

TEST REPORT

IEC 62133: 2012 (2nd Edition)

**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**

Report reference No.: TCT160906B003-1

Tested by (name+ signature): Jokin Teng

Compiled by (+ signature): Liz Zhang

Approved by (+ signature): Tiny Yang

Date of issue: Sep. 20, 2016

Total number of pages: 21 Pages.



Testing laboratory: Shenzhen TCT Testing Technology Co., Ltd.

Address: 1F, Building 1, Yibaolai Industrial Park, Qiaotou Village, Fuyong
Town, Baoan District, Shenzhen, Guangdong, P.R.C (518101)

Testing location: As above

Applicant's name: Quanzhou KAILI Electronics Co., LTD

Address: KAILI Electronic Industrial Park(Photoelectric Information Base),
DAXIAMEI, Nanan, Quanzhou City, Fujian Province

Manufacturer's name: ShenZhen Utility Power Source Co., Ltd.

Address: 1st, 2nd and 3rd Floor of 3A Building, and 3rd Floor of 2B Building,
Huiye Technology Park Office Guangming District, Shenzhen.

Test specification :

Standard: IEC 62133: 2012 (2nd Edition)

Test procedure: Type approved

Procedure deviation: N.A.

Non-standard test method: N.A.

**This test report is specially limited to the above client company and product model only, It may not
be duplicated without prior written consent of TCT Testing Technology.**

Test item description: Li-ion Battery PACK

Trade Mark: ---

Model/type reference: KB-5C

Ratings: 3.7V, 3.7Wh(1000mAh)

Particulars: test item vs. test requirements	
Classification	<input checked="" type="checkbox"/> Li-ion Battery <input type="checkbox"/> Nickel Battery
Dimension	L : 54.0mm W: 35.0mm T : 5.4mm
Shape	<input checked="" type="checkbox"/> Prismatic <input type="checkbox"/> Pouch <input type="checkbox"/> Coin/button <input type="checkbox"/> Cylindrical
Mass of apparatus	23.0g
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P(ass)
- test object does not meet the requirement	F(ail)
Testing:	
Date of receipt of test item	Sep. 06, 2016
Date(s) of performance of test	Sep. 06, 2016 - Sep. 20, 2016
General remarks:	
<p>“(see remark #)” refers to a remark appended to the report, “(see appended table)” refers to a table appended to the report, Throughout this report a comma is used as the decimal separator, 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 testing laboratory, Clause numbers between brackets refer to clauses in IEC 62133(Optional remark).</p>	

General product information:

The battery, model no.: KB-5C, is used in portable applications and consists of One Li-ion Cell, the cell model no.: UW523450AR;

The cells and batteries have been tested and evaluated according to their specified working conditions (as given below), which are provided by client;

Details information of the battery and the cell built in the battery, as following:

Product	Li-ion Cell	Li-ion Battery PACK
Model No.	UW523450AR	KB-5C
Nominal voltage	3.7V	3.7V
Rated capacity	1000mAh	1000mAh
Charge method	Charging the battery with 200mA constant current, 4.2V until current reaches 0.01C (10mA)	Charging the battery with 200mA constant current, 4.2V until current reaches 0.02C (20mA)
Max. Charging Current	1000mA	1000mA
Max. Charging voltage	4.2V	4.2V
End of discharge voltage	3.0V	3.0V
Dimension	49.4x33.8x5.2mm	54.0x35.0x5.4mm
Weight	19.7g	23.0g

Tests are made with the number of batteries specified in IEC 62133 Table 1.

Tests Performed (name of test and test clause):

Tests are made with the number of samples specified in Table 2 of IEC 62133:2012(2nd Edition).

Test items:

- Cl.6 type test conditions
- Cl.8.1 Charging procedures for test purposes
- Cl.8.2.1 Continuous charging at constant voltage (cells)
- Cl.8.3.1 External short circuit(cell)
- Cl.8.3.2 External short circuit(battery)
- Cl.8.3.3 Free fall
- Cl.8.3.4 Thermal abuse (cells)
- Cl.8.3.5 Crush(cells)
- Cl.8.3.6 Over-charging of battery
- Cl.8.3.7 Forced discharge (cells)
- Cl.8.3.8 Transport test
- Cl.8.3.9 Forced internal short circuit (cells)

Testing Location:

Shenzhen TCT Testing Technology Co., Ltd.

1F, Building 1, Yibaolai Industrial Park, Qiaotou Village, Fuyong Town, Baoan District, Shenzhen, Guangdong, P.R.C (518101)

Test conclusion:

The Li-ion Battery PACK submitted by Quanzhou KAILI Electronics Co., LTD. are tested according to IEC 62133: 2012 (2nd Edition) 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.

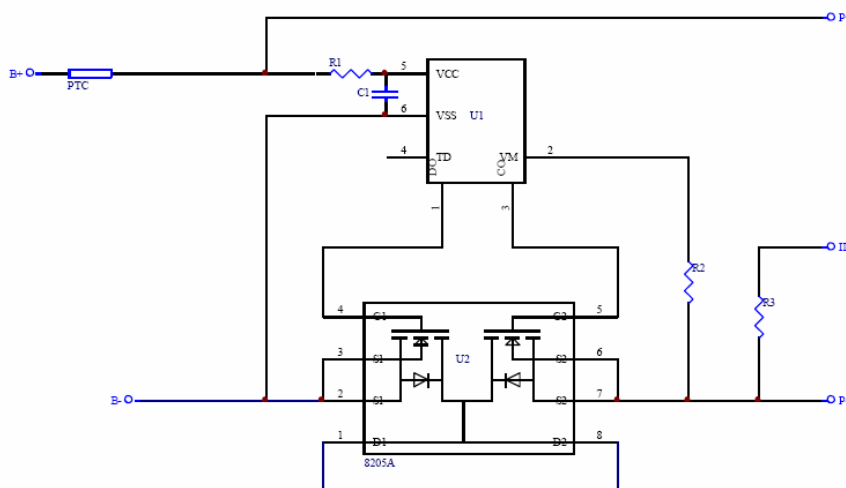
Test result: Pass.

Remarks: The artwork below may be only a draft. at put into market, The use of certification marks on a product;

Copy of marking plate:



Circuit diagram:



PCB BOM List :

Item	Reference	Description	Type
1	PCB	PCB	UTL-063443P-PTC-001
2	U1	IC	S8261ABJMD-G3JT2G
3	U2	MOS	8205A
4	R1	Resistor	470Ω±5%
5	R2	Resistor	2.0KΩ±5%
6	R3	NTC Resistor	10KΩ±1%/NCP18XH103F03RC
7	C1	Capacitor	0.01μF
8	PTC	PTC	1206P110TFT

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
5	General safety considerations		P
	Cells and batteries subject to intended use be safe and continue to function in all respects	Refer to the following clauses.	P
	Cells and batteries subject to reasonably foreseeable misuse do not present significant hazards.	Refer to the following clauses.	P
5.1	General		P
5.2	Insulation and wiring		P
	–Insulation Resistance between an accessible metal case (excluding electrical contacts) and positive terminals $\geq 5M\Omega$.	No accessible metal case exists;	N/A
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		P
	Orientation of wiring maintains adequate creepage and clearance distances between conductors. Mechanical integrity of internal connections is sufficient to accommodate conditions of reasonably foreseeable misuse.		P
5.3	Venting		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 no inhibit pressure relief.	Without encapsulation.	N/A
5.4	Temperature/voltage/current management		P
	The batteries are designed such that abnormal temperature rise conditions are prevented.		P
	Means is provided to limit current to safe levels during charge and discharge.		P
	The batteries are designed such that within temperature, voltage and current limits specified by the cell manufacturer.		P
	Batteries provided with specifications and charging instructions for equipment manufacturers so that associated chargers are designed to maintain charging within the temperature, voltage and current limits specified;	See battery specifications;	P
5.5	Terminal contacts		P
	Terminals have a clear polarity marking on the external surface of the battery	“+” for positive polarity and “-” for negative polarity marking on the label near the terminal	P

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current.		P
	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 circuits.		P
	the external connector prevents reverse polarity connections, Battery packs with keyed external connectors designed for connection to specific end products need not be marked with polarity marking;		N/A
5.6	Assembly of cells into batteries	Only one cell.	P
5.6.1	If there is more than one battery housed in a single battery case, cells used in the assembly of each battery have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer		N/A
	Each battery has an independent control and protection		N/A
	Manufacturers of cells make recommendations about current, voltage and temperature limits so that the battery manufacturer/designer may ensure proper design and assembly		N/A
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate separate circuitry to prevent the cell reversal caused by uneven discharges		N/A
	Protective circuit components are added as appropriate and consideration given to the enddevice application		N/A
	When testing a battery, the manufacturer of the battery provides a test report confirming the compliance according to this standard		N/A
5.6.2	Design recommendation for lithium system only		P
	For the battery consisting of a single cell or a single cellblock: - Charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Clause 8.1.2, Table 4;		P

IEC 62133: 2012			
Clause	Requirement – Test	Result - Remark	Verdict
	- Charging voltage of the cell does not exceed the different upper limit of the charging voltage determined through Clause 8.1.2, NOTE 1.		N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks: - The voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Clause 8.1.2, Table 4, by monitoring the voltage of every single cell or the single cellblocks;		N/A
	- The voltages of any one of the single cells or single cellblocks does not exceed the different upper limit of the charging voltage, determined through Clause 8.1.2, NOTE 1, by monitoring the voltage of every single cell or the single cellblocks		N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks: - Charging is stopped when the upper limit of the charging voltage, specified in Clause 8.1.2, Table 4, is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks;		N/A
	- Charging is stopped when the upper limit of the different charging voltage, determined through Clause 8.1.2, NOTE 1, is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks		N/A
5.7	Quality plan		P
	The manufacturer has prepared a quality plan defining the procedures for the inspection of materials, components, cells and batteries and which covers the process of producing each type of cell and battery.	The manufacturer has ISO 9001:2008 certificate and such quality plan.	P

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

6	Type test conditions		P
	Tests were conducted with the number of cells or batteries as outlined in Table 2 of IEC 62133 with cells or batteries that were not more than six months old.	Tests are made with the number of batteries specified in Table 2. battery are not more than six months old.	P
	Unless noted otherwise in the test methods, testing was conducted in an ambient of 20°C ± 5°C.	Tests are carried out at 20°C ± 5°C.	P

8	Specific requirements and tests		P
8.1	Charging procedure for test purposes		P
8.1.1	First procedure		-
	Test is carried out at 20°C±5°C. Charging method declared by the manufacturer.		P
	Prior to charging, the battery shall have been discharged at 20 °C ± 5 °C at a constant current of 0,2 It A down to a specified final voltage.		P
8.1.2	Second procedure		-
	For clause 8.3.1, 8.3.2, 8.3.4, 8.3.5, and 8.3.9 charging procedure After stabilization for 1 to 4 hours respectively at ambient temperature of highest test temperature and lowest test temperature, as specified in Table 4		-
	cells are charged by using the upper limited charging voltage and maximum charging current, until the charging current is reduced to 0,05 It A, using a constant voltage charging method.		-
	- Upper limit charging voltage	4.25V/cell	-
	- Maximum charging current Specified by the manufacturer of cells	1000mA	-
	Charging temp. Upper limit	45°C	-
	Charging temp. Lower limit	10°C	-

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

8.2	Intended use			P			
8.2.1	Continuous charging at constant voltage (cells)			P			
	Fully charged cells are subjected for 7 days to a charge as specified by the manufacturer.			P			
	Results:: No fire, no explosion, no leakage		See below table;	P			
Sample No.	Model	Recommended Charging Method, CC, CV, or CC/CV	Recommended Charging Voltage Vc, Vdc	Recommended Charging Current Irec, A	OCV at Start of Test, Vdc	Results	P
C01	UW523450A R	CC/CV	4.20	0.2	4.18	NF,NE	P
C02	UW523450A R	CC/CV	4.20	0.2	4.19	NF,NE	P
C03	UW523450A R	CC/CV	4.20	0.2	4.18	NF,NE	P
C04	UW523450A R	CC/CV	4.20	0.2	4.18	NF,NE	P
C05	UW523450A R	CC/CV	4.20	0.2	4.19	NF,NE	P

supplementary information:

- NF: No Fire
- NE: No Explosion
- NL: No Leakage
- Fire: the emission of flames from a cell or battery.
- Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled.
- Leakage: visible escape of liquid electrolyte.

8.2.2	Moulded case stress at high ambient temperature (battery)			N/A
	Fully charged batteries according to the first procedure in 8.1.1, the batteries were placed in an air-circulating oven at a temperature of 70°C ± 2°C for 7 hours. Afterwards, they are removed and allowed to return to room temperature.			N/A
	Results: no physical distortion of the battery casing resulting in exposure of internal components.			N/A
Sample No.				N/A
Status	No evidence of mechanical damage No physical distortion of the battery case resulting in exposure of internal components.			

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

8.3	Reasonably foreseeable misuse			P			
8.3.1	External short circuit (cell)			P			
	Fully charged each cell according to the second procedure in 8.1.2;			P			
	Fully charged cells were subjected to a short circuit test at 20°C ± 5°C.			P			
	The external resistance of 80 ± 20 mΩ.			P			
	The cells were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise.			P			
	Results: no fire, no explosion.			P			
	After the test		See below	P			
Sample No.	Ambient temperature (At 20°C ± 5°C)	OCV at start of test (Vdc)	Max. External Temperature (°C)	Resistance of Circuit (mΩ)	Charging temp. Upper limit (°C)	Results	P
C06	25.0	4.21	97.2	73	45	NF,NE	P
C07	25.0	4.21	96.5	72	45	NF,NE	P
C08	25.0	4.22	97.8	72	45	NF,NE	P
C09	25.0	4.21	95.3	71	45	NF,NE	P
C10	25.0	4.22	98.1	72	45	NF,NE	P
Sample No.	Ambient temperature (At 20°C ± 5°C)	OCV at start of test (Vdc)	Max. External Temperature (°C)	Resistance of Circuit (mΩ)	Charging temp. Lower limit (°C)	Results	P
C11	25.0	4.17	92.2	70	10	NF,NE	P
C12	25.0	4.18	95.1	72	10	NF,NE	P
C13	25.0	4.18	92.8	72	10	NF,NE	P
C14	25.0	4.19	95.6	72	10	NF,NE	P
C15	25.0	4.19	92.4	72	10	NF,NE	P
supplementary information							
<ul style="list-style-type: none"> - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled. 							

IEC 62133: 2012

Clause	Requirement – Test				Result - Remark		Verdict
8.3.2	External short circuit (battery)						P
	Fully charged each battery according to the second procedure in 8.1.2;						P
	Fully charged batteries were subjected to a short circuit test at 55°C ± 5°C.						P
	The external resistance of 80 ± 20 mΩ.						P
	The battery pack were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise.						P
	In case of rapid decline in short circuit current, the battery pack should remain on test for an additional one hour after the current reaches a low end steady state condition. This typically refers to a condition where the per cell voltage (series cells only) of the battery is below 0,8 V and is decreasing by less than 0,1 V in a 30-minute period.						N/A
	Results: no fire, no explosion.						P
	After the test				See below		P
Sample No.	Ambient temperature (At 55°C ± 5°C)	OCV at start of test (Vdc)	Max. External Temperature (°C)	Resistance of Circuit (mΩ)	Charging temp. Upper limit (°C)	Results	P
B01	55.0	4.21	55.3	70	45	NF,NE	P
B02	55.0	4.21	55.4	71	45	NF,NE	P
B03	55.0	4.22	55.5	72	45	NF,NE	P
B04	55.0	4.21	55.4	71	45	NF,NE	P
B05	55.0	4.22	55.3	72	45	NF,NE	P
Sample No.	Ambient temperature (At 55°C ± 5°C)	OCV at start of test (Vdc)	Max. External Temperature (°C)	Resistance of Circuit (mΩ)	Charging temp. Lower limit (°C)	Results	P
B06	55.0	4.17	55.4	71	10	NF,NE	P
B07	55.0	4.18	55.3	70	10	NF,NE	P
B08	55.0	4.18	55.2	71	10	NF,NE	P
B09	55.0	4.17	55.3	71	10	NF,NE	P
B10	55.0	4.17	55.3	72	10	NF,NE	P
supplementary information - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled.							

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
8.3.3	Free fall		P
	Ambient temperature of $20 \pm 5^{\circ}\text{C}$		P
	Fully charged cells or batteries were dropped 3 times from a height of 1.0 m onto a concrete floor.	Three times	P
	After the test, the cell or battery shall be put on rest for a minimum of one hour and then a visual inspection shall be performed.		-
	Results: no fire, no explosion		P
Sample No.	C16	C17	C18
Status	NF, NE	NF, NE	NF, NE
Sample No.	B11	B12	B13
Status	NF, NE	NF, NE	NF, NE
supplementary information: - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled.			

8.3.4	Thermal abuse (cells)		P		
	Fully charged cells were placed in a gravity or circulating air-convection oven. The oven temperature was raised at a rate of $5^{\circ}\text{C}/\text{min} \pm 2^{\circ}\text{C}/\text{min}$ to a temperature of $130^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The cell remained at that temperature for 10 minutes before the test was terminated.		P		
	Results: no fire, no explosion		P		
After the test (Charging temp. Upper limit 45°C)					
Sample No.	C19	C20	C21	C22	C23
Status	NF, NE	NF, NE	NF, NE	NF, NE	NF, NE
After the test (Charging temp. Lower limit 10°C)					
Sample No.	C24	C25	C26	C27	C28
Status	NF, NE	NF, NE	NF, NE	NF, NE	NF, NE
supplementary information: - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled.					

IEC 62133: 2012					
Clause	Requirement – Test			Result - Remark	Verdict
8.3.5	Crush (cells)				P
	Each fully charged cell, charged according to the second procedure at the upper limit charging temperature in 8.1.2, is immediately transferred and crushed between two flat surfaces in an ambient temperature.				P
	Fully charged cells were crushed between two flat surfaces with a hydraulic ram exerting a force of 13 kN ± 1 kN.				P
	The crushing is performed in a manner that will cause the most adverse result.			See below	P
	- Once the maximum force has been applied,				P
	- or an abrupt voltage drop of one-third of the original voltage has been obtained,				N/A
	- or 10 % of deformation has occurred compared to the initial dimension, the force is released (whichever condition occurs first should be the indication that the force should be released).				N/A
	A cylindrical or prismatic cell was crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus. Test only the wide side of prismatic cells.				P
	Results: no fire, no explosion.				P
After the test (Charging temp. Upper limit 45°C)					
Sample No.	C29	C30	C31	C32	C33
Status	NF, NE	NF, NE	NF, NE	NF, NE	NF, NE
Supplementary information:					
<ul style="list-style-type: none"> - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled. 					

IEC 62133: 2012							
Clause	Requirement – Test			Result - Remark		Verdict	
8.3.6	Over-charging of battery					P	
	The test shall be carried out in an ambient temperature of +20 ° C ± 5 ° C.					P	
	Each test battery shall be discharged at a constant current of 0,2 It A, to a final discharge voltage specified by the manufacturer.					P	
	A discharged battery was charged from a power supply of 5.0V per cell or not to exceed the maximum voltage supplied by the recommended charger, at a charging current of 2.0 It A. Total Time of Charging: The test shall be continued until the temperature of the outer casing reaches steady state conditions (less than 10 °C change in 30-minute period) or returns to ambient.					P	
	Results: no fire, no explosion.					P	
	After the test			No fire, no explosion.		P	
Sample no.	Model	OCV at start of test (Vdc)	Maximum Charging Current (2.0 It A)	Maximum Charging Voltage (Vdc)	Total Time of Charging (h)	temperature of the outer casing (°C)	Results
B14	KB-5C	3.33	2.0	5.0	≤0.1	25.8	NF,NE
B15	KB-5C	3.32	2.0	5.0	≤0.1	25.5	NF,NE
B16	KB-5C	3.33	2.0	5.0	≤0.1	25.1	NF,NE
B17	KB-5C	3.34	2.0	5.0	≤0.1	25.8	NF,NE
B18	KB-5C	3.33	2.0	5.0	≤0.1	25.7	NF,NE
Supplementary information: - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled. Remark: Total time of charging ≤0.1h means the PCB protection in a flash.							

IEC 62133: 2012

Clause	Requirement – Test		Result - Remark	Verdict	
8.3.7	Forced discharge (cells)			P	
	A discharged cell is subjected to a reverse charge at 1 It A for 90 min.			P	
	Results: no fire, no explosion			P	
Sample no.	Model	OCV before application of reverse charge (Vdc)	Measured Reverse Charge It (A)	Total Time for Reversed Charge Application (Min)	Results
C39	UW523450A R	3.31	1.0	90	NF,NE
C40	UW523450A R	3.26	1.0	90	NF,NE
C41	UW523450A R	3.27	1.0	90	NF,NE
C42	UW523450A R	3.32	1.0	90	NF,NE
C43	UW523450A R	3.34	1.0	90	NF,NE
Supplementary information: - NF: No Fire - NE: No Explosion - Fire: the emission of flames from a cell or battery. - Explosion: failure that occurs when a cell container or battery case opens violently and major components are forcibly expelled.					

IEC 62133: 2012			
Clause	Requirement – Test	Result - Remark	Verdict
8.3.8	Transport test	Tested complied.	P
	Manufacturer's documentation provided to show compliance with UN Recommendations on Transport of Dangerous Goods	Tested complied.	P
	Testing laboratory	Shenzhen TCT Testing Technology Co., Ltd.	P
8.3.9	Design evaluation – Forced internal short circuit (cells)		N/A
	The cells complied with national requirement for:	Only applicable to France, Japan, Korea and Switzerland;	---
	1) Number of samples		N/A
	This test shall be carried out on five secondary (rechargeable) lithium-ion cells.		N/A
	2) Charging procedure		N/A
	i) Conditioning charge and discharge		N/A
	ii) Storage procedure		N/A
	iii) Ambient temperature		N/A
	iv) Charging procedure for forced internal short test		N/A
	3) Pressing the winding core with nickel particle		N/A
	No fire.		N/A

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

8.3.9	TABLE: Forced internal short circuit (cells)					N/A
Model	Chamber ambient, (°C)	OCV at start of test, (Vdc)	Particle location ¹⁾	Maximum applied pressure, (N)	Voltage drop, (mV)	Results
C44						
C45						
C46						
C47						
C48						
C49						
C50						
C51						
C52						
C53						

Supplementary information:

1) 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

9	Information for safety		P
	Information is provided to equipment manufacturers in the form of instructions to minimize and mitigate hazards associated with the cells or batteries in accordance with guidelines outlined in informative Annex B.		P
	Information is provided to end-users in the form of instructions to minimize and mitigate hazards associated with the batteries in accordance with guidelines outlined in informative Annex C.		P

10	Marking		P
10.1	Cell marking		N/A
	Rechargeable Li or Li-ion		N/A
	Battery designation		N/A
	Polarity of terminal		N/A
	Date of manufacture		N/A

IEC 62133: 2012

Clause	Requirement – Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

	Name or identification of the manufacturer or supplier		N/A
	Nominal voltage(V)		N/A
	Rated Capacity (mAh)		N/A

10.2	Battery marking	See below	P
	Rechargeable Li or Li-ion	Rechargeable Li-ion	P
	Battery designation	Li-ion Battery PACK	P
	Polarity of terminal	On the battery	P
	Date of manufacture	See labeling	P
	Name or identification of the manufacturer or supplier	ShenZhen Utility Power Source Co., Ltd.	P
	Nominal voltage(V)	3.7V	P
	Rated Capacity (mAh)	1000mAh	P
	Caution statement		P
10.3	Other information		P
	Disposal instructions are marked on the battery or supplied in the information packaged with the battery.	See Specification book	P
	Recommended charging instruction are marked on the battery or supplied in the information packaged with the battery.	See Specification book	P

11	Packaging		P
	Cells or batteries were provided with packaging that was adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design was chosen to prevent the development of unintentional electrical conduction, corrosion of the terminal and ingress of moisture.		P

Photos

Model: KB-5C



Photo 1 Over view

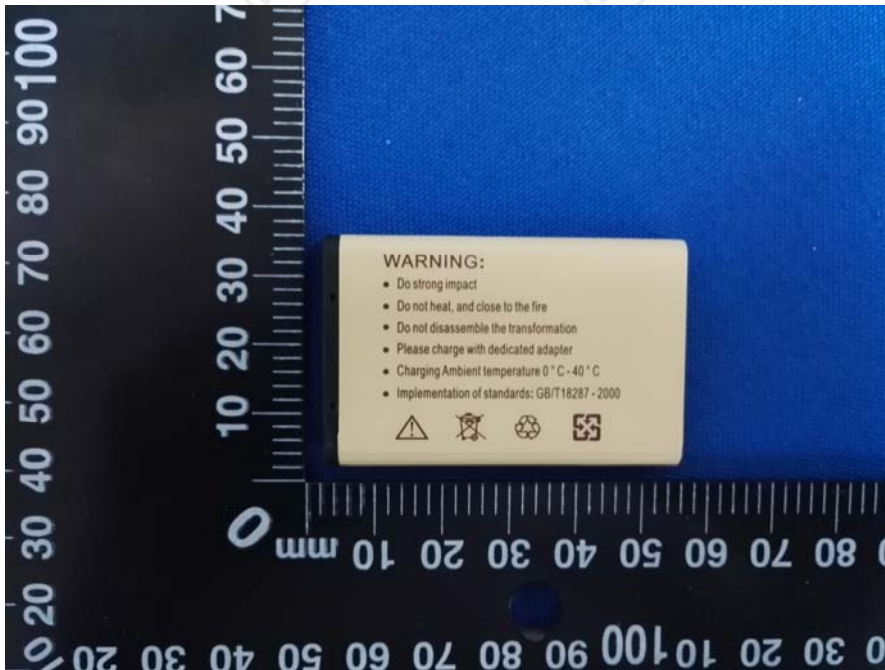


Photo 2 Over view

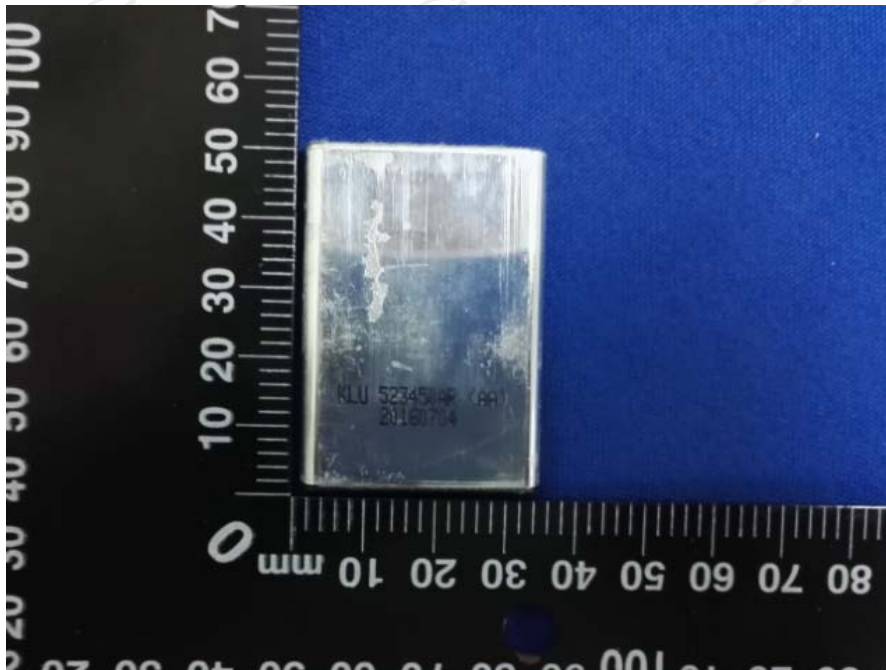


Photo 3 Internal Cell

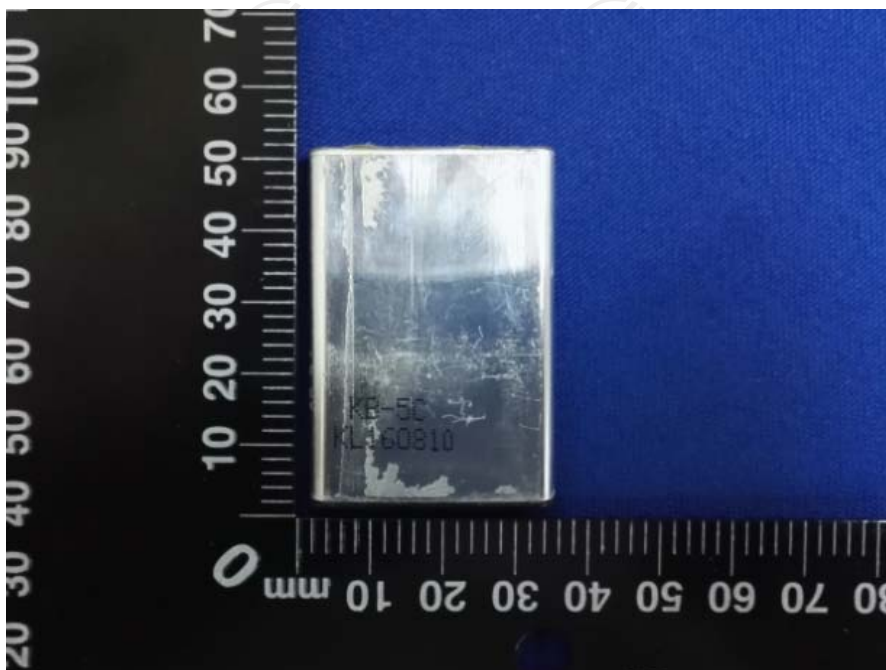


Photo 4 Internal Cell

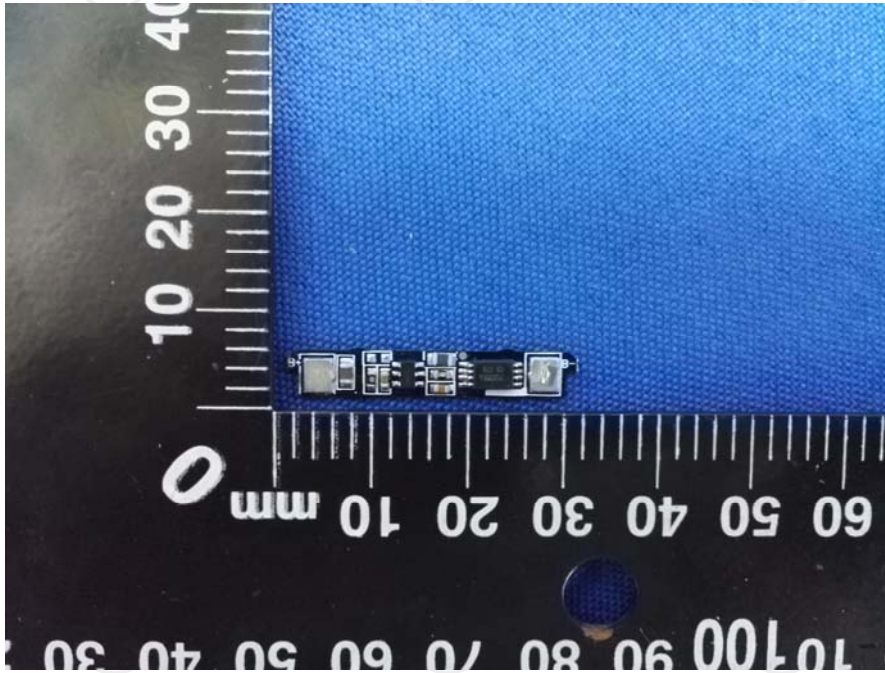


Photo 5 Protection board

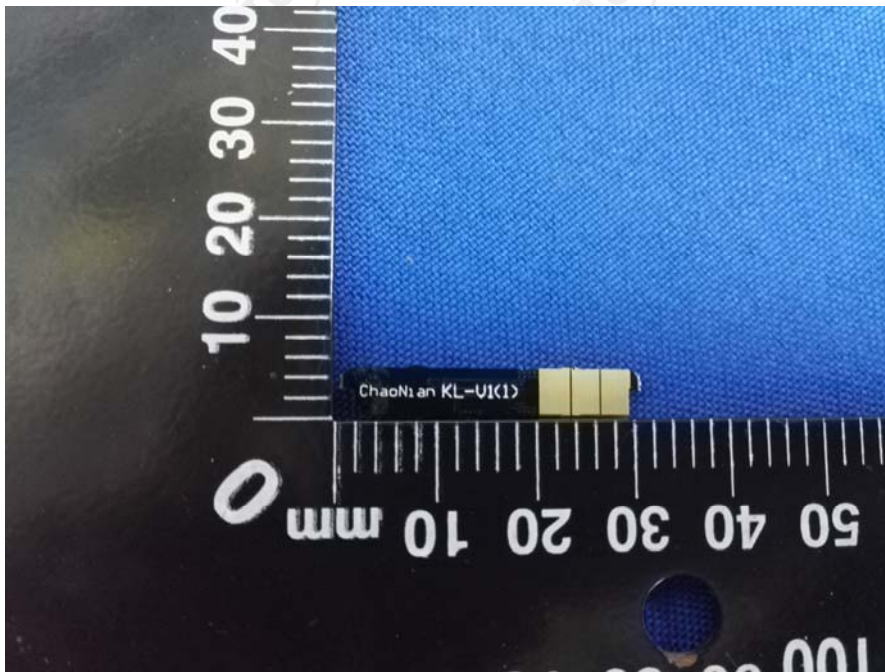


Photo 6 Protection board

*** End of Test Report ***

Report No.: TCT160906B003-1

Shenzhen TCT Testing Technology Co., Ltd.
1F, Building 1, Yibaolai Industrial Park, Qiaotou Village, Fuyong Town, Baoan District, Shenzhen,
Guangdong, P.R.C (518101)
Search Number: TCT160906B003-1C
Search System: <http://www.tct-lab.com/cn/search.asp>