至少放置24h。	No Venting 无泄放 No Explosion 无爆炸 No Fire 无着火 No Leakage 无漏液

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5.5、Mechanical characteristic 机械性能

No. 序号	Items 项目	Test Method and Condition 测试方法	Criteria 判定标准
1	Vibration Test 振动测试	<p>Fixed the undischarged battery to vibration table and subjected to vibration cycling that the frequency is to be varied at the rate of 1Hz per minute between 10Hz and 55Hz, the excursion of the vibration is 1.6mm. The battery shall be vibrated for 30 minutes per axis of XYZ axes.</p> <p>将未放电的电芯固定在振动台上，沿X、Y、Z三个方向各振动30分钟，振幅1.6mm，振动频率为10Hz~55Hz每分钟变化1Hz。</p>	<p>No Venting 无泄放</p> <p>No Explosion 无爆炸</p> <p>No Fire 无着火</p> <p>No Leakage 无漏液</p>
2	Crush Test 挤压测试	<p>A battery is to be crushed between two flat parallel surface.The force for the crushing is to be applied by a hydraulic ram with a 32 mm diameter piston.The crushing is to be continued until a pressure reading of 17.2Mpa is reached on the hydraulic ram, applied force of 13KN.Once the maximum pressure has been obtained it is to be released.</p> <p>将电芯放在两个平行的平面之间，要求传力棒的直径为32mm，外加在这个传力棒上的压强为17.2Mpa，当压力达到13KN时就释放压力。</p>	<p>No Explosion 无爆炸</p> <p>No Fire 无着火</p>
3	Shock Test 冲击测试	<p>Force each shock the cell is to be accelerated in such a manner that during the initial 3 milliseconds the minimum average is 75g, the peak acceleration shall be between 125 and 175g.The shocks are to be applied in each of three mutually perpendicular directions.Each shock is to be applied in a direction normal to the face of the cell.Cell shall be tested at a temperature of 20±5℃.</p> <p>在 20±5℃的条件下，将待测的电芯固定在冲击振动仪上，在最初的3毫秒内，平均加速度为75g，直到最大加速度到达125~175g之间，这个振动测试是在三个互相垂直的三个方向，振动方向必须与电芯的最大面一致。</p>	<p>No Explosion 无爆炸</p> <p>No Fire 无着火</p>

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6、Storage and Others 贮存及其他事项

6.1、Storage 贮存

Storage Temperature 储存温度: $10^{\circ}\text{C} \sim 35^{\circ}\text{C}$ Store humidity: 储存湿度 0%RH~75%RH

6.2、Others: Any matters that this specification does not cover should be conferred between the customer and Lityuan Battery Technology Co., Ltd.

其他事项: 任何本说明书中未提及的事项, 须经双方协商确定。

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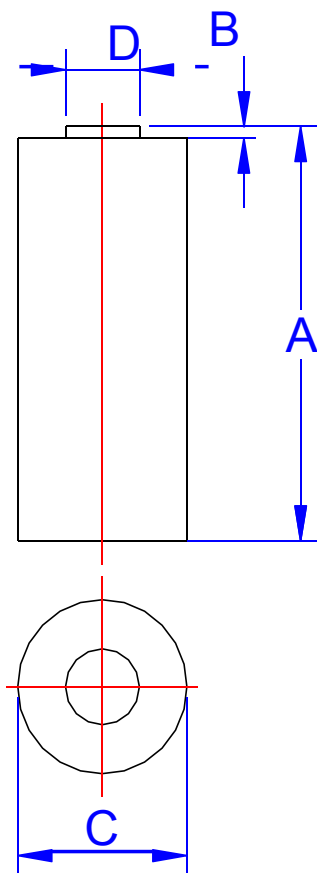
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7、Drawing(all unit mm, not in scale) 外形尺寸图（单位：mm；未按比例）



Items 检测项目	Dimension and Spec. 技术规格	
A	34.0±0.5mm	
B	1.45±0.25mm	
C	16.5±0.3mm	
D	6.3±0.3mm	
Prepared by 制定	Checked by 审核	Approved by 批准
Zou Lujun 邹陆军	Zhong miaoxin 钟妙新	Ma Xujun 马旭军

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8、Appendix 附录

Handling Precautions and Guideline For CR123A Battery

CR123A 电池操作指示及注意事项

Preface

This document of "Handling Precautions and Guideline CR123A Battery" shall be applied to the battery manufactured by Liyuan Battery Technology Co., Ltd.

前言

本文件“CR123A 电池操作指示及注意事项”仅适用于力源电池科技生产的电池。

Note (1) :

声明 (1) :

The customer is requested to contact Liyuan Battery Technology Co., Ltd in advance, if and when the customer needs other applications or operating conditions than those described in this document. Additional experimentation may be required to verify performance and safety under such conditions.

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，应事先联系力源电池科技，因为需要进行特定的试验测试以核实电池在该使用条件下的性能以及安全性。

Note (2) :

声明 (2) :

Liyuan Battery Technology Co., Ltd will not take no responsibility for any accident when the battery is used under other conditions than those described in this Document .

对于在超出文件规定以外的条件下使用电池而造成的任何意外事故，力源电池科技有限公司概不负责。

Note (3) :

声明 (3) :

Liyuan Battery Technology Co., Ltd will inform,in a written form,the customer of improvement(s) regarding proper use and handling of the battery ,if it is deemed necessary.

如有必要，力源电池科技有限公司会以书面形式告知客户有关正确使用使用电池的改进措施。

When used correctly,lithium batteries provide a safe and dependable source of power.However,if they are misused or abused ,leakage,venting or in extreme cases,explosion and /or fire may cause.

正确使用锂电池是安全的，但是如果使用方法不当，可能导致电池泄漏、爆炸或起火。

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8.1 、 Prohibition of battery immersion into liquid such as water;The battery shall never be soaked with liquids such as water,seawater,drinks such as soft drinks,juices,coffee or others.

— 勿将电池投入液体中，如水；不得将电池浸泡液体，如淡水、海水、饮料（果汁、咖啡等）。

8.2 、 Prohibition of dumping of batteries into fire;Never incinerate nor dispose the batteries in fire.These may cause firing of the batteries ,which is very dangerous and is prohibited.

— 勿将电池投入火中。在任何情况下，不得将燃烧电池或将电池投入火中，否则会引起电池燃烧，这是非常危险的，应绝对禁止。

8.3 、 Dot not insert batteries in reverse.Observe the + and - markings on battery and equipment.

— 勿将正负级接反，注意电池和用电器具上的+和-标志。

8.4 、 Do not short-circuit batteries, When the positive(+) and negative(-) terminals of a battery are connected directly with each other,the battery becomes short-circuited.This can result in venting, leakage,and possibly fire.

— 禁止用导线或其它金属物质将电池正负级短路，电池短路将会导致泄放、漏液和着火。

8.5 、 Prohibition of disassembly Never disassemble the batteries,The disassembling may generate internal short circuit in the battery,which may cause firing,or other problems.

— 在任何情况下不得拆卸电池，拆卸电池可能会导致内部短路、着火及其他问题。

8.6 、 Electrolyte is harmful In case the electrolyte come into contact with the skin,or eyes, physicians shall flush the electrolyte immediately with fresh water and medical advice is to be sought.

— 如果电池漏液后电解液接触到皮肤、眼睛或身体其他部位，应立即用清水冲洗电解液并就医。

8.7 、 Do not charge batteries-Attempting to charge a primary battery may cause internal gas and/or heat generation resulting in venting,explosion and possibly fire.

— 不能给电池充电-试图对CR123A 电池充电会使电池内部产生气体和热量，导致泄放、爆炸并着火。

8.8 、 Do not force discharge batteries.

— 不能强制性地给电池放电。

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8.9 、 Do not allow children to replace batteries without adult supervision, Keep batteries out of the reach of children. In case of ingestion of a battery, seek medical assistance promptly.

— 电池应放在小孩接触不到的地方，如果小孩不小心吞咽电池应立即寻求医疗救助。

8.10 、 Do not mix batteries.

— 禁止与干电池或不同容量、型号、品种电池组合使用。

8.11 、 Prohibition of use of damaged batteries.

The batteries might be damaged during shipping by shock. If any abnormal features of the batteries are found such as damages in a plastic envelop of the battery, deformation of the battery package, smelling of an electrolyte, an electrolyte leakage and others, the batteries shall never be used any more.

The batteries with a smell of the electrolyte or a leakage shall be placed away from fire to avoid firing.

— 禁止使用已经损坏的电池。

电池在运输过程中可能因撞击等原因而损坏，若发现电池有任何异常特征，如电池包装损坏，外壳破损，闻到电解液气体，电解液泄漏等，该电池不得使用。

有电解液泄漏或散发电解液气味的电池应远离火源以避免着火。

8.12 、 Exhausted batteries should be immediately removed from equipment and dispose of.

— 耗尽电能的电池应立即从用电器中取出。

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Customer Inquiry产品规格需求

Model: CR123A

Version : A

the customer is requested to write down your information and contact LiyuanBattery Technology Co., Ltd in advance,if and when the customer needs applications or operating conditions other than those described in this documen.Liyuan Battery Technology Co., Ltd could design and build such products according to your special request.

我司也可以根据客户的特殊要求而设计、制造符合要求的产品，如果贵司有本规格书描述之外的性能要求，请您写在下面并回签给我司。

No. 序号	Special Request 特殊要求	Criteria 规格
1		
2		
3		
4		
5		
6		
7		
8		

Company Name:

Signature:

Data: