

Shenzhen Fconegy Power Solution Co.,Ltd

深圳市电思维科技有限公司

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Li-ion Battery Pack Specification

Product Item: 18650 7.4V 5200mAh li-ion battery

1. Normal Specialties

NO	Item	Common Idex		Note
		Typical Capacity	5200mAh	
1	Nominal Capacity	Typical Capacity	5200mAh	Standard Charged discharge at 0.2C ₅ A,Repeat 5 times get average .
		Minimum Capacity	5200mAh	
2	Typical Voltage	7.4V		Work Voltage
3	Discharge Cut-off Voltage	5.6V		Discharge Cut-off Voltage
4	Max. Charge Voltage	8.4V		Charge Max Limited Voltage
5	IR	≤150mΩ		At Semi-state,use AC measured the IR (Less than a week after using the ship and cycle times of less than five times the new battery measurement)
6	Typical Charge	Continue Current: 0.2C ₅ A Continue Voltage: 4.20V Cut-off Current: 0.02C ₅ A		Charge Time: About 5hours
7	Typical Discharge	Continue Current: 0.2C ₅ A Cut-off Voltage: 3.0V		
8	Way of Charge	CC/CV		
9	Max .Charge Current	5200mA		Advice charge current:0.2C~0.5C
10	Max.Discharge Current	10400mA		
11	Range of Temperature	Operating Charging Temperature		0 ~ +45℃
		Storage Humidity		60±25%RH
		Operating Discharge Temperature		-10 ~ +60℃
13	Fast Charge	Continue Current: 1C ₅ A Continue Voltage: 4.20V Cut-off Current: 0.02C ₅ A		Charge Time: About 2.5 hours
14	Fast Discharge	Continue Current: 1C ₅ A Cut-off Voltage: 3.0V		
15	Max.Continue Charge Current	1C ₅ A		
16	Max.Continue Discharge Current	2C ₅ A		

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17	PCM	SEIKO G3J+2*8205	SEIKO PCM
18	PCM safety protection	*Over charge protection *Over discharge protection *Over voltage protection *Under voltage protection *Over current protection *Short circuit protection	
19	Storage Temperature Scope	Discharge :-10 ~ +60℃ (Less than one year:-20 ~ +25℃ ; Less than 3 months :-20 ~ +40℃)	At goods delivery situation, Humidity scope: 60±25%RH
20	Weight	Appropriate: 90g	±0.5g

2.Appearance

Battery doesn't affect the commercial value of its shortcomings,such as: mechanical damage,deformation,discoloration. No such surface:leakage,stains,rust,leakage and other defects affecting goods marke value.

3.Performance

3.1 Standard Test Conditions

If not specified, the test shall be 25%-85% of the environment ,carried out at 20±5℃humidity ,the humidity is too much will effect on the accuracy of test results, the test must be used for no more than a new battery after shipment from our factory,and the cells not be cycled more than 5 times before the test .

3.2 Measuring Instrument or Apparatus

1.1.1 Dimension Measuring Instrument. Accuracy of 0.01mm caliper range is 0-200mm

1.1.2 Voltmeter and Ammeter.

Voltmeter accuracy of ±5mV, range is 0-20V; Ammeter accuracy of present current ±(0.3%±30mA)

3.3 Nominal Charged Test Conditions

At20±5℃,the testing process that standards as follows: first 0.5 C₅A constant battery charge to 4.20V,when the charge current decreases, then charged to 4.20V constant current is reduced to 0.02C₅A,the charging time is about 3 hours.

3.4 Nominal Discharged Test Conditions

At20±5℃,battery constant discharge to 3.0V,Unless otherwise defined, 30min, rest period after charge,30min,rest period after discharge.

3.5 Battery Performance Test

No	Item	Standard	Test Conditions	Test Ways
1	Leakage Test	No leakage	Typical full charged new battery	Standard charge condition,full charge after 60±5℃temperature, humidity 60±10%RH storage one month.
2	Vibration Test	80%	Discharge Temperature	

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3	Drop Test	100%	23℃ Discharge Temperature	After standard charge, the battery is to be tested as following conditions: Amplitude:1.6mm Frequency:10~55Hz(sweep:1Hz/min) Direction: X/Y/Z axis for 30min. The battery is to be tested in three mutually perpendicular to each axis.
		95%	45℃	
		≥90%	2C Discharge	
		No electrolyte leakage, smoke	Typical full charged new battery	
		No electrolyte leakage, smoke or explosion	Typical full charged new battery	Drop the battery in the shipment condition(full- charge)from 1m height onto thicker concrete with p-tile on it 2 times each of obverse.
4	Squeeze Test	No electrolyte leakage, smoke	Typical full charged new battery	Battery placed between two flat metal plate ,applied 13KN (1.72Mpa) force,and continued for 30 min.
5	Short-Circuit Test	No explosion,no fire.The temperature of the exterior cell casing shall not exceed 150℃	Typical full charged new battery	At normal temperature about 25±5℃ , After standard charge, the battery is to be short-circuited by connecting the positive and negative terminals of the battery with copper wire having a maximum resistance load of < 10mΩ.
6	Impact Test	No fire, no explosion	Typical full charged new battery	The battery to be fully charged with standard charging condition, and put a rod with diameter 56mm on the cell, and then heavy block (weight 10Kg) crash on the cell from a certain height(height=100cm).
7	Over-discharge Test	No fire, no explosion	Typical full charged new battery	The fully discharged cell is continually discharged for 2.5hours with 1 C ₅ A current.
8	Prick Test	No fire, no explosion	Typical full charged new battery	The full charged battery with a needle φ3mm at speed 10-40mm/s from perpendicular to the battery plates through (needle stays in the battery)

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4. Warning !!!

4.1 Battery usage should notice follow warnings:

- * Do not directly heated or thrown in fire.
- * Do not store at environment of high tep (over 60°C)
- * Do not directly short circuit battery
- * Do not with the acid corrosion of battery.
- * Do not thrown water or swallow in other Liquid , do not store in humidity environment .
- * Do not beat and impact battery.
- * Prohibit changing the batteries and battery internal anatomical structures.
- * Prohibit usage a damaged battery
- * Prohibit the battery immersed in liquid which like water,sea water and non-alcoholic drinks, juice ,coffee or other beverages.

4.2 Charging Notice

- * Charge temperature at 0°C~+45°C
- * Do not charge battery at the contrary direction.
- * Charging method is to charge the battery must not directly prohibit the use of the alternating current to charge the battery.
- * Use specified charger and according to our company manual to use the proper ways to use our products while charging.

4.3 Discharging Notice

- * Discharge temperature at 0°C~+60°C.
- * Discharge set Min.Discharge voltage not less than 3.0V.
- * Discharge current do not over specification ruled Max current.

4.4 Storge Notice

- * After a long time of storage batteries to pre-cycle 3 times
- * Store in a dry and lower temperature environment.
- * Storage long time no over 30% of the battery.