

产品规格书

PRODUCT SPECIFICATION

产品名称 Product Name: 纽扣式锂氟化碳电池

产品型号 Product Model: BR2032

产品容量 Product Capacity: 220mAh

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一、适用范围 Scope

本规格书适用于北京元坤国际科技有限公司生产的 3V BR2032 纽扣式锂氟化碳电池。符合 GB/T16483-2008, UN38.3 等。

This specification is applicable to 3V BR2032 button type Lithium carbon fluoride battery produced by Beijing Yuankun International Technology Co., Ltd. Meeting specifications of GB/T16483-2008、UN38.3.

二、Features 特性

1、高比能量。锂氟化碳电池体系能量密度高达 2400Wh/kg, 是一次电池中理论比能量最大的电池体系。

High specific energy. The energy density of the Lithium carbon fluoride battery system is as high as 2400Wh/kg, which is the battery system with the largest theoretical specific energy in the primary battery.

2、优异的耐高温性能。可在 125℃上限贮存温度存放 1h, 恢复至室温后可正常使用, 满足 TPMS 的贮存温度要求。

The excellent heat resistance, it can be stored at 125 maximum storage temperature for 1 hour, After returning to room temperature, it can be used normally and meet the storage temperature requirements of TPM.

3、良好的低温性能。在-40℃下, 标准电阻输出性能优于常规电池。

The great low temperature performance, at -40, the standard resistance output performance is better than the conventional battery

4、安全环保, 电池在生产、使用、报废过程中, 不涉及任何重金属。

Safe and environmentally friendly, no heavy metals are involved in the process of battery production, use, and scrap.

5、电池具有优异的化学稳定性和物理稳定性, 经实验证明, 在短路、挤压、碰撞、过放、高温等误用情况下仍有很高的安全性。

Super safety performance, the excellent chemical and physical stability of fluorocarbon ensures the safety of the Li-CF_x battery. It is still very safety in the case of short circuit, extrusion, collision,

over discharge and high temperature.

6、超长的贮存寿命，锂氟化碳电池无论是在使用过程中还是正常储存下，其自放电率很低，小于 1%，保存寿命可达 10 年以上。

Long storage life, Li-CF_x battery is very stable, no matter in the process of using or in the condition of normal storage, its self-discharge rate is lower than 1%, its shelf life is more than 10 years.

三、Product basic information 产品基本信息

电化学体系 Electrochemical Systems		锂-氟化碳/有机电解质	
标称电压 Nominal Voltage		3V	
标称容量 Nominal Capacity (20℃时标准电阻 30kΩ 放电至 2V)		220mAh	
贮存温度范围 Storage Temperature Range		-40~125℃	
使用温度范围 Operating Temperature Range		-40~125℃	
尺寸规格 Dimensions		直径 (A)	20.0(-0.3)mm
		高度 (B)	3.2(-0.3)mm
标准重量 Standard Weight		2.9g	
外观 Appearance	外观应光洁，标志清晰，无变形、锈蚀、漏液。 The appearance should be smooth and clean, with clear signs, and no deformation, rust, or leakage.		
最小平均放电时间 Minimum average discharge time (15kΩ)	Initial period (within 60 days after production) 初始期 (生产后 60 天内)	1040h	
	贮存 12 个月后 After storage for 12 months	1020h	
Open-circuit voltage 开路电压	Initial period (within 60 days after production) 初始期 (生产后 60 天内)	≥3.20V	
	贮存 12 个月后 After storage for 12 months	≥3.20V	

闭路电压 Closed-circuit voltage (负载电阻 15kΩ)	初始期 (生产后 60 天内) Initial period (within 60 days after production)	$\geq 3.20V$
	贮存 12 个月后 After storage for 12 months	$\geq 3.20V$
耐漏液性 (过放电) The leakage resistance		无漏液 No leakage

四、Test method 试验方法

序号 No	测试项目 ITEM	TEST METHODS 测试方法
1	外形 尺寸 Dimensions	<p>用精度不低于 0.02mm 游标卡尺测量，测量时防止电池短路，卡尺的一端卡头上应贴上一层绝缘材料。</p> <p>Using vernier caliper (accuracy ≥ 0.02) while avoiding short-circuit. One end of the caliper should be coated with an insulating material.</p>
2	开路电压 Open circuit voltage	<p>用精度不低于 0.25%，内阻不小于 1MΩ 万用表测量。</p> <p>Using multimeter (accuracy $\geq 0.25\%$) internal resistance $\geq 1M\Omega$.</p>
3	闭路电压 Closed circuit voltage	<p>测试前电池需在 20±2℃、RH60±15%条件下放置 8 小时以上，再在同样温度下测量。用万用表测量时，每次测量时间不超过 5 秒，避免重复测量，若需再次测量时，时间间隔应在半小时以上。</p> <p>Before the test, the battery should be placed under the condition of 20±2℃、RH60±15% for more than 8 hours, and then measured at the same temperature. Time of short-circuit should be less than 0.5 second and avoid repeated test within half an hour.</p>
4	放电时间 Discharge time	<p>取 9 只电池在 20℃±2℃、RH60%±15%条件下放置 8 小时以上，在相同温湿度条件下用 30kΩ 电阻连续放电至 2.0V 时的平均放电时间。电池应在生产后 60 天内进行，贮存电应在贮存期满后 14 天内进行。</p> <p>Taking nine cells under the condition of 20℃±2℃、RH60%±15% place more than 8 hours, at the same temperature and humidity conditions for 30 kΩ resistance to 2.0 V, the average continuous discharge the battery</p>

		discharge time should be within 60 days after the production, storage electric should be carried out within 14 days after the expiration of the storage
5	高温贮存性能 High temperature storage performance	在 125℃高温箱中贮存 1h, 恢复到常温后, 目视无漏液。 Stored under temperature (125℃) for 1 hours, After returning to normal temperature, there is no leakage visually.
6	耐漏液性 (过放电) Liquid leakage resistance (over discharge)	取 9 只电池, 在 20℃±2℃、RH60%±15%条件下用 30kΩ 电阻连续放电 至 1.2V 时, 目视无漏液。 Take 9 batteries, only under the condition of 20℃±2℃、RH60%±15%, continuous discharge with 30 kΩ resistance to 1.2 V, there is no leakage visually.

五、验收规则 Acceptance regulations

1、交收检验以每次出货数量为一个检查批。

Delivery inspection takes each shipment quantity as an inspection lot

2、交收检验采用 GB2828.1 正常检验一次抽样方案, 检验项目、检查水平 (IL)、接收质量限 (AQL) 按下表规定执行。

The delivery inspection adopts the one-time sampling plan of GB2828.1 normal inspection, and the inspection items, inspection level (IL) and acceptance quality limit (AQL) shall be implemented as specified in the following table.

No 序号	检验项目 Test Item	IL	AQL
1	外形尺寸 Dimensions	I	0.25
2	开路电压 Open circuit voltage		0.25
3	外观与极端 Appearance and electrode	II	0.25

六、警告事项 Warnings

1、严禁吞咽 It is forbidden to swallow

将电池置于远离婴儿和儿童的地方，防止他们吞咽电池。如已吞咽电池，请立即咨询医生。

Keep the battery away from infants and children to prevent them from swallowing. If they have swallowed the battery, consult a doctor immediately

2、严禁充电 It is forbidden to recharge

不能用任何其他电源对该电池进行充电。充电可导致产生气体以及内部短路，从而造成电池变形、泄露、过热、爆炸或起火。

Not being able to charge the battery from any other source can lead to the generation of gases and internal short circuits that can cause the battery to distort, leak, overheat, explode or catch fire.

3、严禁置于明火之中 Do not place in a fire environment

将电池置于明火中会导致锂金属熔化，造成电池爆燃甚至爆炸。

Placing the battery in an open flame will cause the lithium metal to melt, causing the battery to ignite or even explode.

4、严禁拆解电池 Disassembly of batteries is strictly prohibited

不要拆解电池，否则会造成电池密封圈或隔膜纸的损坏，而使电池变形、泄露、过热、爆炸或起火。

Do not disassemble the battery, otherwise it will cause damage to the battery seal ring or diaphragm paper, and make the battery deformation leakage overheating explosion or fire.

5、严禁反向安装电池的正负极 Do not install the positive and negative electrodes of the battery in reverse

不恰当地安装电池会导致电池短路、充电或者强制放电。这会造成电池变形、泄露、过热、爆炸或起火。

Improperly installed batteries can cause them to short-circuit to charge or force them to discharge which can cause them to distort, leak, overheat, explode or catch fire.

6、严禁将电池短路 Do not short circuit the battery

不要将正负极短路。不要将电池和金属物品放在一起携带或保存。否则会导致电池变形、泄露、过热、爆炸或起火。

Do not short-circuit the positive and negative electrodes. Do not carry or store the battery with metal objects or it will cause the battery to distort, leak, overheat, explode or catch fire.

7、严禁将不同的电池一起使用 Do not use different batteries together

由于电池特性不同，将不同的电池一起使用，如不同类型的、新的和旧的或者不同制造商的，可能会导致 电池变形、泄露、过热、爆炸或起火。

Due to different battery characteristics, using different batteries together, such as different types of new and old or different manufacturers, can cause the battery to distort, leak, overheat, explode or catch fire.

8、严禁直接在电池上焊接端子引脚或导线

Do not weld terminal pins or wires directly on the battery

焊接时的加热会导致锂的熔化，或导致电池中的绝缘材料的损坏。这会造成电池变形、泄露、过热、爆炸 或起火。如需焊接，请与达立或专业焊接商联系。

Heating during welding can lead to the melting of lithium or damage to the insulation material in the battery which can cause the battery to be deformed, leaked, overheating, explosion or fire.

七、注意事项 Notes

1、不可严重震动电池，掉落、抛撒或踩踏电池可能会使电池变形、泄露、过热、爆炸或起火。

Do not seriously shake the battery, drop or step on the battery, It may cause the battery to distort, leak, overheat, explode or catch fire

2、安装电池时请小心操作，不要让电池接触到可能会使电池短路的金属物品。

Please be careful when installing the battery, do not let the battery come into contact with metal objects that may short-circuit the battery

3、按照设备的操作说明来选择和使用合适的电池。

Follow the instructions for selecting and using the appropriate battery

4、不要让电池和水接触或放置在潮湿的环境中，否则会使电池生锈，或使电池变形、泄露、过热、爆炸或起火。

Do not let the battery and water contact or placed in a humid environment, or the battery will rust, or deformation of the battery leakage overheating explosion or fire.

5、由于接触不良，电池电压可能低于目标值，因此请保持 2N 以上的接触压力以确保适当的接触电阻。

Battery voltage may be below target due to poor contact, so maintain contact pressure above 2N to ensure proper contact resistance

6、如有其他疑问请向重山光电联系咨询。咨询电话：13508950618

If you have any other questions, please contact ZHONGSHAN EM for consultation .TEL: 13508950618

八、贮存环境 Storage environment

贮存环境应清洁、凉爽、干燥、通风、不能靠近高温高湿处，环境温度在 0℃-30℃，RH 不超过 75%为宜。

The storage environment should be clean, cool, dry and ventilated, not close to the high temperature and high humidity, the ambient temperature is 0-30,RH no more than 75%.

九、标志与包装 Mark and packag

1、喷码 code

如客户有需求可按国际 IEC 标准在电池负极面上喷 2 位码: **, 前位以 0~9 数字表示相应年份, 后位以 1~9 表示 1~9 月份, 0、Y、Z 表示 10~12 月份。

If the customer needs, please spray 2 bits of code on the negative surface of the battery according to the international IEC standard **: The front digit is 0~9 for the corresponding year, the back digit is 1~9 for January ~ September, and 0 Y Z for October ~ December. Different jet code can also be customized.

例: 01	表示 2020 年 1 月生产;	00	表示 2020 年 10 月生产;
9Y	表示 2019 年 11 月生产;	9Z	表示 2019 年 12 月生产

不同喷码方式也可定制。

2、包装 Packag

每 20 粒电池置入一个 PVC 托盘内, 然后 25 盘 (共 500 粒电池) 用透明膜封装, 6 个小包装装入内箱, 2 个内箱 (共 6000 粒电池) 装入一个外箱。

Every 20 batteries are put into a PVC tray, then 25 plates (a total of 500 batteries) are packaged with transparent film, 6 small packages are packed into the inner box, and 2 inner boxes (a total of 6000 batteries) are packed into an outer box.

*如需加工成焊脚电池, 包装将根据产品具体形状调整。

* if the battery needs to be processed into welded foot, the packaging will be adjusted according to the specific shape of the product

随着产品技术更新、技术参数调整, 规格书会随时更新, 请及时与重山光电联系获取最新版规格书。

As the technical parameters of the product are updated and adjusted, the specification will be updated at any time. Please contact ZHONGSHAN EM for the latest version of the specification.