金美储能产品规格承认书

JINMCN SPECIFICATION FOR APPROVAL

客　　户：_____

CUSTOMER ：_____

品　　名：JINMCN3R8LL506C0825

DESCRIPTION：50F 3.8V-2.5V 08*25

承制方

制定	审查	批准
袁泉	张广发	

使用方

审核人员	确认

请核实本规格书内容，若无异议请签名盖章回传以表示知晓该规格书承诺的全部内容

深圳前海金裕美程储能技术有限公司
Shenzhen QH JinYMC Energy Storage Co.,Ltd.

金美储能官网:http://www.jinmcn.com

地址：广东省深圳市南山区前海深港合作区前海华润金融中心A栋

金美储能提示您：

1. 金裕美程的电芯应在额定电压和规定工作温度区间使用， 并远离超过工作温度区间的热源
2. 金美系列电芯在使用前需确认正/负极，禁止反向充电
3. 金美系列电芯在使用前用干布对正/负极端子进行清洁
4. 金美系列电芯禁止投入火中或进行高压加热
5. 金美系列电芯禁止直接与水、油、酸或碱接触
6. 金美系列电芯禁止挤压、钉刺和拆解
7. 金美系列电芯禁止将带有 0.5V 以上电压进行正/负极短接
8. 金美系列电芯在使用或储存期间如发现有散发气味、变色、变形或其它反常停止使用
9. 金美系列电芯所使用的电解液极易挥发，请不要随意分解
10. 金美系列电芯不能随意丢弃，需请根据国家环保标准进行处理
11. 系统应配备保护板，避免电压低于金美系列电芯规格书中规定的充放电截止电压
12. 金美系列电芯应在规定的温度范围内储存。会导致电芯性能的损失，漏液或生锈
13. 金美系列电芯、不支持与其他品牌电芯焊接、使用前请先联系金裕美程确认
14. 本规格书未提及到的事项、应同金裕美程确认是否可以进行、私自进行情况下、
深圳金裕美程储能技术有限公司不承担责任

Cautions from JinYMC Energy Storage Co.,Ltd

1. The cells of JinYMC should be used within the rated voltage and the specified operating temperature range, and kept away from heat sources exceeding the operating temperature range.
2. Before using JinYMC series cells, confirm the positive/negative poles and prohibitreversecharging.
3. Before using JinYMC series cells, clean the positive/negative terminals with a dry cloth.
4. JinYMC series cells are prohibited from being put into fire or subjected to high - pressureheating.
5. JinYMC series cells are prohibited from direct contact with water, oil, acid or alkali.
6. JinYMC series cells are prohibited from being squeezed, punctured and disassembled.
7. For JinYMC series cells, it is prohibited to short - circuit the positive/negative poles with a voltage above 0.5V.
8. During the use or storage of JinYMC series cells, if there are abnormal phenomena such as odoremission, discoloration, deformation or others, stop using them immediately.
9. The electrolyte used in JinYMC series cells is highly volatile. Please do not disassemble them at will.
10. JinYMC series cells cannot be discarded casually and should be disposed of according to national environmental protection standards.
11. The system should be equipped with a protection board to avoid the voltage being lower than the charge - discharge cut - off voltage specified in the specification sheet ofJinYMC series cells.
12. JinYMC series cells should be stored within the temperature range specified in the specification sheet. Otherwise, it may lead to the loss of cell performance, leakage or rust.
13. JinYMC series cells do not support welding with cells of other brands. Please contact JinYMC for confirmation before use.
14. For matters not mentioned in this specification sheet, please confirm with JinYMC whether they can be carried out. In case of unauthorized actions, Shenzhen QH JinYMC Energy Storage Co., Ltd. will not bear any responsibility.

1. 适用范围 Scope

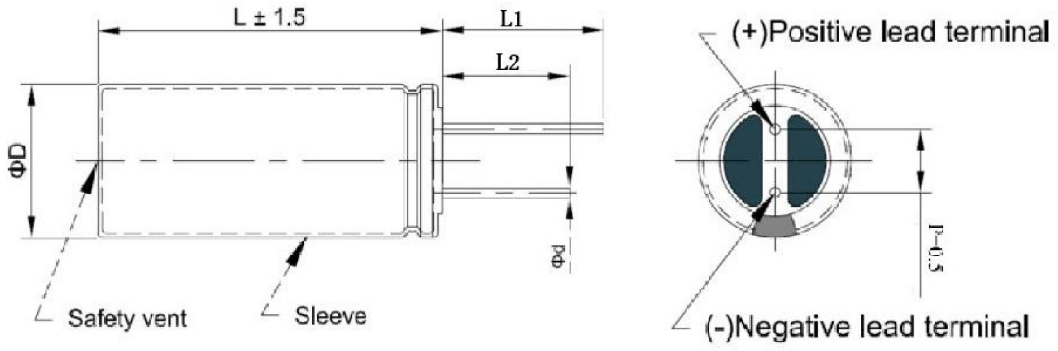
此金美储能规格书对产品的性能，测试方法进行了规范，作为技术确认的依据。

As a JinYMC basis for technical confirmation, this sheet specifies the performance and test methods of the product .

2. 产品特性&应用领域 Features & Applications

产品特性 Features	应用领域 Applications
工作电压高 High working voltage	消费电子 Consumer Electronics
高能量 high energy density	物联网 Internet of Things
长寿命-金久耐用 long cycle life	智能仪器 Intelligent Instrument
安全可靠 safe and reliable	电动玩具 Electric toys
低碳环保 environment-friendly	自动化设备 automation equipment
免维护为您省钱 maintenance-free	不间断电源 UPS
充放电速度可达秒级（部分毫秒级）charge-discharge speed at the scale of second some can reach millisecond level	程控交换机 SPC exchange
从结构到整件遵循金美jinmcn的抗震设计 from the structure to the whole piece follow the seismic design of jinmcn	电动汽车 electric vehicle

3. 外形尺寸(单位：mm) Dimensions (Units : mm)



ΦD (mm)	L (mm)	L1 (mm)	L2 (mm)	Φd (mm)	P (mm)	Weight 重量(g)
08＋1.5 Max	25±1.5	26.0±1.0	20.0±1.0	Φ0.6±0.1	3.5±0.5	≤2.5

4. 性能参数 Parameters

电气性能 Electrical Performance		
容量 Capacitance	额定容量，RatedCapacitance	50F（18mah）
	容量偏差，Capacitance Tolerance, %	-20% +20%
电压 Voltage	额定电压，Rated Voltage, V.DC	3.7
	上限电压 Upper limit voltage V.DC	4.2
	下限电压 Lower limit voltage V.DC	2.5
内阻 Internal Resistance	DC/ mΩ@25℃ 3.8V@25±3℃, 10msec	≤ 400
	AC 1kHz/mΩ@25℃	≤ 200
电流 Current	最大持续电流 Continuous Current A	200mA
	最大峰值电流，MaximumpeakCurrent,A	5A
最大充电电压/电流 Max charge voltage/current	最大充电电压 Max charge voltage	4.2V
	最大充电电流 Max charge current	400mA
温度 Temperature		
温度区间 Temperature Range	工作温度范围，Temperature for Operation, ℃	-40℃~70℃ 85℃（3.5V）
	存储温度范围，Temperature for Storage,℃	+10℃~50℃ 60%RH 或以下
使用期限 Life Time	**寿命 Life**	
	≥ 250000 timesUnder normal temperature conditions, charge the monomer to 3.7V with a current of 10C Then discharge it at this current to 3.1V	

5. Technical Information 性能特性

At 25±3℃, discharge the battery with a constant current I to 2.5V before testing. Charge the product at 1C to the set voltage of U_R, Constant voltage charging for 30 min and cut off the current. Then, discharge the product at 1C to 2.5V. After standing for 30 seconds, repeat the above process again, and take the capacity value after the third discharge as the capacity value of the product.

在25±3℃条件下，在测试前，先将电池用恒定电流I放电至2.5V。将产品以1C充电至设定电压U_R后恒压充电30min，紧接着，以1C电流将产品放电至U_1。静置30s后，再次重复上述过程，取第3次放电后的容量值为产品的容量值。

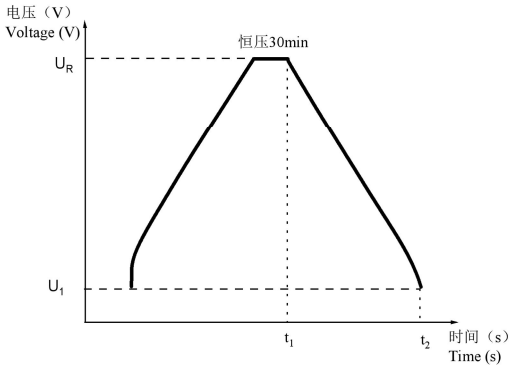


Fig1. Charge/Discharge curves for Sample

图1 样品的充放电曲线

The formula：公式中：

$$C = I * (t_2 - t_1)/(U_R - U_1)$$

I—Discharge Current 1C(mA)　　I—:放电电流 1C(mA)；

U_R—Voltage before test:UR=3.8(V)　　U_R—测量初始电压:UR=3.8(V)；

U_1—Voltage after test:U=2.5(V)　　U_1—测量结束电压:U2=2.5(V)；

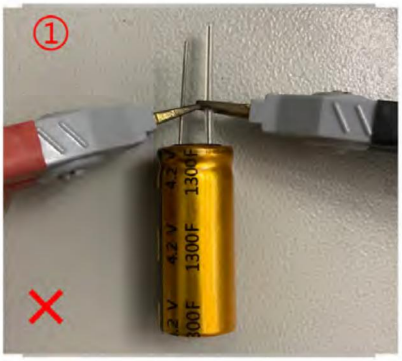
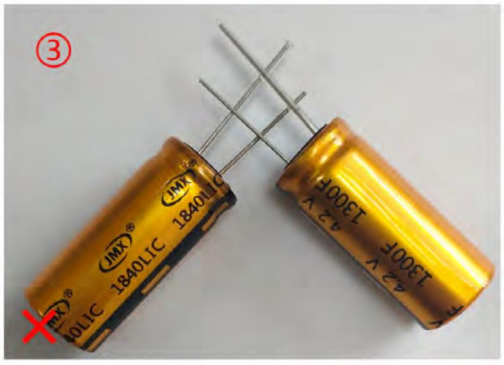
t_1—Discharge time from U_R　　t_1—从 UR 开始放电时间

t_2—Timing from discharging to U_1；　　t_2—放电开始到测量结束电压 U_1 的时间(s)；

6. Safety Test 安全测试

Series 序号	Test Item 测试项目	Test Method 测试方法	Criteria 检验标准
1	Drop Test 跌落测试	A fully charged cell drop onto the cement floor from 1.5m height t in a vertical direction, then observed for 1h. 电芯从 1.5m 的高度以正负极柱的方向跌落至水泥地面，实验后放置 1h 后进行外观检查。	No explosion, no fire 不爆炸、不起火
2	Crush Test 挤压测试	A cell 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 cells 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. 将电芯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，挤压面与电芯接触，逐渐增加压力至 13±1KN 后停止。	No explosion, no fire 不爆炸、不起火

3	Heating Test 加热测试	A cell 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±3°C per minute to a temperature of 130°C±3°C and remain for 30 min and observed 1h. 将电芯放在电热鼓风干燥箱中加热，温度以 5°C±3°C/min 的速率由室温升至 130°C±3°C 并保持 30min，观察 1h。	No explosion, no fire 不爆炸、不起火
4	Sea Water Immersion Test 海水浸泡	The cell was immersed in 3.5%Nacl solution (mass fraction, simulated seawater composition at normal temperature) for 2h. 将电芯完全浸入 3.5%Nacl 溶液（质量分数，模拟常温下的海水成分）中搁置 2h。	No explosion, no fire 不爆炸、不起火
5	Over-discharge Test 过放电	Constant discharge with 1C current for 90min ，then observed for 1h. 以 1C 电流恒流放电 90min，观察 1h。	No explosion, no fire, no leakage 不爆炸、不起火、不漏液
6	Over-charge Test 过充电	Stop charging after charging with constant 1C current until reaching 1.5 times of the charging termination voltage stipulated by the enterprise or charging time reaching 1.5h. 以 1C 电流恒流充电至达到企业规定的充电终止电压的 1.5 倍，或充电时间达到 1.5h 后停止充电。	No explosion, no fire 不爆炸、不起火
7	Short-circuit Test 短路测试	Short-circuit the standard charged cell by connecting positive and negative terminal by less 5 mΩ wire, until the cell case temperature has returned to be 20% less then peak temperature. 短接电芯的正负极，外部线路总电阻＜5mΩ，当电芯温度下降到比峰值低约 20%，结束实验。	No explosion, no fire 不爆炸、不起火

1.测量中发生短路 Short Circuit during Testing	2. 产品处理中发生短路 Short Circuit during connecting
① 	② 
3.产品放置在一起导致引线接触 Radial connecting during the storage or moving processes	4. 发生短路 Short circuit
③ 	④ 

自出货之日起，电容的保质期限依合同而定。但是，在此期限内，如果非本公司的制程原因而是客户的误用造成的电容质量问题，不承诺免费更换