

Shenzhen Suyu Technology Co.,Ltd

产品规格书

Product Specifications

Model: 853535P-1050mAh

Approved	Checked	Drawer



Shenzhen Suyu Technology Co.,Ltd

853535P-1050mAh Specification

1 Model:

2.1 Li-polymer battery

2.2 Model: 853535P-1050mAh

2 Details:

Items			Remarks
2.1 Capacity	Standard capacity	1050mAh	Discharge current : 0.5 C ₅ A Ending discharge voltage : 3.0V
	Minimum capacity	1000mAh	
2.2 Standard Voltage		3.7V	Discharge current : 0.5 C ₅ A Ending discharge voltage : 3.0V
2.3 Internal resistance		≤80mΩ	
2.4 Ending discharge voltage		3.00V	
2.5 Charging Current		525mA	Standard Charging current 0.5 C ₅ A
2.6 The max charging voltage		4.250V	
2.7 Discharging time		About 2.5H	
2.8 The max continue discharging current		525mA	1.0 C ₅ A
2.9 Weight		no	
2.10 Working Temperature	Charging	0~+45℃	
	Discharging	-20~+60℃	
2.11 Storage Temperature	Less than 1month	-20~+45℃	Shipping temperature 20℃
	Less than 3month	-10~+45℃	

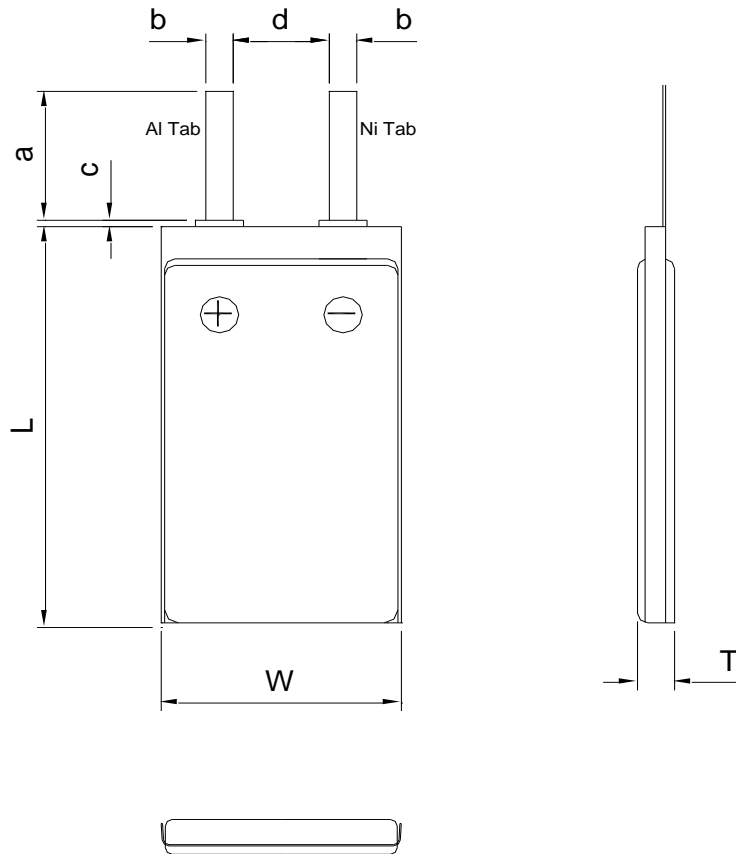


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853535P-1050mAh Specification

853535P-1050mAh

11 853535P-1050mAh Size picture



4.1 the dimensions

Thickness: 8.7 mm or less (when the measurement instrument of pressure acting on the battery is 300 gf, temperature of 25 + 2 °C)

Width: 35.0 + / - 0.5 mm

Length: 36.0 + / - 1.5 mm

Note: the battery storage or use inflation happens at high temperature.

4.2 appearance

Cell surface clean, no electrolyte leakage, no obvious scratches and mechanical damage, no deformation, no other cosmetic defects affect the value of a battery.

5 performance

5.1 standard test conditions

Test the battery must be our company delivery time not more than a month of the new battery, and battery has not been more than five times the charge and discharge cycle. Unless other special requirements, the provisions of this product specification of test condition is: temperature of 25 + 2 °C, relative humidity 45% ~ 85%. If have proved that the test result is not affected by these test conditions, the experiment is also available in 15 ~ 30 °C temperature, relative humidity 25% ~ 85% under the conditions of.



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5.2 test equipment requirements

5.2.1 precision measuring instrument for size should be greater than or equal to 0.01 mm.

5.2.2 multimeter to measure the accuracy of voltage and current shall be not less than 0.5 on the Richter scale, measure the voltage when the internal resistance should not be less than 10 k Ω /V.

5.2.3 requires internal resistance tester measuring principle should be 1 KHZ (LCR) ac impedance method.

5.2.4 battery testing system of current accuracy should be + / - 0.1%, constant pressure plus or minus 0.5% accuracy, timing accuracy is not lower than + / - 0.1%.

5.2.5 instrument of temperature measurement accuracy should be not less than plus or minus 0.5 $^{\circ}$ C.

5.3 standard charge

Test conditions and steps:

0.5 C5A = 525 ma

Under the condition of the ambient temperature of 25 + 2 $^{\circ}$ C C5A constant-current charging current at 0.5 to 0.5 V, and then turn to constant voltage charging, until the charging current is less than or equal to 30 ma, total charging time not more than 2.5 hours, stop charging.

5.4 on time

If no special request, the battery charge and discharge interval for 30 min.

5.5 the initial performance test

project	The test method	request
(1)open circuit voltage	Within 24 hours after standard charge, measuring the battery open circuit voltage	$\geq 4.10V$
(2) AC internal resistance	Standard charge, 25 + 2 $^{\circ}$ C communication method is used to 1 KHZ (LCR) internal resistance measurement	$\leq 150m\Omega$
(3) 0.5 C capacity test	After standard charge, put aside 30 min to 0.5 C5A (525 ma) discharge to 3.000 V, test battery capacity	Discharge capacity $\geq 1000mAh$

5.6 e-test

5.6.1 discharge temperature characteristic

Battery in 25 + 2 $^{\circ}$ C standard charge, and then cooling or heating in 30 minutes to test temperature. Prior to discharge the battery at this temperature for 2 hours, constant exile electric to cut-off voltage of 3.000 V, 0.2 C5A discharge current, after doing an experiment temperature, battery placed 2 h at room temperature and then to charge (25 + 2 $^{\circ}$ C), the requirement is as follows:

Discharge temperature	-20 $^{\circ}$ C	25 $^{\circ}$ C	60 $^{\circ}$ C
Discharge capacity	70%	100%	80%

5.6.2 cycle performance

5.6.2.1 standard charge, put aside 30 min, 0.5 to 3.000 V C5A discharge, suspended 30 min, repeat the above steps for circulation, until the battery discharge capacity 3 consecutive 80% or less 3 weeks discharge capacity, to test the temperature of 25 + 2 $^{\circ}$ C (important parameters affecting cell cycle performance), requirements are as follows:

Cycling times ≥ 300

5.6.2.2 standard charge, put aside 30 min, 1 to 3.000 V, c5a discharge aside 30 min, repeat the above steps for circulation, until the battery discharge capacity 3 consecutive 80% or less 3 weeks discharge capacity, to test the temperature of 25 + 2 °C (important parameters affecting cell cycle performance), requirements are as follows:

Cycling times ≥ 100

5.6.3 charged maintenance ability

project		The test method	request
Room temperature storage	1	After standard charge, the battery in the environment of the 25 + 2 °C storage for 30 days, test 0.2 C5A discharge capacity (keep capacity)	Capacity to keep $\geq 88\% C_5$
	2	After the discharge, charge standard, 0.2 C5A constant exile electric loop 3 times, test recovery capacity maximum discharge capacity (3 weeks)	Capacity to restore $\geq 94\% C_5$
High temperature storage	1	After standard charge batteries in the environment of the 60 + 2 °C storage, 7 days test 0.2 C5A discharge capacity (keep capacity)	Capacity to keep $\geq 70\% C_5$
	2	After the discharge, charge standard, 0.2 C5A constant exile electric loop 3 times, test recovery capacity maximum discharge capacity (3 weeks)	Capacity to restore $\geq 85\% C_5$

5.6.4 long-term storage performance

Battery should choose the production dates to the experiment date less than 3 months of battery, storage battery before filling the 50% of capacity, and then open the way for 365 days, under the condition of 25 + 2 °C environment 0.2 C5A cycle three times, test recovery capacity maximum discharge capacity (3 weeks), requirements are as follows:

Restores $\geq 85\%$

5.7 mechanical properties

project	The test method	request
vibration	Standard charge, install the battery on the vibration table, in the X, Y, Z three experiment of vertical direction vibration frequency between 10 ~ 55 hz to 1 hz/min speed change, reciprocating vibration for 30 min. Vibration frequency: 10 ~ 30 Hz displacement amplitude: 0.38 mm Vibration frequency: 30 to 55 Hz displacement amplitude: 0.19 mm	Battery appearance has no obvious damage, leakage, smoking or explosion, the battery voltage $\geq 4.0V$
Free fall	After the vibration test battery free drop test according to the following conditions: Drop height: 1.2 m; To undertake: 18 ~ 20 mm thick hard wood; Drop direction: positive and negative along the horizontal direction each drop at a time.	Battery appearance has no obvious damage, leakage, smoking or explosion

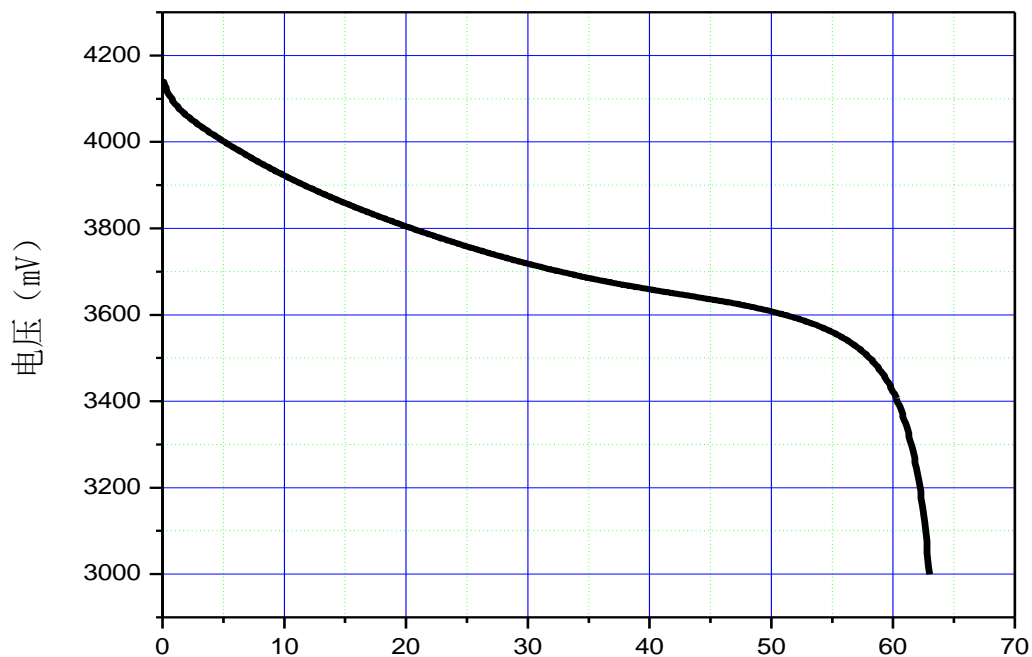
5.8 safety performance

project	The test method	request
Thermal shock	Charging standard, and let sit 24 h, and then put the battery in hot box, hot box temperature for the solution of $(5 + 2 \text{ } ^\circ\text{C})$ rose to $130 + 2 \text{ } ^\circ\text{C}$ / min rate and thermal insulation for 30 min	No fire, no explosion
charging	After charging standards, puts the battery with the thermocouple in the fume hood, batteries and slide rheostat in series on a constant current constant voltage source, the voltage of 4.8 V, through to 3 c5a slide rheostat to adjust current, then the battery charging with 3 c5a, testing process monitoring battery temperature change, when the battery temperature down to about $10 \text{ } ^\circ\text{C}$ lower than the peak, the end of the experiment. Testing is not required in the process of current keep 3 c5a.	No fire, no explosion
A short circuit	After charging standards, puts the battery with the thermocouple in the fume hood, a short circuit is the cathode (line resistance is not more than $100 \text{ m } \Omega$), test in the process of monitoring the battery temperature change, when the battery temperature down to about $10 \text{ } ^\circ\text{C}$ lower than the peak, the end of the test.	Battery, no fire, no explosion temperature shall not be higher than outside 130°C

Note: the short circuit at ear fuse is a normal phenomenon

6 discharge curve

1C放电曲线



7 battery usage guidelines

Carefully read the following precautions to ensure the correct use of lithium ion batteries Shenzhen Suyu Technology Co., Ltd in violation of the following considerations shall not be responsible for any problem.

Dangerous!

Don't read carefully the following matters may cause battery leakage, explosion, or fire.

- do not put the battery into the water or the wet;
- do not near the heat source (such as fire or heater) use or storage battery;
- please use original charger,

Across the electrodes - you will answer the reverse;

- do not connect the battery directly into a wall outlet or car cigarette socket.
- do not put the battery into the fire or heat battery;
- banning the batteries with wires or other metal objects are negative short circuit, it is forbidden to battery with necklace, hairpin, or other metal objects transport or storage;
- it is prohibited to hit, throw, or make a battery by mechanical vibration;
- ban with nails or other sharp objects pierced the battery shell, ban hammer or pedal battery;
- banned direct welding battery terminals;
- the battery should be prohibited in any way,
- a ban on fire or extremely hot conditions to recharge the battery.

Don't read carefully the following matters may cause battery leakage, explosion, or fire.

- it is forbidden to battery into microwave oven or in the pressure vessel;
- with a battery (such as a dry cell) or the combination of different models, battery capacity, use;
- if the battery emits an odor, fever, deformation, discoloration, or any other anomalies may not be used;If the battery is used or charge, shall be immediately removed from the electrical appliances or the charger and cease to use;
- the battery should be put out of reach of children, if a child accidentally swallowing battery should immediately seek medical treatment;
- if the battery leaks or emits an odor, its will be immediately removed from close to open;

Leakage of electrolyte may cause fire or explosion;

- if the battery electrolyte after leakage into the eyes, don't rub, the application of water flushing, seek immediate medical treatment.If not treated in time, the eyes will be hurt.

Note!

Don't use the battery in the thermal environment, such as direct sunlight or heat of the car.Otherwise, the battery will overheat, could fire (lit), it will affect the performance of the battery, shorten the service life of batteries.

Battery can only be used under the following conditions, otherwise will degrade the performance of the battery or shorten the service life of batteries.In the temperature range used batteries may cause overheating or fire and explosion.

Working environment:

Charging: 0 °C ~ 45 °C

Discharge: - 20 °C ~ 60 °C

Storage: 30 days - 20 °C ~ 45 °C

Storage: 90 days - 10 °C ~ 45 °C

When children use battery, need according to the content of the user manual to teach them, and pay close attention to them to ensure the correct use of the battery.

If the battery leakage, electrolyte to skin or clothes, immediately wash affected area with flowing water, otherwise may cause skin irritation.

Read battery device specifications, correct installation and removal of the battery.

If equipment without for a long time, remove the battery and placed in a cool, dry place, otherwise, the battery may rust or performance becomes poor.

If the battery terminal become dirty, wipe with dry cloth before use. Otherwise the battery will be poor contact, thus cause energy loss or unable to charge.

When after the battery discharge, should be filling the 75% of the battery or battery placed, otherwise, the battery may be caused by the battery itself since the power consumption influence the battery

Low or zero pressure.

8 shelf life

The battery for a period of 13 months after. The company promised if over 13 months due to the quality problem of the battery itself, the company will be responsible for

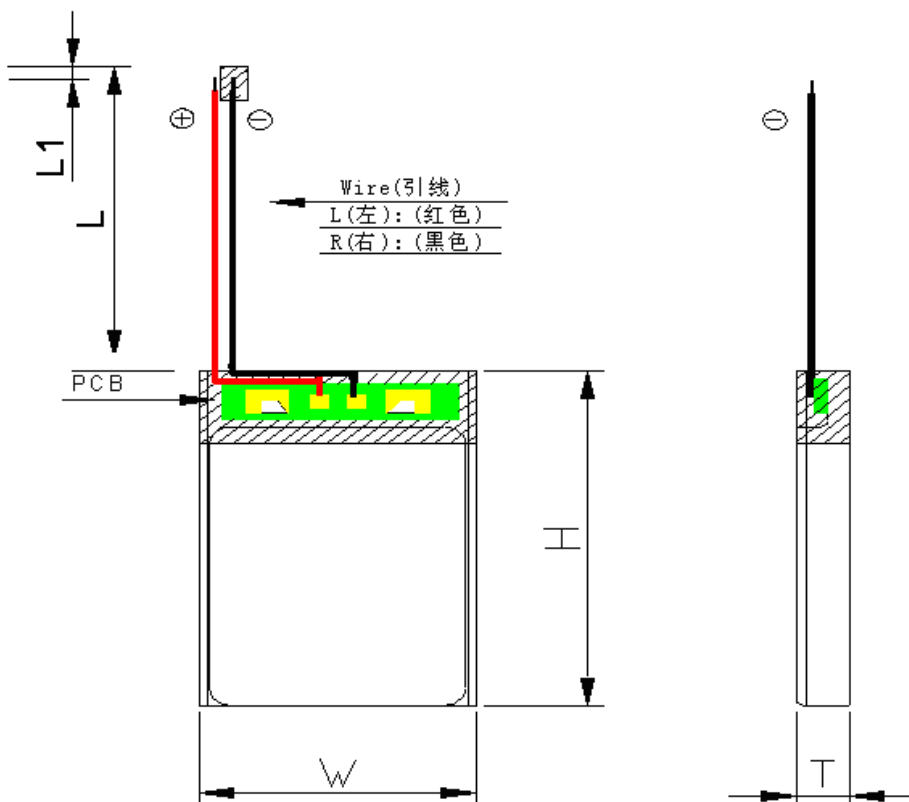
To carry on the exchange, if it is the result of the user misuse problems, will not be changing.

When the battery factory Battery in the factory has been filled with about 75% of the electricity.

10 revision of the product specification

The company shall have the right to revise our product specification, in the revised product specification for infinite energy technology co., LTD. Will notify the customer.

853535P-1050mAh Shape dimension figure



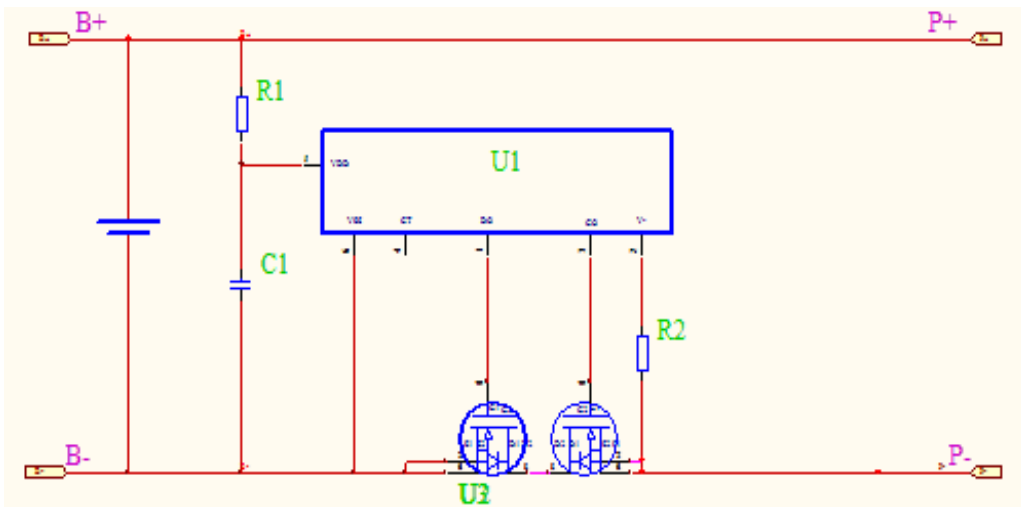
Units		mm		PCB	2110DB-8205A	
Wire	1571-26#	L		100±3	L1	0.5~2.0
T	≤8.7	W		35.0±0.5	H	36.0±1.5
Drawer		Checked		Approved	Date	

12 protection plate parameters

12.1 components Listing

NO.	Element number	Name of the element	specifications	quantity
1	U1	Protect IC	2110DB SOT-23-6	1
2	U2	MOSFET	8205 SOT-23-6	1
3	R1	resistance	100Ω ±5% 1/16W 0402	1
4	R2	resistance	1K ±5% 1/16W 0402	1
5	R3	resistance	/	/
6	C1	capacitance	0.1uF +80% -20% 50V 0402	1
7	PCB	/		1
8	nickel	/	/	/
9	hardware	/	/	/

12.2 principle diagram



12.3 technical parameters

The test items	Min	Typ	Max	Unit
The input voltage (between B+and B-)	0.3		9	V
The overcharge protection voltage	4.25	4.30	4.35	V
Release voltage overcharge	4.05	4.10	4.15	V
The overcharge protection delay time	–	80	200	s
Discharge voltage protection	2.3	2.4	2.5	V
Discharge voltage release	2.9	3.0	3.1	V
Put protection delay time	–	40	100	ms
Over current protection	2.0	3.5	6.0	A
Over-current protection delay time	–	10	20	ms
The static current	1.0	3.0	6.0	uA
Protective plate internal resistance	20	45	65	mΩ
The maximum operating temperature range	–40		85	°C