



NO.1121010471

# 检测报告

## Test Report

样品名称: 可充电锂离子电池包 S6A(TCR18650 2.6Ah) 11.1V  
2600mAh 28.86Wh

Name of Sample: Rechargeable Li-ion Battery S6A(TCR18650 2.6Ah)  
11.1V 2600mAh 28.86Wh

委托单位: 苏州斯卫浦电器有限公司

Consignor: Suzhou Sweep Electric Appliance Co., Ltd



上海化工院检测有限公司

Shanghai Institute of Chemical Industry Testing Co., Ltd.

# 上海化工院检测有限公司 检测报告

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report

NO. 1121010471

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样品名称 Name of Sample	中文 Chinese	可充电锂离子电池包 S6A(TCR18650 2.6Ah) 11.1V 2600mAh 28.86Wh		
	英文 English	Rechargeable Li-ion Battery S6A(TCR18650 2.6Ah) 11.1V 2600mAh 28.86Wh		
样品编号 Sample No.	1121010471			
委托单位 Consignor	苏州斯卫浦电器有限公司 Suzhou Sweep Electric Appliance Co., Ltd			
生产单位 Manufacturer	苏州斯卫浦电器有限公司 Suzhou Sweep Electric Appliance Co., Ltd			
检测方法 Test method	联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11/Rev.6 Amend.1 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3			
判定标准 Criterion	联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11/Rev.6 Amend.1 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3			
样品外观 Appearance	蓝色 塑料薄膜外壳 Blue Plastic film shell			
样品接受日期 Accepted Date	2021-01-19	检测起迄日期 Test Date	2021-01-26 ~ 2021-03-01	
检测项目 Test Items	高度模拟;热测试;振动;冲击;外短路;撞击;过充电;强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Impact, Overcharge, Forced discharge			
检测结论 Conclusion	经检测,该样品符合联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11/Rev.6 Amend.1 38.3标准要求。 The sample has passed the test items of UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 38.3 <div style="text-align: right; margin-top: 10px;">                     生效日期(Date): 2021-03-01   </div>			
备注 Comment	可充电锂电池组 Rechargeable Lithium Battery. /			
委托单位地址 Consignor Address	/		邮政编码 Post Code	200001

批准  
Approver:  
职务  
Title:

王景

副总工程师 (Vice chief engineer)

审核  
Checker:

陆建峰

编制  
Compiler:

傅俊



# 上海化工院检测有限公司 检测报告

Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report

NO. 1121010471

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序号 No.	检测项目名称 Name of Test Items	标准要求或标准条款号 Standard requirement or The Clause Number of Standard	检测结果 Test Result	本项结论 Conclusion	备注 Remark	
1	高度模拟 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.1 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.1	见附表 1 See Appendix 1	合格 Passed	/	
2	热测试 Thermal test	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.2 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.2	见附表 2 See Appendix 2	合格 Passed	/	
3	振动 Vibration	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.3	见附表 3 See Appendix 3	合格 Passed	/	
4	冲击 Shock	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.4 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.4	见附表 4 See Appendix 4	合格 Passed	/	
5	外短路 External short circuit	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.5 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.5	见附表 5 See Appendix 5	合格 Passed	/	
6	撞击 Impact	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.6 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.6	见附表 6 See Appendix 6	合格 Passed	/	
7	过充电 Overcharge	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.7 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.7	见附表 7 See Appendix 7	合格 Passed	/	
8	强制放电 Forced discharge	联合国《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11/Rev.6 Amend.1 38.3 试验T.8 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 Amend.1 Section 38.3 Test T.8	见附表 8 See Appendix 8	合格 Passed	/	
检测环境条件 Test Environment Condition		环境温度:20℃-22℃;环境湿度:/% Ambient temperature:20℃-22℃;Ambient humidity:/%				
分包检验情况 Subcontracted Test Condition		检测项目 Test Item	/			
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code	/
		地址 Address	/	电话 Tel	/	

















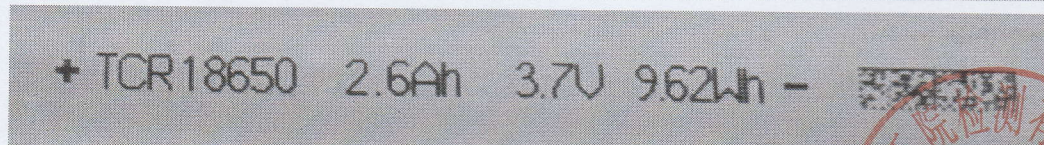
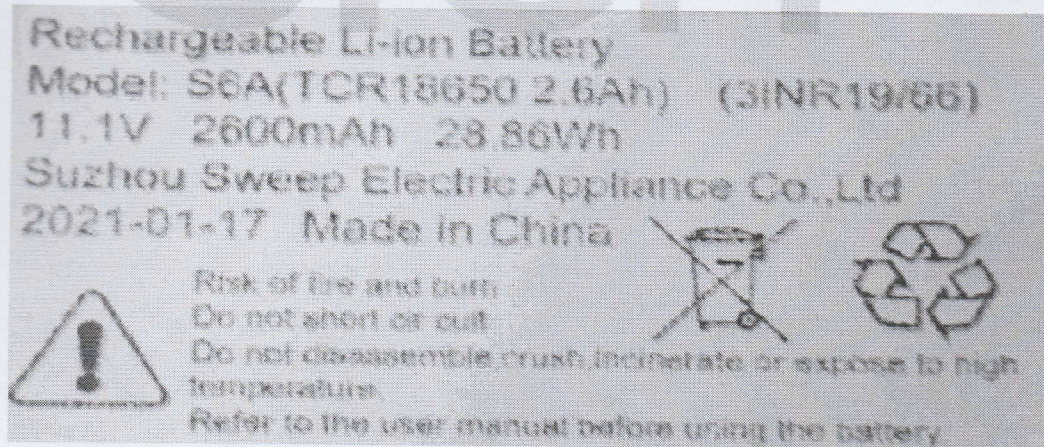
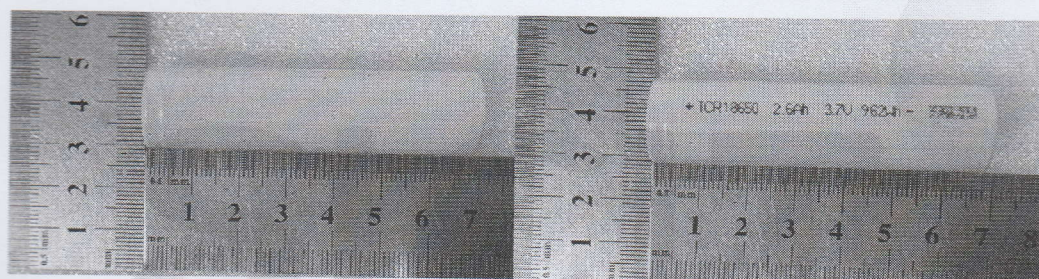
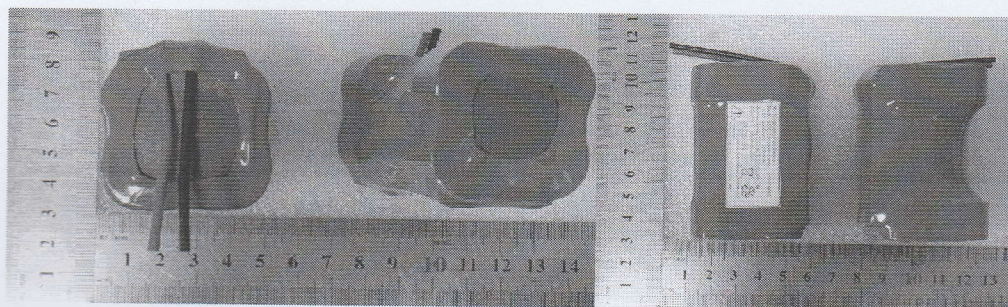
上海化工院检测有限公司  
检测报告-附表8  
Shanghai Institute of Chemical Industry  
Testing Co., Ltd. Test Report—Appendix 8

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序号 No.	8	检测项目名称 Name of Test Items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample Status	其他现象 Other Event	
027	1CYC完全放电 1CYC Fully discharged		O
028	1CYC完全放电 1CYC Fully discharged		O
029	1CYC完全放电 1CYC Fully discharged		O
030	1CYC完全放电 1CYC Fully discharged		O
031	1CYC完全放电 1CYC Fully discharged		O
032	1CYC完全放电 1CYC Fully discharged		O
033	1CYC完全放电 1CYC Fully discharged		O
034	1CYC完全放电 1CYC Fully discharged		O
035	1CYC完全放电 1CYC Fully discharged		O
036	1CYC完全放电 1CYC Fully discharged		O
037	25CYC完全放电 25CYC Fully discharged		O
038	25CYC完全放电 25CYC Fully discharged		O
039	25CYC完全放电 25CYC Fully discharged		O
040	25CYC完全放电 25CYC Fully discharged		O
041	25CYC完全放电 25CYC Fully discharged		O
042	25CYC完全放电 25CYC Fully discharged		O
043	25CYC完全放电 25CYC Fully discharged		O
044	25CYC完全放电 25CYC Fully discharged		O
045	25CYC完全放电 25CYC Fully discharged		O
046	25CYC完全放电 25CYC Fully discharged		O

备注: D-解体 F-起火 O-无解体、无起火。  
Note: D-Disassembly F-Fire O-No Disassembly & No Fire.



\*\*\*报告结束\*\*\*







Test Report issued under the responsibility of:



<b>TEST REPORT</b> <b>IEC 62133-2</b> <b>Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications –</b> <b>Part 2: Lithium systems</b>	
<b>Report Number</b> ..... :	EFSH21011464-IE-01-L01
<b>Date of issue</b> ..... :	2021-03-04
<b>Total number of pages</b> .....	34 pages
<b>Name of Testing Laboratory preparing the Report</b> .....	Eurofins Product Testing Service (Shanghai) Co., Ltd.
<b>Applicant's name</b> .....	Suzhou Sweep Electric Appliance Co., Ltd.
<b>Address</b> ..... :	No.525 Pusha Road, Linhu Town, Wuzhong District, Suzhou, Jiangsu, China
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 62133-2:2017
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC62133_2A
<b>Test Report Form(s) Originator</b> .... :	DEKRA
<b>Master TRF</b> .....	Dated 2017-08-10
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<b>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
<b>General disclaimer:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

<b>Test item description</b> .....	Rechargeable Li-ion Battery	
<b>Trade Mark</b> .....	-	
<b>Manufacturer</b> .....	Same as applicant	
<b>Model/Type reference</b> .....	S6A; S6B	
<b>Ratings</b> .....	S6A: 11,1 V, 2600 mAh, 28,86 Wh; S6B: 14,8 V, 2600 mAh, 38,48 Wh	
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>		
<input checked="" type="checkbox"/> <b>CB Testing Laboratory:</b>	Eurofins Product Testing Service (Shanghai) Co., Ltd.	
<b>Testing location/ address</b> .....	No. 395, No. 399 West Jiangchang Road, Jing'an District, Shanghai, China	
<b>Tested by (name, function, signature)</b> .....	Sky Ma/ Project Engineer	
<b>Approved by (name, function, signature) ..</b>	Jeff Li/ Project Engineer	
<input type="checkbox"/> <b>Testing procedure: CTF Stage 1:</b>		
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)</b> .....		
<b>Approved by (name, function, signature) ..</b>		
<input type="checkbox"/> <b>Testing procedure: CTF Stage 2:</b>		
<b>Testing location/ address</b> .....		
<b>Tested by (name + signature)</b> .....		
<b>Witnessed by (name, function, signature) . :</b>		
<b>Approved by (name, function, signature) .. :</b>		
<input type="checkbox"/> <b>Testing procedure: CTF Stage 3:</b>		
<input type="checkbox"/> <b>Testing procedure: CTF Stage 4:</b>		
<b>Testing location/ address</b> .....		
<b>Tested by (name, function, signature)</b> .....		
<b>Witnessed by (name, function, signature) . :</b>		
<b>Approved by (name, function, signature) .. :</b>		
<b>Supervised by (name, function, signature) :</b>		

<p><b>List of Attachments (including a total number of pages in each attachment):</b>  Attachment I: (Republic of Korea) NATIONAL DIFFERENCES (3 pages)  Attachment II: Photos (6 pages)</p>	
<p><b>Summary of testing:</b>  From the result of our inspection and tests on the submitted samples, we conclude they comply with requirements of the standard.</p>	
<p><b>Tests performed (name of test and test clause):</b></p> <p><input type="checkbox"/> Clause 7.2.1 Continuous low-rate charging (cells)</p> <p><input checked="" type="checkbox"/> Clause 7.2.2 Moulded case stress at high ambient temperature (battery)</p> <p><input type="checkbox"/> Clause 7.3.1 External short circuit (cell)</p> <p><input checked="" type="checkbox"/> Clause 7.3.2 External short circuit (battery)</p> <p><input checked="" type="checkbox"/> Clause 7.3.3 Free fall</p> <p><input type="checkbox"/> Clause 7.3.4 Thermal abuse (cells)</p> <p><input type="checkbox"/> Clause 7.3.5 Crush (cells)</p> <p><input checked="" type="checkbox"/> Clause 7.3.6 Over-charging of battery</p> <p><input type="checkbox"/> Clause 7.3.7 Forced discharge (cells)</p> <p><input checked="" type="checkbox"/> Clause 7.3.8 Mechanical tests (batteries)</p> <p><input type="checkbox"/> Clause 7.3.9 Design evaluation – Forced internal short circuit (cells)</p>	<p><b>Testing location:</b>  Eurofins Product Testing Service (Shanghai) Co., Ltd.  No. 395, No. 399 West Jiangchang Road, Jing'an District, Shanghai, China</p>
<p><b>Summary of compliance with National Differences (List of countries addressed):</b>  EU Group Differences (no differences), KR  KR: Republic of Korea</p> <p><input checked="" type="checkbox"/> The product fulfils the requirements of IEC 62133-2:2017, EN 62133-2:2017 and KC62133(2020-07).</p>	

**Copy of marking plate:**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

**Rechargeable Li-ion Battery**
**Model: S6A (3INR19/66)**
**11.1V 2600mAh 28.86Wh**
**Suzhou Sweep Electric Appliance Co., Ltd.**
**YYYY-MM-DD**
**Made in China**


Risk of fire and burn.  
Do not short circuit.  
Do not disassemble, crush, incinerate or expose to high temperature.  
Refer to the user manual before using the battery.

**Rechargeable Li-ion Battery**
**Model: S6B (4INR19/66)**
**14.8V 2600mAh 38.48Wh**
**Suzhou Sweep Electric Appliance Co., Ltd.**
**YYYY-MM-DD**
**Made in China**


Risk of fire and burn.  
Do not short circuit.  
Do not disassemble, crush, incinerate or expose to high temperature.  
Refer to the user manual before using the battery.



<b>Test item particulars</b> .....	Rechargeable Li-ion Battery
<b>Classification of installation and use</b> .....	To be used in final product
<b>Supply Connection</b> .....	Not directly connected to mains
<b>Recommend charging method declared by the manufacturer</b> .....	CC/CV
<b>Discharge current (0,2 It A)</b> .....	520 mA
<b>Specified final voltage</b> .....	S6A: 8,25 V; S6B: 11 V;
<b>Upper limit charging voltage per cell</b> .....	4,2 V
<b>Maximum charging current</b> .....	2500 mA
<b>Charging temperature upper limit</b> .....	45 °C
<b>Charging temperature lower limit</b> .....	0 °C
<b>Polymer cell electrolyte type</b> .....	<input type="checkbox"/> gel polymer <input type="checkbox"/> solid polymer <input checked="" type="checkbox"/> N/A
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
<b>Testing</b> ..... :	
<b>Date of receipt of test item</b> .....	2021-01-20
<b>Date (s) of performance of tests</b> .....	2021-01-20 to 2021-02-26
<b>General remarks:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.  <b>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</b> The related applicable CTL decisions have been considered and the requirements found fulfilled Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC62133 02:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)</b> .....	Same as applicant

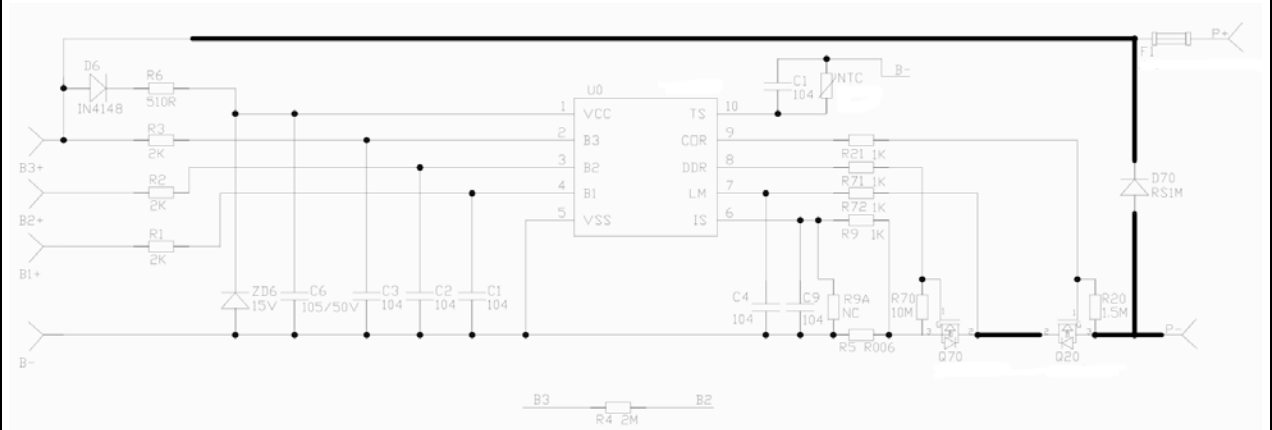
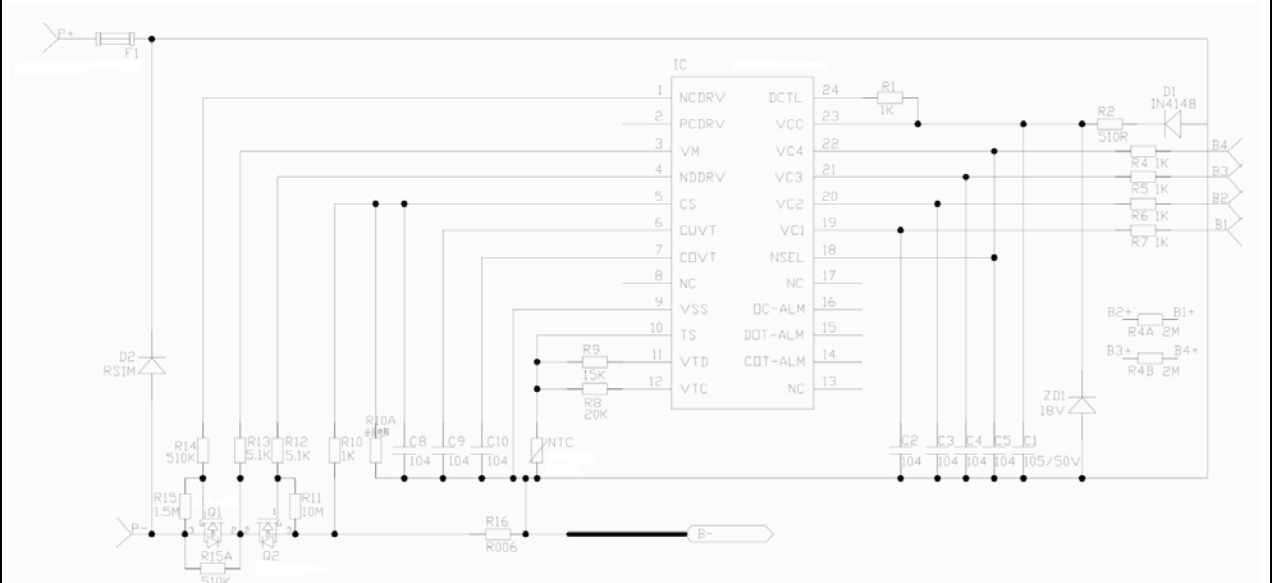
**General product information and other remarks:**

S6A and S6B provide with overcharge, over-discharge and short-circuit proof circuit as part of protection effect.

The specified working conditions are as following:

Model	S6A	S6B
Nominal voltage: (V)	11,1	14,8
Rated capacity: (mAh)	2600	2600
Nominal charge current: (A)	1,25	1,25
Maximum charge current: (A)	2,5	2,5
Nominal discharge current: (A)	10	10
Maximum discharge current: (A)	13	13
Maximum charging voltage: (V)	12,6	16,8
Discharge cut-off voltage: (V)	8,25	11
Operating temperature: (°C)	0-45	0-45
Cell quantity:	3S1P	4S1P

Circuit:

**S6A**

**S6B**


IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>PARAMETER MEASUREMENT TOLERANCES</b>		<b>P</b>
	Parameter measurement tolerances		P
<b>5</b>	<b>GENERAL SAFETY CONSIDERATIONS</b>		<b>P</b>
<b>5.1</b>	<b>General</b>		P
	Cells and batteries so designed and constructed that they are safe under conditions of both intended use and reasonably foreseeable misuse		P
<b>5.2</b>	<b>Insulation and wiring</b>		P
	The insulation resistance between the positive terminal and externally exposed metal surfaces of the battery (excluding electrical contact surfaces) is not less than 5 MΩ		N/A
	Insulation resistance (MΩ) ..... :		—
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		P
	Orientation of wiring maintains adequate clearance and creepage distances between conductors		P
	Mechanical integrity of internal connections accommodates reasonably foreseeable misuse		P
<b>5.3</b>	<b>Venting</b>		P
	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition		P
	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief		N/A
<b>5.4</b>	<b>Temperature, voltage and current management</b>		P
	Batteries are designed such that abnormal temperature rise conditions are prevented		P
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer		P
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that specified chargers are designed to maintain charging within the temperature, voltage and current limits specified		P
<b>5.5</b>	<b>Terminal contacts</b>		P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance		P
	Terminal contacts are arranged to minimize the risk of short-circuit		P
<b>5.6</b>	<b>Assembly of cells into batteries</b>		P
5.6.1	General		P
	Each battery have an independent control and protection for current, voltage, temperature and any other parameter required for safety and to maintain the cells within their operating region		P
	This protection may be provided external to the battery such as within the charger or the end devices		N/A
	If protection is external to the battery, the manufacturer of the battery provide this safety relevant information to the external device manufacturer for implementation		N/A
	If there is more than one battery housed in a single battery case, each battery have protective circuitry that can maintain the cells within their operating regions	One battery	N/A
	Manufacturers of cells specify current, voltage and temperature limits so that the battery manufacturer/designer may ensure proper design and assembly	Certified cells are used	P
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate circuitry to prevent operation of cells outside the limits specified by the cell manufacturer		N/A
	Protective circuit components added as appropriate and consideration given to the end-device application		P
	The manufacturer of the battery provide a safety analysis of the battery safety circuitry with a test report including a fault analysis of the protection circuit under both charging and discharging conditions confirming the compliance		N/A
5.6.2	Design recommendation		P
	For the battery consisting of a single cell or a single cellblock, it is recommended that the charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Table 2		N/A

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that the voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Table 2, by monitoring the voltage of every single cell or the single cellblocks		P
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that charging is stopped when the upper limit of the charging voltage is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks		P
	For batteries consisting of series-connected cells or cell blocks, nominal charge voltage not be counted as an overcharge protection		P
	For batteries consisting of series-connected cells or cell blocks, cells have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer		P
	It is recommended that the cells and cell blocks not discharged beyond the cell manufacturer's specified final voltage		P
	For batteries consisting of series-connected cells or cell blocks, cell balancing circuitry incorporated into the battery management system		P
5.6.3	Mechanical protection for cells and components of batteries		P
	Mechanical protection for cells, cell connections and control circuits within the battery provided to prevent damage as a result of intended use and reasonably foreseeable misuse		P
	The mechanical protection can be provided by the battery case or it can be provided by the end product enclosure for those batteries intended for building into an end product		P
	The battery case and compartments housing cells designed to accommodate cell dimensional tolerances during charging and discharging as recommended by the cell manufacturer		P
	For batteries intended for building into a portable end product, testing with the battery installed within the end product considered when conducting mechanical tests	With PVC enclosure	N/A
<b>5.7</b>	<b>Quality plan</b>		P

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict
	The manufacturer prepares and implements a quality plan that defines procedures for the inspection of materials, components, cells and batteries and which covers the whole process of producing each type of cell or battery	Quality plan	P
<b>5.8</b>	<b>Battery safety components</b>		P
	According annex F		P

<b>6</b>	<b>TYPE TEST AND SAMPLE SIZE</b>		<b>P</b>
	Tests are made with the number of cells or batteries specified in Table 1 using cells or batteries that are not more than six months old		P
	Coin cells with resistance $\leq 3 \Omega$ (measured according annex D) are tested according table 1		N/A
	Unless otherwise specified, tests are carried out in an ambient temperature of $20 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$		P
	The safety analysis of 5.6.1 identify those components of the protection circuit that are critical for short-circuit, overcharge and overdischarge protection		P
	When conducting the short-circuit test, consideration given to the simulation of any single fault condition that is likely to occur in the protecting circuit that would affect the short-circuit test		P

<b>7</b>	<b>SPECIFIC REQUIREMENTS AND TESTS</b>		<b>P</b>
<b>7.1</b>	<b>Charging procedure for test purposes</b>		P
7.1.1	First procedure		P
	This charging procedure applies to subclauses other than those specified in 7.1.2		P
	Unless otherwise stated in this document, the charging procedure for test purposes is carried out in an ambient temperature of $20 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ , using the method declared by the manufacturer		P
	Prior to charging, the battery have been discharged at $20 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ at a constant current of 0,2 It A down to a specified final voltage		P
7.1.2	Second procedure		N/A
	This charging procedure applies only to 7.3.1, 7.3.4, 7.3.5, and 7.3.9		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After stabilization for 1 h and 4 h, respectively, at ambient temperature of highest test temperature and lowest test temperature, as specified in Table 2, cells are charged by using the upper limit charging voltage and maximum charging current, until the charging current is reduced to 0,05 It A, using a constant voltage charging method		N/A
<b>7.2</b>	<b>Intended use</b>		P
7.2.1	Continuous charging at constant voltage (cells)		N/A
	Fully charged cells are subjected for 7 days to a charge using the charging method for current and standard voltage specified by the cell manufacturer		N/A
	Results: No fire. No explosion. No leakage..... :		N/A
7.2.2	Case stress at high ambient temperature (battery)		P
	Oven temperature (°C)..... : 70		—
	Results: No physical distortion of the battery case resulting in exposure of internal protective components and cells		P
<b>7.3</b>	<b>Reasonably foreseeable misuse</b>		P
7.3.1	External short-circuit (cell)		N/A
	The cells were tested until one of the following occurred:		N/A
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		N/A
	Results: No fire. No explosion..... :		N/A
7.3.2	External short-circuit (battery)		P
	The batteries were tested until one of the following occurred:		P
	- 24 hours elapsed; or		P
	- The case temperature declined by 20 % of the maximum temperature rise		N/A
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition		N/A
	A single fault in the discharge protection circuit conducted on one to four (depending upon the protection circuit) of the five samples before conducting the short-circuit test		P
	A single fault applies to protective component parts such as MOSFET, fuse, thermostat or positive temperature coefficient (PTC) thermistor		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Results: No fire. No explosion..... :	(See appended table 7.3.2)	P
7.3.3	Free fall		P
	Results: No fire. No explosion		P
7.3.4	Thermal abuse (cells)		N/A
	Oven temperature (°C)..... :		—
	Results: No fire. No explosion		N/A
7.3.5	Crush (cells)		N/A
	The crushing force was released upon:		N/A
	- The maximum force of 13 Kn ± 0,78 Kn has been applied; or		N/A
	- An abrupt voltage drop of one-third of the original voltage has been obtained		N/A
	Results: No fire. No explosion..... :		N/A
7.3.6	Over-charging of battery		P
	The supply voltage which is:		P
	- 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or		N/A
	- 1,2 times the upper limit charging voltage resented in Table A.1 per cell for series connected multi-cell batteries, and		P
	- Sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached		P
	Test was continued until the temperature of the outer casing:		P
	- Reached steady state conditions (less than 10 °C change in 30-minute period); or		N/A
	- Returned to ambient		P
	Results: No fire. No explosion..... :	(See appended table 7.3.6)	P
7.3.7	Forced discharge (cells)		N/A
	If the discharge voltage reaches the negative value of upper limit charging voltage within the testing duration, the voltage is maintained at the negative value of the upper limit charging voltage by reducing the current for the remainder of the testing duration		N/A
	If the discharge voltage does not reach the negative value of upper limit charging voltage within the testing duration, the test is terminated at the end of the testing duration		N/A
	Results: No fire. No explosion..... :		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
7.3.8	Mechanical tests (batteries)		P
7.3.8.1	Vibration		P
	Results: No fire, no explosion, no rupture, no leakage or venting. .... :	(See appended table 7.3.8.1)	P
7.3.8.2	Mechanical shock		P
	Results: No leakage, no venting, no rupture, no explosion and no fire .... :	(See appended table 7.3.8.2)	P
7.3.9	Design evaluation – Forced internal short-circuit (cells)		N/A
	The cells complied with national requirement for ..... :		—
	The pressing was stopped upon:		N/A
	- A voltage drop of 50 Mv has been detected; or		N/A
	- The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) has been reached		N/A
	Results: No fire ..... :		N/A

<b>8</b>	<b>INFORMATION FOR SAFETY</b>		<b>P</b>
<b>8.1</b>	<b>General</b>		P
	Manufacturers of secondary cells ensure that information is provided about current, voltage and temperature limits of their products		P
	Manufacturers of batteries ensure that equipment manufacturers and, in the case of direct sales, end-users are provided with information to minimize and mitigate hazards		P
	Systems analyses performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product		P
	As appropriate, any information relating to hazard avoidance resulting from a system analysis provided to the end user		P
	Do not allow children to replace batteries without adult supervision		P
<b>8.2</b>	<b>Small cell and battery safety information</b>		N/A
	The following warning language is to be provided with the information packaged with the small cells and batteries or equipment using them:		N/A
	- Keep small cells and batteries which are considered swallowable out of the reach of children		N/A
	- Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2 h of ingestion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- In case of ingestion of a cell or battery, seek medical assistance promptly		N/A
<b>9</b>	<b>MARKING</b>		<b>P</b>
<b>9.1</b>	<b>Cell marking</b>		N/A
	Cells marked as specified in IEC 61960, except coin cells		N/A
	Coin cells whose external surface area is too small to accommodate the markings on the cells show the designation and polarity		N/A
	By agreement between the cell manufacturer and the battery and/or end product manufacturer, component cells used in the manufacture of a battery need not be marked		N/A
<b>9.2</b>	<b>Battery marking</b>		P
	Batteries marked as specified in IEC 61960, except for coin batteries		P
	Coin batteries whose external surface area is too small to accommodate the markings on the batteries show the designation and polarity. Batteries also marked with an appropriate caution statement		N/A
	Terminals have clear polarity marking on the external surface of the battery		N/A
	Batteries with keyed external connectors designed for connection to specific end products need not be marked with polarity markings if the design of the external connector prevents reverse polarity connections	Built-in battery	N/A
<b>9.3</b>	<b>Caution for ingestion of small cells and batteries</b>		N/A
	Coin cells and batteries identified as small batteries according to 8.2 include a caution statement regarding the hazards of ingestion in accordance with 8.2		N/A
	When small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion given on the immediate package		N/A
<b>9.4</b>	<b>Other information</b>		P
	Storage and disposal instructions		P
	Recommended charging instructions		P
<b>10</b>	<b>PACKAGING AND TRANSPORT</b>		<b>P</b>
	Packaging for coin cells not small enough to fit within the limits of the ingestion gauge of Figure 3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The materials and packaging design are chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants		P

<b>ANNEX A</b>	<b>CHARGING AND DISCHARGING RANGE OF SECONDARY LITHIUM ION CELLS FOR SAFE USE</b>		<b>P</b>
<b>A.1</b>	<b>General</b>		P
<b>A.2</b>	<b>Safety of lithium ion secondary battery</b>		P
<b>A.3</b>	<b>Consideration on charging voltage</b>		P
A.3.1	General		P
A.3.2	Upper limit charging voltage	4,2 V	P
A.3.2.1	General		P
A.3.2.2	Explanation of safety viewpoint		P
A.3.2.3	Safety requirements, when different upper limit charging voltage is applied		P
<b>A.4</b>	<b>Consideration of temperature and charging current</b>		P
A.4.1	General		P
A.4.2	Recommended temperature range		P
A.4.2.1	General		P
A.4.2.2	Safety consideration when a different recommended temperature range is applied	Charging temperature range declared by manufacturer is 0-45 °C	P
A.4.3	High temperature range		N/A
A.4.3.1	General		N/A
A.4.3.2	Explanation of safety viewpoint		N/A
A.4.3.3	Safety considerations when specifying charging conditions in the high temperature range		N/A
A.4.3.4	Safety considerations when specifying a new upper limit in the high temperature range		N/A
A.4.4	Low temperature range	Low charging temperature declared by manufacturer is 0 °C	P
A.4.4.1	General		P
A.4.4.2	Explanation of safety viewpoint		P
A.4.4.3	Safety considerations, when specifying charging conditions in the low temperature range		P
A.4.4.4	Safety considerations when specifying a new lower limit in the low temperature range		P
A.4.5	Scope of the application of charging current		P

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Clause	Requirement + Test	Result - Remark	Verdict
A.4.6	Consideration of discharge		P
A.4.6.1	General		P
A.4.6.2	Final discharge voltage and explanation of safety viewpoint		P
A.4.6.3	Discharge current and temperature range		P
A.4.6.4	Scope of application of the discharging current		P
<b>A.5</b>	<b>Sample preparation</b>		N/A
A.5.1	General		N/A
A.5.2	Insertion procedure for nickel particle to generate internal short		N/A
A.5.3	Disassembly of charged cell		N/A
A.5.4	Shape of nickel particle		N/A
A.5.5	Insertion of nickel particle in cylindrical cell		N/A
A.5.5.1	Insertion of nickel particle in winding core		N/A
A.5.5.2	Marking the position of the nickel particle on both ends of the winding core of the separator		N/A
A.5.6	Insertion of nickel particle in prismatic cell		N/A
<b>A.6</b>	<b>Experimental procedure of the forced internal short-circuit test</b>		N/A
A.6.1	Material and tools for preparation of nickel particle		N/A
A.6.2	Example of a nickel particle preparation procedure		N/A
A.6.3	Positioning (or placement) of a nickel particle		N/A
A.6.4	Damaged separator precaution		N/A
A.6.5	Caution for rewinding separator and electrode		N/A
A.6.6	Insulation film for preventing short-circuit		N/A
A.6.7	Caution when disassembling a cell		N/A
A.6.8	Protective equipment for safety		N/A
A.6.9	Caution in the case of fire during disassembling		N/A
A.6.10	Caution for the disassembling process and pressing the electrode core		N/A
A.6.11	Recommended specifications for the pressing device		N/A
<b>ANNEX B</b>	<b>RECOMMENDATIONS TO EQUIPMENT MANUFACTURERS AND BATTERY ASSEMBLERS</b>		<b>N/A</b>
<b>ANNEX C</b>	<b>RECOMMENDATIONS TO THE END-USERS</b>		<b>N/A</b>
<b>ANNEX D</b>	<b>MEASUREMENT OF THE INTERNAL AC RESISTANCE FOR COIN CELLS</b>		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
<b>D.1</b>	<b>General</b>		N/A
<b>D.2</b>	<b>Method</b>		N/A
	A sample size of three coin cells is required for this measurement..... :		N/A
	Coin cells with an internal resistance of less than or equal to 3 $\Omega$ are subjected to the testing according to Clause 6 and Table 1		N/A
	Coin cells with an internal resistance greater than 3 $\Omega$ require no further testing		N/A
<b>ANNEX E</b>	<b>PACKAGING AND TRANSPORT</b>		<b>N/A</b>
<b>ANNEX F</b>	<b>COMPONENT STANDARDS REFERENCES</b>		<b>N/A</b>

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Critical components information						P
Object / part No.	Manufacturer / trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Cell	TESSON NEW ENERGY(WEI NAN) CO., LTD	TCR18650 2.6Ah	3,7 V, 2600 mAh	IEC 62133-2:2017	Certificate No.: JPTUV-104259	
PCB	SHENZHEN COREPCB TECHNOLOGY CO LTD	GH-4	V-0, 130 °C, 1,6 mm	IEC 62133-2:2017 UL 796	Tested with battery E349020	
Alternative	GUANGDE DONGFENG ELECTRONICS CO LTD	DF-2H	V-0, 130 °C, 1,6 mm	UL 796	E199900	
Alternative	SUZHOU XINKE ELECTRONICS CO LTD	XK-3	V-0, 130 °C, 1,6 mm	UL 796	E231590	
IC (U0 in S6A)	CR Powtech (Shanghai) Co Ltd	PT6303EM SJ-AC	VSS:-0,3 V to +25 V	IEC 62133-2:2017	Tested with battery	
IC (IC in S6B)	CR Powtech (Shanghai) Co Ltd	PT6004ES SX-AA	VSS:-0,3 V to +35 V	IEC 62133-2:2017	Tested with battery	
MOSFET (Q20, Q70 in S6A; Q1, Q2 in S6B)	CR Powtech (Shanghai) Co Ltd	CS90N03 A4	30 V, 90 A	IEC 62133-2:2017	Tested with battery	
NTC (NTC in S6A)	Suzhou Showme Electronic &Technology Co.,Ltd	SE103F343 5FA8MTY	10 KΩ ±1% at 25 °C	IEC 62133-2:2017	Tested with battery	
NTC (NTC in S6B)	Suzhou Showme Electronic &Technology Co.,Ltd	MF52B-100K 1% 104F3950F	100 KΩ ±1% at 25 °C	IEC 62133-2:2017	Tested with battery	
Internal wire	SUZHOU WEIMAO ELECTRONIC CO LTD	1007	300 V, 80 °C, 16 AWG	IEC 62133-2:2017	Tested with battery E485871	
Alternative	SUZHOU DIAN HANG ELECTRONIC CO LTD	1007	300 V, 80 °C, 16 AWG	UL 758	E354173	
Alternative	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1007	300 V, 80 °C, 16 AWG	UL 758	E237831	
Alternative	SUZHOU WEIMAO ELECTRONIC CO LTD	1007	300 V, 80 °C, 16 AWG	UL 758	E485871	
Alternative	DONGGUAN CHENG XING ELECTRONIC CO LTD	1007	300 V, 80 °C, 16 AWG	UL 758	E249743	
Fuse (F1)	SHENZHEN JDIT FUSE INDUSTRIAL CO LTD	JFC1206-2200FS	24 V, 20 A	IEC 62133-2:2017 UL 248-1	Tested with battery E486200	
Enclosure	Nantong Bopu Plastic Co., Ltd	Φ50	Thickness: 0,15±0,03 mm	IEC 62133-2:2017	Tested with battery	
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.						
2) License available upon request.						

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Clause	Requirement + Test	Result - Remark	Verdict

7.2.1	TABLE: Continuous charging at constant voltage (cells)				N/A
Sample no.	Recommended charging voltage Vc (Vdc)	Recommended charging current I <sub>rec</sub> (A)	OCV before test (Vdc)	Results	
<b>Supplementary information:</b>					
<ul style="list-style-type: none"> <li>- No fire or explosion</li> <li>- No leakage</li> <li>- Others (please explain)</li> </ul>					

7.3.1	TABLE: External short-circuit (cell)					N/A
Sample no.	Ambient T (°C)	OCV before test (Vdc)	Resistance of circuit (mΩ)	Maximum case temperature rise ΔT (K)	Results	
<b>Samples charged at charging temperature upper limit</b>						
<b>Samples charged at charging temperature lower limit</b>						
<b>Supplementary information:</b>						
<ul style="list-style-type: none"> <li>- No fire or explosion</li> <li>- Others (please explain)</li> </ul>						

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Clause	Requirement + Test	Result - Remark	Verdict

7.3.2	TABLE: External short-circuit (battery)						P
Sample no.	Ambient T (°C)	OCV before test (Vdc)	Resistance of circuit (mΩ)	Maximum case temperature rise ΔT (K)	Component single fault condition	Results	
S6A (017#)	20,9	12,20	78	0,8	NTC SC	No fire or explosion	
S6A (018#)	20,0	12,11	78	0,2	F1 SC	No fire or explosion	
S6A (019#)	20,7	12,19	78	1,2	Q70 SC	No fire or explosion	
S6A (020#)	20,0	12,10	78	0,3	Q20 SC	No fire or explosion	
S6A (021#)	20,1	12,13	78	0,3	--	No fire or explosion	
S6B (033#)	20,3	16,80	78	2,1	NTC SC	No fire or explosion	
S6B (034#)	20,0	16,81	78	1,3	F1 SC	No fire or explosion	
S6B (035#)	20,2	16,81	78	0,7	Q1 SC	No fire or explosion	
S6B (036#)	20,1	16,81	78	0,6	Q2 SC	No fire or explosion	
S6B (037#)	20,0	16,79	78	0,5	--	No fire or explosion	
<b>Supplementary information:</b> 24 hours elapsed.							
- No fire or explosion							
- Others (please explain)							
- SC=Short Circuit							

7.3.5	TABLE: Crush (cells)				N/A
Sample no.	OCV before test (Vdc)	OCV at removal of crushing force (Vdc)	Maximum force applied to the cell during crush (kN)	Results	
<b>Samples charged at charging temperature upper limit</b>					
<b>Samples charged at charging temperature lower limit</b>					



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Clause	Requirement + Test	Result - Remark		Verdict
<b>Supplementary information:</b>				
- No fire or explosion				
- Others (please explain)				

7.3.6	TABLE: Over-charging of battery				P
Constant charging current (A) .....		5,2		—	
Supply voltage (Vdc) .....		15,12		—	
Sample no.	OCV before charging (Vdc)	Total charging time (minute)	Maximum outer case temperature (°C)	Results	
S6A (022#)	9,87	33	75,5	No fire or explosion	
S6A (023#)	9,81	33	78,1	No fire or explosion	
S6A (024#)	9,84	33	83,1	No fire or explosion	
S6A (025#)	9,54	33	52,7	No fire or explosion	
S6A (026#)	9,69	33	79,0	No fire or explosion	
Constant charging current (A) .....		5,2		—	
Supply voltage (Vdc) .....		20,16		—	
Sample no.	OCV before charging (Vdc)	Total charging time (minute)	Maximum outer case temperature (°C)	Results	
S6B (038#)	12,83	24	44,3	No fire or explosion	
S6B (039#)	12,88	25	45,3	No fire or explosion	
S6B (040#)	12,90	25	42,8	No fire or explosion	
S6B (041#)	12,52	25	42,4	No fire or explosion	
S6B (042#)	12,81	25	44,1	No fire or explosion	

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Clause	Requirement + Test	Result - Remark	Verdict

**Supplementary information:** The test ended when case temperature reached returned to ambient.

- No fire or explosion
- Others (please explain)

7.3.7	TABLE: Forced discharge (cells)				N/A
Sample no.	OCV before application of reverse charge (Vdc)	Measured reverse charge $I_r$ (A)	Lower limit discharge voltage (Vdc)	Results	

**Supplementary information:**

- No fire or explosion
- Others (please explain)

7.3.8.1	TABLE: Vibration					P
Sample no.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results	
S6A (017#)	12,09	12,09	156,4	156,4	No fire or explosion. No rupture or leakage. No venting.	
S6A (018#)	12,05	12,05	156,1	156,1	No fire or explosion. No rupture or leakage. No venting.	
S6A (019#)	12,04	12,04	157,3	157,3	No fire or explosion. No rupture or leakage. No venting.	
S6B (027#)	16,76	16,76	204,1	204,1	No fire or explosion. No rupture or leakage. No venting.	

IEC 62133-2						
Clause	Requirement + Test			Result - Remark		Verdict
S6B (028#)	16,75	16,75	203,5	203,5	No fire or explosion. No rupture or leakage. No venting.	
S6B (029#)	16,79	16,79	204,1	204,1	No fire or explosion. No rupture or leakage. No venting.	
<b>Supplementary information:</b>						
<ul style="list-style-type: none"> <li>- No fire or explosion</li> <li>- No rupture</li> <li>- No leakage</li> <li>- No venting</li> <li>- Others (please explain)</li> </ul>						

7.3.8.2	TABLE: Mechanical shock					P
Sample no.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results	
S6A (21#)	12,18	12,18	156,5	156,5	No fire or explosion. No rupture or leakage. No venting.	
S6A (22#)	12,30	12,30	156,5	156,5	No fire or explosion. No rupture or leakage. No venting.	
S6A (23#)	12,14	12,14	157,3	157,3	No fire or explosion. No rupture or leakage. No venting.	
S6B (043#)	16,79	16,79	203,4	203,4	No fire or explosion. No rupture or leakage. No venting.	
S6B (044#)	16,76	16,76	203,4	203,4	No fire or explosion. No rupture or leakage. No venting.	

IEC 62133-2					
Clause	Requirement + Test			Result - Remark	Verdict
S6B (45#)	16,76	16,76	203,7	203,7	No fire or explosion. No rupture or leakage. No venting.
<b>Supplementary information:</b> - No fire or explosion - No rupture - No leakage - No venting - Others (please explain)					

7.3.9	TABLE: Forced internal short circuit (cells)					N/A
Sample no.	Chamber ambient T (°C)	OCV before test (Vdc)	Particle location <sup>1)</sup>	Maximum applied pressure (N)	Results	
<b>Samples charged at charging temperature upper limit</b>						
<b>Samples charged at charging temperature lower limit</b>						
<b>Supplementary information:</b> <sup>1)</sup> Identify one of the following: 1: Nickel particle inserted between positive and negative (active material) coated area. 2: Nickel particle inserted between positive aluminium foil and negative active material coated area.  - No fire or explosion - Others (please explain)						

IEC 62133-2			
Clause	Requirement + Test	Result - Remark	Verdict

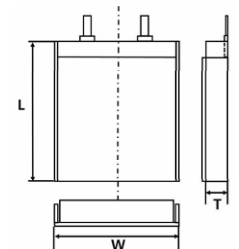
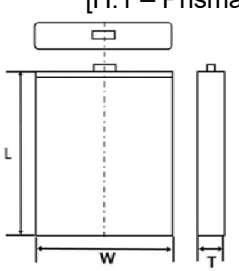
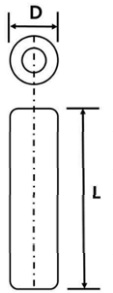
D.2	TABLE: Internal AC resistance for coin cells				N/A
Sample no.	Ambient T (°C)	Store time (h)	Resistance Rac (Ω)	Results <sup>1)</sup>	

**Supplementary information:**  
<sup>1)</sup> Coin cells with internal resistance less than or equal to 3 Ω, see test result on corresponding tables

Attachment I:

IEC62133_2A ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 62133-2</b> <b>(Republic of Korea) NATIONAL DIFFERENCES</b> (Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems)			
Differences according to.....: National standard KC62133-2(2020-07)			
TRF template used:.....: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.....: KR_ND_IEC62133_2A			
Attachment Originator .....: KTR			
Master Attachment.....: Dated 2020-09-25			
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	<b>National Differences</b>		P
<b>7.3.6</b>	<b>Over-charging of battery</b>		P
(Revision)	<b>[Add the bolded text]</b>  b) Test The test shall be carried out in an ambient temperature of 20 °C ± 5 °C. Each test battery shall be discharged at a constant current of 0,2 It A, to a final discharge voltage specified by the manufacturer. Sample batteries shall then be charged at a constant current of 2,0 It A, using a supply voltage which is: <ul style="list-style-type: none"> <li>• 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or</li> <li>• 1,2 times the upper limit charging voltage presented in Table A.1 per cell for series connected multi-cell batteries, and</li> <li>• sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached.</li> </ul> <b><u>• In case the charging voltage specified by the manufacturer is higher than the overcharge test voltage, the maximum charging voltage specified by manufacturer should be applied with 2.0 ItA.</u></b> <b><u>(e.g., quick charging power bank, etc.)</u></b>	The charging voltage specified by the manufacturer is lower than the overcharge test voltage	P

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Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>[Replace to the following statement]</b></p> <p>c) Acceptance criteria</p> <p>Overcharging exceeding to the limits specified by the manufacturer should not result in fire or explosion.</p>		P
<b>Annex D</b>	<b>Definition for shape and materials of outer case for cell</b>		—
(Addition)	<p>G.1 General</p> <p>Annex G provides definitions for shape and materials of outer case for cell</p> <p>G.2 Shape of outer case for cell</p> <p>G 2.1 Cylindrical cell</p> <p>Cell with a cylindrical shape in which the overall height is equal to or greater than diameter.</p> <p>G 2.2 Prismatic cell</p> <p>Cell having the shape of a parallelepiped whose faces are rectangular</p> <p>G.3 Materials of outer case for cell</p> <p>G.3.1 Soft case</p> <p>Non-metallic outer case or container for cell</p> <p>G.3.2 Hard case</p> <p>Metallic outer case or container for cell.</p>	<p>(Shape of outer cases)</p> <p><input checked="" type="checkbox"/> Cylindrical</p> <p><input type="checkbox"/> Prismatic</p> <p>(Materials of outer cases)</p> <p><input checked="" type="checkbox"/> Hard</p> <p><input type="checkbox"/> Soft</p>	—
<b>Annex H</b>	<b>Calculation method of the volumetric energy density for cell</b>		—
(Addition)	<p>Annex H provide a calculation method of the volumetric energy density for cell in use of smart phone, tablet, notebook.</p> <p>H.1 General</p> <p>Unless otherwise stated in the Annex E, the dimensions for calculation are based on these for cell before shipment and the volumetric energy density shall be calculated with a maximum values specified by manufacturer. If the specification for cell can't be provided a dimension for calculation, the manufacturer's other documentation shall be provided to demonstrate compliance for its calculation.</p>	540,5 Wh / L	—

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Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>H.2 Calculation Method</b></p>  <p>L : Length (max.) of cell (including terrace)                      W : Width (max.) of cell                      T : Thickness (max.) when shipping charge                      (For reference, Please Exclude the dimension of any tape that is attached to cell)</p> $\text{Volumetric energy density (Wh/l)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{\text{Length (L)} \times \text{Width (W)} \times \text{Thickness (T)}}$ <p>[H.1 – Prismatic cell using soft case]</p>  <p>L : Length (max.) of cell                      W : Width (max.) of cell                      T : Thickness when shipping charge                      (For reference, Please Exclude the dimension of any tape that is attached to cell)</p> $\text{Volumetric energy density (Wh/l)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{\text{Length (L)} \times \text{Width (W)} \times \text{Thickness (T)}}$ <p>[H.2 – Prismatic cell using hard case]</p>  <p>D : Diameter (max.) of cell                      L : Length (max.) of cell                      (According to shape of cell at shipping, The dimension of tube for cell may be included In overall dimension of cell )</p> $\text{Volumetric energy density (Wh/l)} = \frac{\text{Nominal voltage (V)} \times \text{Rated capacity (Ah)}}{3.14159 \times \frac{\text{Diameter (D)}^2}{4} \times \text{Length(l)}}$ <p>[H.3 – Cylindrical cell using hard case]</p>		



Attachment II:

Photo 1  
Overview of S6A

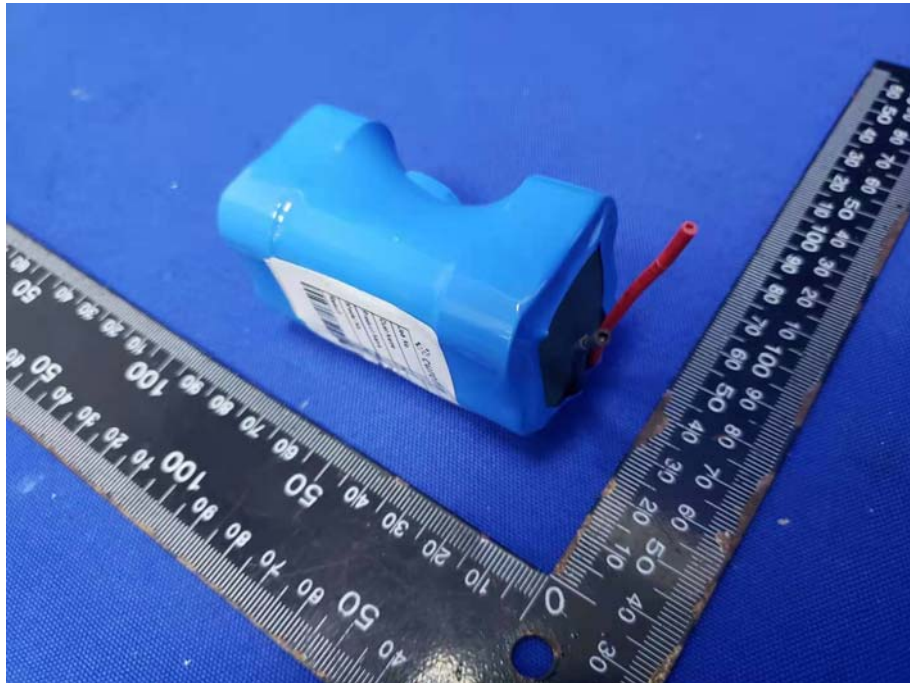


Photo 2  
Overview of S6A



Photo 3  
Internal view of S6A

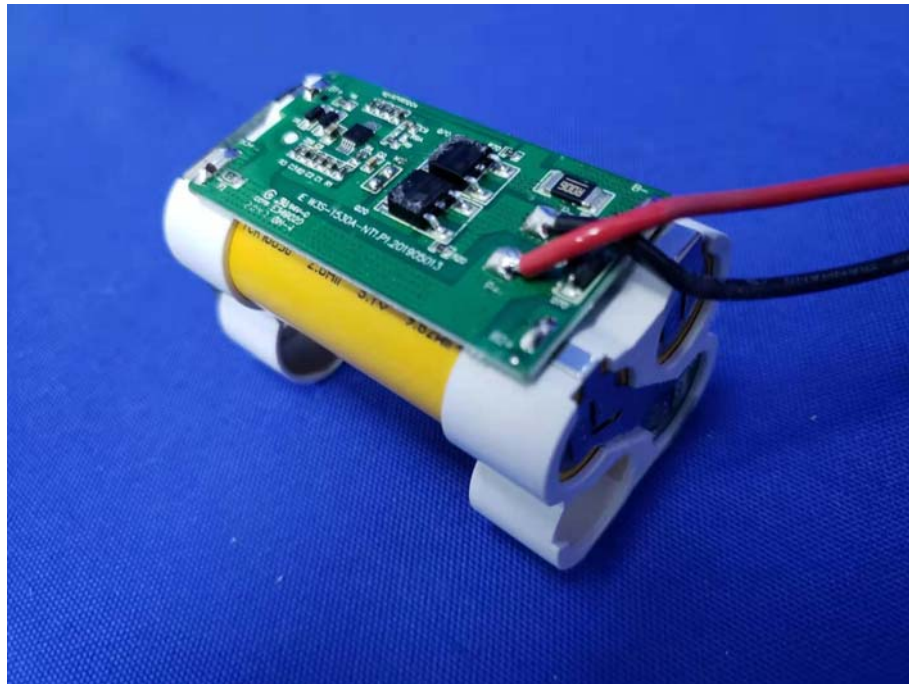


Photo 4  
PCB view of S6A

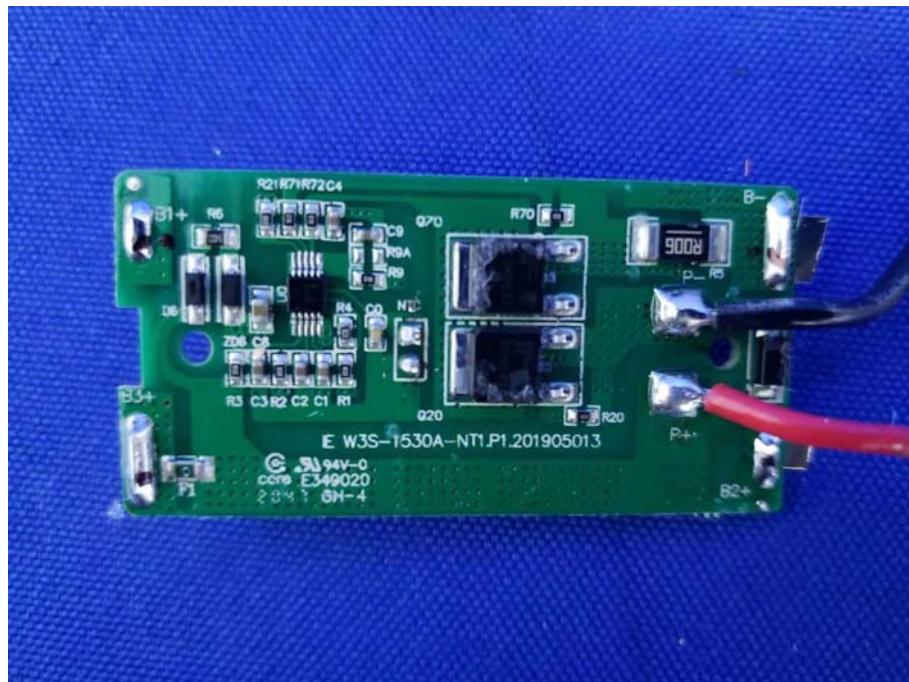


Photo 5  
PCB view of S6A

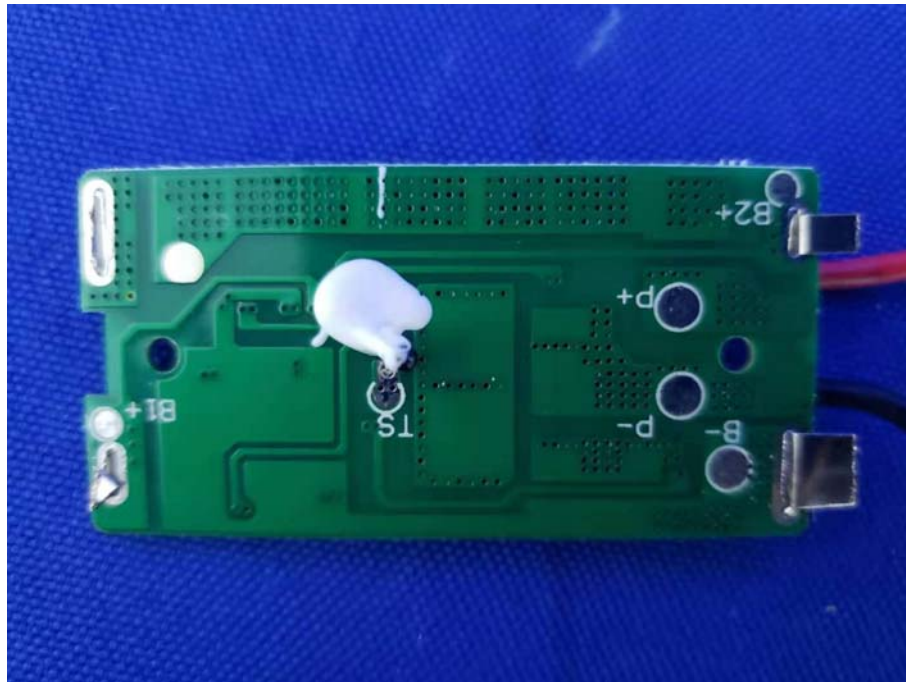


Photo 6  
Overview of S6B



Photo 7  
Overview of S6B



Photo 8  
Internal view of S6B

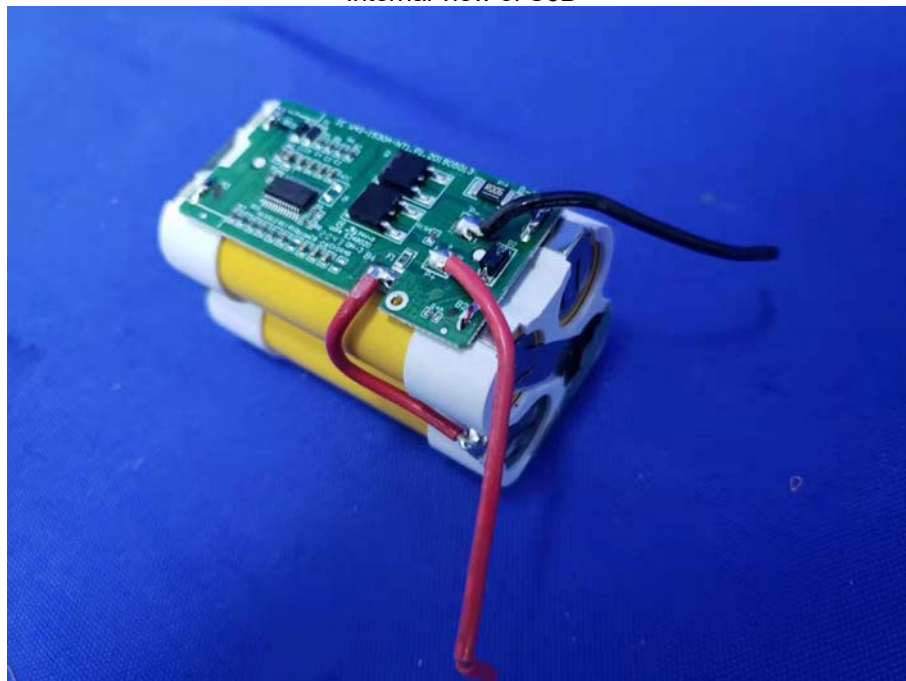


Photo 9  
PCB view of S6B

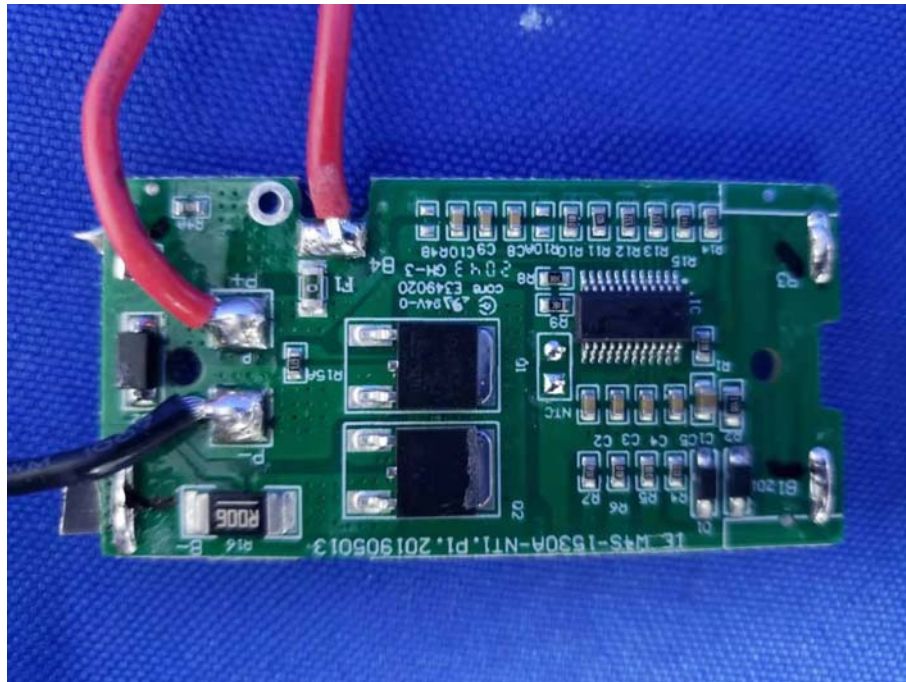


Photo 10  
PCB view of S6B

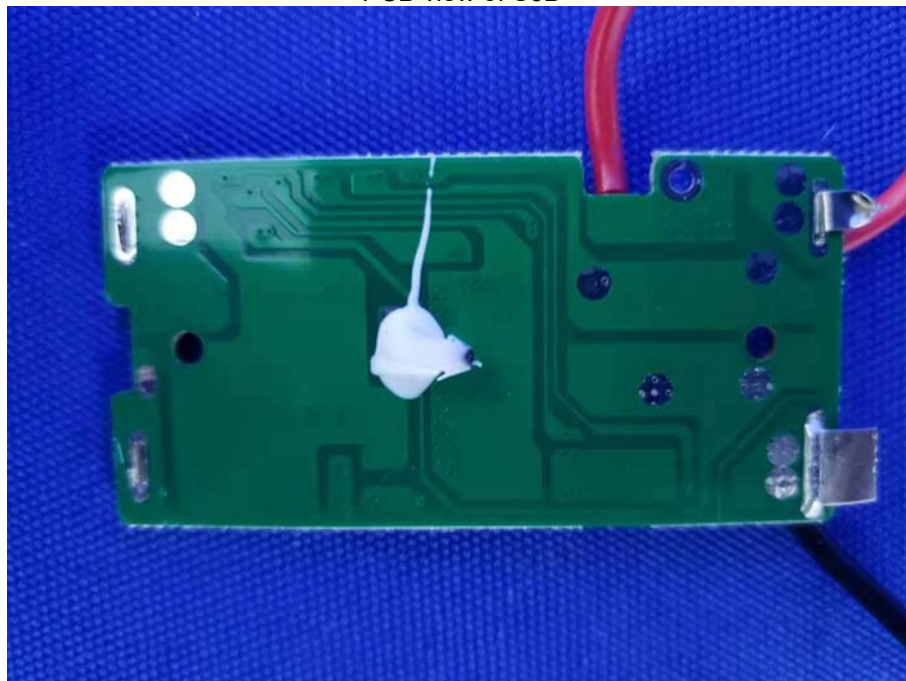


Photo 11  
Cell view of S6A and S6B



=====End of Report=====



Ref. Certif. No.

DE-6-G6210101

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product

Rechargeable Li-ion Battery

Name and address of the applicant

Suzhou Sweep Electric Appliance Co., Ltd.  
No. 525 Pusha Road, Linhu Town, Wuzhong District, Suzhou, Jiangsu  
China

Name and address of the manufacturer

Suzhou Sweep Electric Appliance Co., Ltd.  
No. 525 Pusha Road, Linhu Town, Wuzhong District, Suzhou, Jiangsu  
China

Name and address of the factory

Suzhou Sweep Electric Appliance Co., Ltd.  
No. 525 Pusha Road, Linhu Town, Wuzhong District, Suzhou, Jiangsu  
China

*Note: When more than one factory, please report on page 2ff.*

Ratings and principal characteristics

S6A: 11,1 V, 2600 mAh, 28,86 Wh;  
S6B: 14,8 V, 2600 mAh, 38,48 Wh

Trademark / Brand (if any)

.

Customer Test Facility (CTF) Stage used

.

Model / Type Ref.

S6A; S6B

Additional information (if necessary may also be reported on page 2ff.)

The product fulfils the requirements of EN 62133-2:2017.

A sample of the product was tested and found to be in conformity with

IEC 62133-2:2017

As shown in the Test Report Ref. No. which forms part of this Certificate

*National differences:*  
KR: Republic of Korea  
EFSH21011464-IE-01-L01

This CB Test Certificate is issued by the National Certification Body



**Eurofins Product Service GmbH**  
Storkower Strasse 38C  
DE-15526 Reichenwalde b. Berlin  
Germany

Date: 2021-03-15

Signature: Forest Yi

