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东莞市东赞锂能源科技有限公司

Dongzan Lithium Energy Technology Co.,LTD (DongGuan)

锂-二氧化锰扣式一次电池

Lithium - Manganese dioxide single-use button batteries

产品承认书

Product Commitment Letter

电池型号: CR2032

Battery Model: CR2032

客户确认:
Customer
confirmation: _____

日期:
Date: _____

制 作:
Product: _____

审核:
Auditor: _____

制造商: 东莞市东赞锂能源科技有限公司

Manufacturer: DongGuan Dongzan Lithium Energy Technology Co.,Ltd

地 址: 广东省东莞市厚街镇汀山工业区

Address: Tingshang Industrial Zone,Houjie Town,DongGuan City,Guangdong

Tel: 86-0769-8588 0399/8581 6119

Fax: 86-0769-8583 9503

Heep: www.fantedc.com

E-Mail: fantedc@163.com

P C : 523943

锂锰扣式电池产品承认书

Lithium Manganese Button Batteries Product Commitment Letter

1.目的Purpose:

1.1对东赞锂能源科技有限公司出品的锂锰电池的产品规格、测试方法进行规范，避免因测试条件、方法的不同引起偏差。

1.1 To standardize the product specifications and test methods of lithium manganese batteries produced by Dongzan Lithium Energy Technology Co., LTD., to avoid deviation caused by different test conditions and methods.

1.2指导客户正确选择和使用我公司电池。

1.2 To guide customers choose and use our batteries correctly.

产品类别：3V锂锰扣式电池

产品型号：CR2032

Product model: CR2032

2.技术参数Technical specification:

| 项目Project | 单位Units | 参数Parameters | 条件Condition |
|---|--------------------|----------------------------|---|
| 公称电压 Nominal Voltage | V | 3.0 | 标准条件下，单体电池 Under standard conditions, a single cell |
| 公称容量 Nominal Capacity | mAh | 210 | 标准条件下，负载15K Ω 电阻连续放电至终止电压2.0V时的放电容量。 Discharge capacity of a 30K Ω resistor loaded with continuous discharge to a termination voltage of 2.0V under standard conditions. |
| 瞬时短路电流 Transient short-circuit Currents* | mA | ≥ 300 | 时间 ≤ 0.5 秒 Time ≤ 0.5 second |
| 开路电压 Open-circuit voltage | V | ≥ 3.15 | 标准条件下，单个电池 Under standard conditions, a single cell |
| 公称电流 Nominal Current | MA | 0.2 | 标准条件下，单个电池 Under standard conditions, a single cell |
| 最大脉冲电流 Maximum surge Current | mA | 10 | 标准条件下，单个电池 Under standard conditions, a single cell |
| 最大连续放电电流 Maximum continuous discharge Current* | mA | 0.5 | 标准条件下，单个电池 Under standard conditions, a single cell |
| 工作温度 Working temperature | $^{\circ}\text{C}$ | - 20—60 $^{\circ}\text{C}$ | |

| | | | |
|---------------------------|---------------------------------|------------------|--|
| 贮存条件 Storage condition | 标准条件下 Under standard conditions | | |
| 标准重量 Standard weight | g | 约3.0 approx. 3.0 | 标准条件下，单个电池 Under standard conditions, a single cell |

注： 1.最大脉冲电流指在23℃环境下,放电深度40%的电池接上负载,15秒后,电池的负载

电压2.0V所对应的最大电流.

Remark: 1. The maximum surge current refers to the maximum current corresponding to the load voltage of 2.0V of the battery after 15 seconds when the battery with 40% discharge depth is connected to the load at 23°C.

2. 最大连续放电电流在23℃的环境下,将电池用恒定电流持续放电至2.0V,获得标称容量的50%所对应的最大放电电流.

2. Maximum continuous discharge current at 23°C, the battery was continuously discharged to 2.0V with a constant current to obtain the maximum discharge current corresponding to 50% of the standard capacity.

3、标准条件：环境温度 $20\pm 2^{\circ}\text{C}$ ，相对湿度为35-75%RH。

3. Standard condition: The environment temperature is $20\pm 2^{\circ}\text{C}$ and the relative humidity is 35-75%RH.

3、试验方法及检验标准 Test methods and inspection standards

| 检验项目 Inspection items | 测试方法 Test methods | 检验标准 Inspection standards |
|--|--|--|
| 外形尺寸 Physical dimension | 用精确度不低于0.02mm，精密度应不低于最后一位有效数值的50%，的游标卡尺或厚度尺测量，测试时应防止电池短路 With accuracy of not less than 0.02 mm, precision should not be less than 50% of the last effective value of the vernier caliper or thickness ruler measurement, test should prevent short circuit of the battery. | 直径 (Dia): 20.0 (+0.00 -0.20) mm |
| | | 高度 (H): 3.2 (+0.02-0.15) mm |
| 开路电压 Open-circuit voltage | 测量仪表的精确度不低于0.25%,精密度应不低于最后一位有效数值的50%，内阻应不小于于1MΩ The accuracy of the measuring instrument shall not be less than 0.25%, the precision shall not be less than 50% of the last valid value, and the internal resistance shall not be less than 1MΩ. | $\geq 3.15V$ |
| 瞬时短路电流 Transient short-circuit Currents | 测量仪表的精确度不低于0.25%,精密度应不低于最后一位有效数值的50%，内阻应不小于于1MΩ,每次测试时间不超过0.5秒 The accuracy of the measuring instrument shall not be less than 0.25%, the precision shall not be less than 50% of the last valid value, and the internal resistance shall not be less than 1MΩ. And each test should not take more than 0.5 seconds. | $\geq 300 \text{ mA}$ |
| 外观Appearance | 目测Eyeballing | 外观应整洁、标志清晰、无变形、无锈蚀、无漏液；(不良比率小于或等于0.5%) The appearance should be clean, marked clearly, no deformation, no rust, no leakage; (Adverse rate less than 0.5%) |
| | 1、采用恒流恒阻放电仪器，电阻值精度在0.5%以内； Using constant current and constant resistance discharge instrument, the precision of resistance | |

| | | |
|--|--|---------------|
| 放电容量 Discharge capacity | value is less than 0.5%; 2、放电应在电池生产后24小时-30天内进行; Discharge should be carried out within 24 hours to 30 days after battery production; 3、负载15KΩ电阻连续放电至终止电压2.0V时的放电容量 Loading 15KΩ electric resistance continuous when discharge capacity to termination voltage 2.0V。 | 210±3%(mAh) |
| 高温耐漏液 High temperature leakage resistance | 在60°C的条件下贮存30天 Store at 60°C condition for 30 days | 无漏液No leakage |
| 过放电耐漏液 Over-discharge leakage resistance | 在电池终止电压达到2.0V后, 持续放电5小时 After the battery termination voltage reaches 2.0V, continue discharging for 5 hours. | 无漏液No leakage |

注：1、除非特别说明，上述所有测试都在环境温度 $20\pm 2^{\circ}\text{C}$ ，相对湿度为35-75%RH的标准条件下进行；

Remarque: 1. Unless special note, all the above tests are performed under standard temperature of $20\pm 2^{\circ}\text{C}$ and relative humidity of 35-75%RH.

2、每项容量试验的样品数为9只，当平均放电容量不低于表中的标准值并且低于标准值80%的电池数不大于1时，判定电池容量合格，若以上结果有一项不合格，可以重复再做一次测试；如果第二次检验的平均值等于或大于规定值，并且放电时间小于规定值之80%的电池数不大于1，则认为电池的放电容量符合要求；如果第二次检验的平均值小于规定值，或放电时间小于规定值之80%的电池数大于1，则认为电池的放电容量不符合要求。

2. The number of samples for each capacity test is 9 pcs. When the average discharge capacity is not less than the standard value in the table and the number of batteries less than 80% of the standard value is not more than 1, the battery capacity is judged to be qualified. If any of the above results fail, you can repeat the test again. If the average value of the second test is equal to or greater than the specified value, and the number of batteries discharging time less than 80% of the specified value is not greater than 1, the discharge capacity of the battery is considered to meet the requirements. If the average value of the second test is less than the specified value, or the number of batteries whose discharge time is less than 80% of the specified value is greater than 1, it is considered that the discharge capacity of the battery does not meet the requirements.

3. 除上述测试方法外，为满足客户的其它特殊要求，我们亦会相应采取其它特殊测试方法。
3.Except the above test methods, we will also adopt other special test methods to meet our customer's other special requirements.

4.包装（工业包装）Packing(industrial packing)

| | | | |
|------------------|------|--|-------------|
| 每盘数量pcs per tray | 25 | 纸箱外形尺寸 master carton dimension: mm | 277*277*250 |
| 每包数量pcs per tray | 300 | 包装箱毛重 Gross weight per carton:kg | 19.6 |
| 每箱数量pcs per tray | 6000 | 净重 Net weight per carton: kg | 18.1 |

5.环保要求 Environmental requirements

本产品不含一级环境管理物质

This product does not contain Class I environmental management substances

6.生产标准及产品认证

Production standards and product certification

生产的产品满足国标GB/T8897及国际标准IEC60086中的相关要求

The products can meet the national standard GB/T8897 and international standard IEC60086 related requirements.

7.运输 Transit

7.1 电池在运输过程中,应避免日晒、火烤、雨淋、水浸及腐蚀物质放在一起.

7.1 To avoid sun, fire, rain, water and corrosive materials during the batteries transportation process.

7.2 运输和装卸中的冲击、震动应限制在最小程度;

7.2 Shock and vibration during transportation when loading and unloading should be limited to a minimum degree;

7.3 对于纸质的包装箱堆放高度不得超过1.5米;

7.3 The maximum stacking height of paper carton packages should not exceed 1.5m.

7.4 电池长途运输时, 如是船运, 应放在远离发动机的地方; 夏季不应长期

滞留在不通风的环境内.

7.4 Batteries should be kept away from the engine when transport over long distance if by sea freight; It should not stay long time in an unventilated environment in summer.

8. 储存 Storage

8.1 电池应保存在10°C~25°C（不可超过30°C）、湿度45%~75%的环境中；

8.1 Keep batteries in an environment of 10°C to 25°C (not more than 30°C) and humidity during 45% to 75% .

8.2 电池储存时要远离热源，也不能置于阳光直射的地方，保证清洁、凉爽、

干燥、通风，并不受气候影响；

8.2 Batteries should be stored away from heat sources or in direct sunlight, to ensure that they are clean, cool, dry, ventilated and not affected by climate.

8.3 电池的堆放高度取决于包装强度，一般规定，纸质包装箱堆放高度不得超过1.5米,木箱不超过3米；

8.3 Battery stacking height depends on packing strength, generally, the maximum stacking height of paper carton packages should not exceed 1.5m, and wooden boxes can't exceed 3m.

8.4 电池以原包装存放和陈列电池，去掉包装后电池乱堆放，易引起电池短路和损坏；

8.4 Please store and display the batteries in original packing, if removing the packaging, the batteries are piled up in a disorderly manner, which is easy to cause short circuit and damage to the batteries.

9、注意事项 Notes

！危险 Dangerous ！

9.1 不要把电池加热或投进火中；

9.1 Do not heat the battery or put it on fire.

9.2 不要把电池投入水中，也不要置于潮湿的环境中；

9.2 Do not put the battery in water or put it in a humid environment.

9.3 不要把电池同项链、发夹、硬币或螺丝等金属品一起放在兜中或包中，也不要

把电池同上述物品一起储存；

9.3 Do not carry batteries in a pocket or bag with metal items such as necklaces, hairpins, coins or screws, and do not store batteries with these items.

9.4 不要使用金属导体短路电池的正负极；

9.4 Do not use metal conductors to short circuit the positive and negative electrodes of batteries;

9.5 在装入设备时注意电池的正负极不要反装

9.5 When loading the device, pay attention to the positive and negative terminals of the battery.

9.6 不要对电池进行分解； Do not break down the battery;

9.7 不要直接对电池进行焊接. Do not weld the battery directly.

9.8 不要使用带有严重伤痕或变形的电池；

9.8 Do not use batteries that are badly scarred or deformed;

9.9 在使用之前请详细阅读操作说明书，不适当的操作可能引起电池发热、着火、

爆炸、毁坏或电池容量的衰减；

9.9 Please read the operation instructions carefully before use, improper operation may cause battery heating, fire, explosion, destruction or attenuation of battery capacity;

！警告 Warning

9.10 不要把电池放在热皿器，洗衣机或高压容器中；

9.10 Do not store batteries in hot dishes, washing machines, or high-pressure containers;

9.11 不要把电池同干电池或其他原电池一起使用，也不要不同包装、不同型号或

不同品牌的电池一起使用；

9.11 Do not use batteries with dry cells or other galvanic cells, and do not use batteries in different packages, different models or different brands.

9.12 在使用或储存期间如发现电池有发热、散发气味、变色、变形或其他异常之处

停止使用；

9.12 During use or storage, if the battery is found to have heat, odor, discoloration, deformation or other abnormalities, stop use it.

9.13 不要对电池充电； Do not charge the battery.

9. 14不要使电池强制放电; Do not force the battery to discharge;

9. 15如果电解液渗透到你的皮肤或衣服上, 立刻用清水清洗;

9. 15 If the electrolyte gets on your skin or clothes, wash it off immediately with water.

9. 16如果电解液渗出并进入你的眼睛里, 不要揉擦你的眼睛, 立刻用干净的水清洗并去医院检查;

9. 16 If the electrolyte seeps out and gets into your eyes, do not rub your eyes, wash them immediately with clean water and go to the hospital for examination.

! 注意 Pay attention

9. 17把电池放在小孩触摸不到的地方以免吞食, 若不慎误吞, 应立即送往医院;

9. 17 Keep batteries out of the reach of children to avoid swallowing them. If swallowed by mistake, go to the hospital immediately.

9. 18在使用电池时, 应仔细阅读并注意使用中的注意事项;

9. 18 When using the battery, please read carefully and pay attention to the precautions in use;

9. 19电池寿命终止后要立即从设备中取出;

9. 19 Remove the battery from the device immediately after its life has expired.

9. 20当长期不用时, 要将电池从设备中取出并放在低温的环境中保存;

9. 20 When not in use for a long time, take the battery out of the device and store it in a low temperature environment.

9. 21如果电池的接线端变脏, 在使用之前用干布擦净;

9. 21 If the battery terminal becomes dirty, wipe it clean with a dry cloth before using;

9. 22电池应在远离静电的场所使用和储存。

9. 22 Batteries should be used and stored away from static electricity site.

10. 声明 Declaration

10. 1若对此产品承认书有疑问或意见不一致处, 请与本公司联系;

10. 1 If there is any question or disagreement about this product Commitment Letter, please contact us;

10. 2 本公司保留对该产品承认书做任何更改的权利, 且无须另行通知。

10. 2 Our company have the right to make any changes to the Product admission without prior notice.

