

承认 No.

JHNE-CG-T-9261

Specification Approval Sheet

承认书

Dear customers, 尊敬的客户:

Please confirm the specification approval of Jianghai Supercapacitor. 请确认江海超级电容规格承认书

| | | |
|---------------------------|-----------------------------|-----------|
| Customer Approval 客户承认 | Signature(签字): | Date(日期): |
| | | |
| | Company Name(公司名称): Kael | |
| | Company Stamp(公司盖章): | |

南通江海电容器股份有限公司

NANTONG JIANGHAI CAPACITOR CO., LTD

南通江海储能技术有限公司

NANTONG JIANGHAI NEW ENERGY CO., LTD

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Specification of Jianghai Supercapacitor

江海超级电容规格书

Part Number: SCMDVT5R5684ZVC205009E

Product Spec.: SVT 5.5V0.68F-C

| | | |
|----------------|---------------|----------------|
| Prepared 拟制 | Checked 审核 | Approved 批准 |
| 许星星 | 杨振江 | 杨恩东 |

AMENDMENT RECORDS

修改履历

| Ver. No. 版本 | Description 内容 | Date 日期 | Checked 审核 |
|----------------|-------------------|------------|---------------|
| A00 | Initial Release | 16/05/2019 | 杨振江 |
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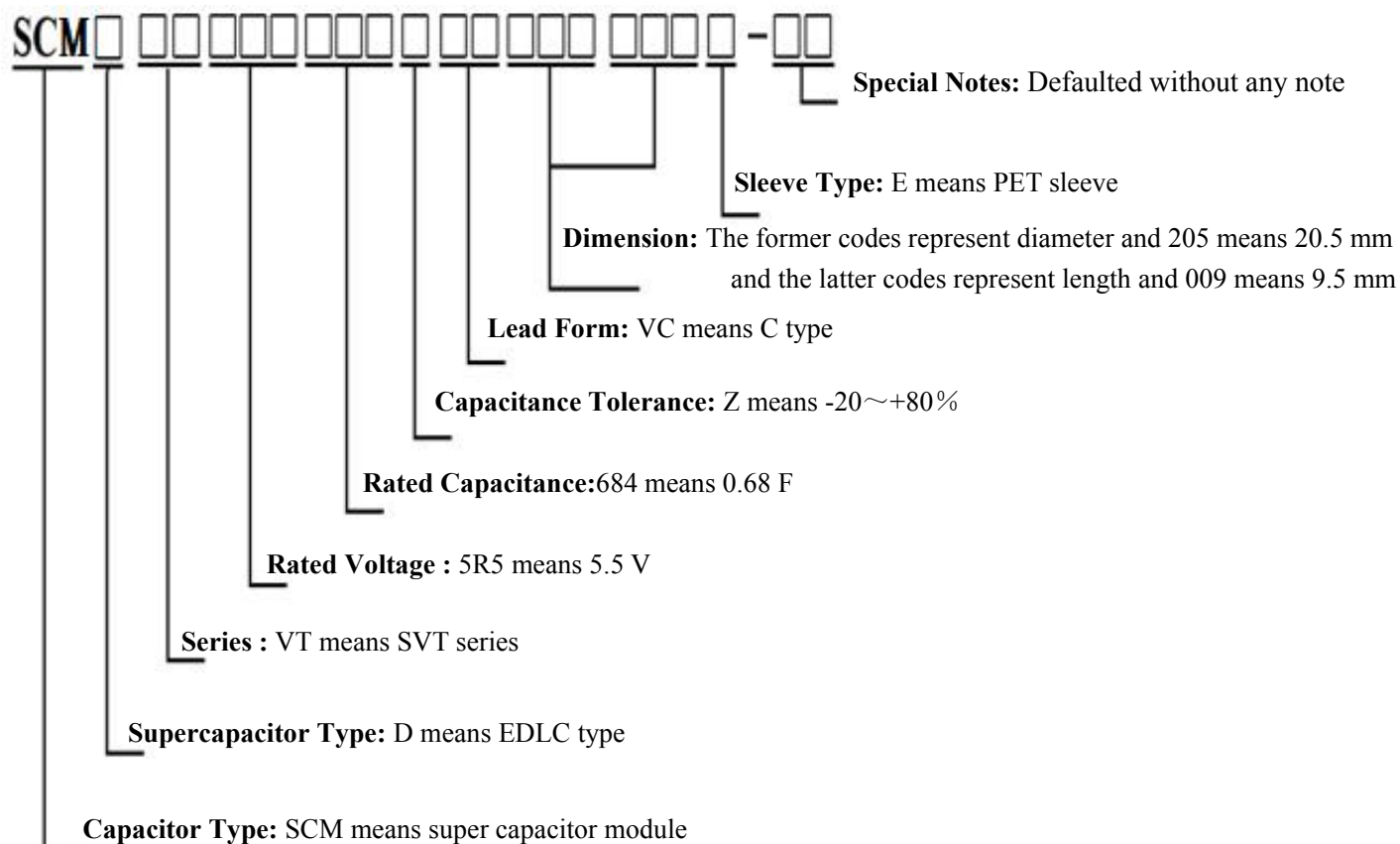
1. General Characteristics/一般特性

| No. | Items/项目 | Criteria/参数值 | Remark/备注 |
|-----|---------------------------------------|--------------|-----------|
| 01 | Operating Temperature Range 工作温度范围 | -40~+85℃ | |
| 02 | Rated Voltage 额定工作电压 | 5.5V | |
| 03 | Rated Capacitance 额定容量 | 0.68F | |
| 04 | Capacitance Tolerance 容差范围 | -20~+80% | |
| 05 | ESR _{AC} 交流内阻 | 30Ω | 1KHz |
| 06 | Leakage Current 漏电流 | 0.008 mA | 72 hrs |
| 07 | Storage temperature Range 存储温度范围 | -40~+85℃ | |

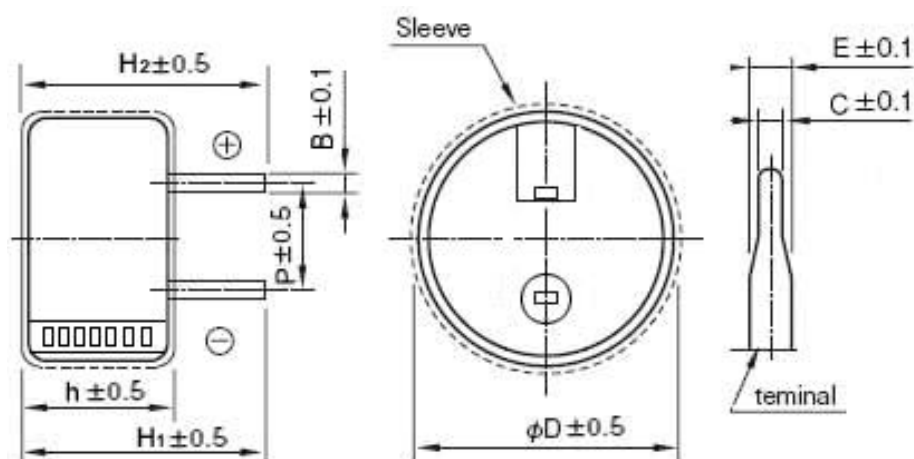
2.Environmental Characteristics/环境特性

| No. | Items/项目 | Specification/Condition/规格/条件 |
|-----|-------------------------------------|--|
| 01 | Temperature Characteristics 温度特性 | $ \Delta C/C \leq 10\%$, $ESR \leq \text{specified ESR at } +85^\circ\text{C}$ +85℃, 容量变化: 初始值的 10%以内, ESR: 不超过规定值 $ \Delta C/C \leq 30\%$, $ESR \leq 2 \text{ times of specified ESR at } -40^\circ\text{C}$ -40℃, 容量变化: 初始值的 30%以内, ESR: 不超过 2 倍规定值 |
| 02 | High temperature loaded 高温负荷 | $ \Delta C/C \leq 30\%$, $ESR \leq 4 \text{ times of specified ESR at } +85^\circ\text{C}/$ 1000hrs/Rated voltage +85℃, 额定电压下, 负荷 1000h, 容量变化: 初始值的 30%以内, ESR: 不超过 4 倍规定值 |
| 03 | High temperature storage 高温存储 | $ \Delta C/C \leq 30\%$, $ESR \leq 4 \text{ times of specified ESR at } +85^\circ\text{C}/1000\text{hrs}$ +85℃, 高温存储 1000h, 容量变化: 初始值的 30%以内, ESR: 不超过 4 倍规定值 |
| 04 | Humidity Resistance 稳态湿热 | +40℃±2, 90--95%RH, 240h, $ \Delta C/C \leq 30\%$, $ESR \leq 2 \text{ times of specified ESR}$ +40℃±2, 90--95%RH, 高温高湿存储 240h, 容量变化: 初始值的 30%以内, ESR: 不超过 2 倍规定值 |

3. Jianghai P/N: 江海代码



4.Product Dimensions: 产品尺寸



| Items | Criteria | Items | Criteria |
|-------|----------|-------|----------|
| D | 20.5 mm | h | 9.5 mm |
| p | 5.0 mm | H_1 | 14.5 mm |
| B | 0.4 mm | H_2 | 15.5 mm |
| E | 1.2 mm | C | 0.8 mm |

5. Handling Precautions and Guidelines 注意事项和使用指导

For safety application, please contact JIANGHAI directly for any technical specifications, handling precautions and guidelines critical to application.

为安全起见，当设计的设备需要使用电容器时，请与江海直接联系咨询技术规格、安装注意事项和使用要求。

5.1 Precautions 注意事项

(1) Prohibition of disassembly 禁止拆卸

The disassembling may generate internal short circuit in the cell, which may cause gassing, leakage, explosion, or other problems.

拆卸电容会导致内部短路，可能导致产气，泄漏，爆炸，或其他问题。

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

电解液是有害的：如果电解液接触到皮肤或眼睛，应立即用清水冲洗并寻求医生的治疗。

(2) Prohibition of dumping of cells into fire 禁止将电容投入火中

These may cause explosion of the cells, which is very dangerous and is prohibited.

这可能会导致电容爆炸，这是非常危险的，是被禁止的。

(3) Prohibition of cells immersion into liquid 禁止将电容浸入液体

The cells shall never be soaked with liquids such as water, seawater, drinks such as juices, coffee or others.

电容不能用水、海水、果汁、咖啡或其他饮料等液体浸泡。

(4) Prohibition of use of damaged cells 禁止使用损坏的电容

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

在运送过程中，电容可能因受到冲击而损坏。

如果发现电容有任何异常情况，如包装破损、电解液气味、电解液泄漏等，请勿使用该电容。

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

有电解液味道或泄漏的电容应放置在远离火的地方，以避免起火或爆炸。

5.2 Handling Guidelines 使用指导

(1) It is not suitable that cell is used under such conditions: AC circuit and wave filtering.
不可以用于以下场合：交流电路和滤波电路

(2) Work voltage of cell should not exceed Max. work voltage of cell during using.
Otherwise, will shorten shelf life, even cause swelling, leakage or crack.

电容的工作电压不应超过电容额定最高工作电压。否则，会导致缩短使用寿命，甚至引起气胀、泄漏或开裂。

(3) Please check the polarity before using. If working under reverse polarity, cell will not only shorten shelf life, but also heavy damage, such as swelling, electrolyte leakage etc.

使用前请检查极性。如果在反极性下工作，电容不仅会缩短使用寿命，甚至还会造成严重的损坏，如气胀、电解液泄漏等。

(4) Environment 环境

Work temperature will have an influence on shelf life of cell. As usual, higher work temperature will shorten shelf life. So, it is better that cell works under as possible as low environmental temperature.

工作温度会影响电容的使用寿命。通常，较高的工作温度会缩短使用寿命。因此，最好是在低环境温度下工作。

Work temperature of cell should consider internal work temperature in the unit and temperature rise when cell works.

电容的工作温度应考虑机组内部工作温度和电容工作时的内部温升。

(5) IR drop IR 下降

When main power sources shut down, cell will change into work mode from failure mode, at the same time, OCV will decrease due to IR drop. So please choose proper product type according to impedance specified in product datasheet and applied current.

当主电源关闭，电容会从电源失效检测模式转变为后备电源工作模式，此时由于瞬间启动电流和电容内阻会导致开路电压下降。因此，请根据产品规格书和应用电流中指定的阻抗选择合适的产品类型。

(6) Cells in series connection 串联连接的电容

When cells in series connection for higher work voltage, it should be assured that work voltage of any single cell must not exceed Max. work voltage of single cell, otherwise, will shorten shelf life, even cause swelling, leakage or crack.

当多个单体电容串联使用以提高工作电压时，应保证每个电容的工作电压不得超过电容的最大工作电压，否则会缩短寿命，甚至引起气胀、泄漏或开裂。

(7) Soldering 焊接

Heat shock will decrease electric performance of cell, even cause swelling, leakage or crack.

热冲击会降低电容的电性能，甚至引起气胀、泄漏或开裂。

Soldering temperature should not exceed 260°C, soldering time should not exceed 5s.

焊接温度不应超过 260 度，焊接时间不应超过 5s。

Please don't use reflow soldering of infrared heating.

请不要使用回流焊。

Customer Inquiry 客户需求

Model: SCMDVT5R5684ZVC205009E

Version: A00

The customer is requested to write down your information and contact JIANGHAI in advance, if and when the customer needs applications or operating conditions other than those described in this document. JIANGHAI could design and build such products according to your special request.

如果客户需要本文件所未描述的应用程序或操作条件，请事先填写客户信息，并与江海联系。江海可根据您的特殊需求设计和制造产品。

| No. | Special Request 特殊需求 | Criteria 需求标准 |
|-----|----------------------|---------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |

Company Name:

Signature:

Date: