RS PRO 3500 mAh Rechargeable Battery Pack, Lithium-ion

RS Stock No: 683-439

FEATURES

- **3500 mAh capacity**: Provides long-lasting power for extended use
- **Lithium-ion chemistry**: Offers high energy density and efficiency
- **Nominal voltage of 7.2 V**: Suitable for a wide range of electronic devices
- **Compact dimensions (69 mm x 37 mm x 19 mm)**: Fits easily into various equipment
- **Maximum operating temperature of 50 °C**: Ensures reliable performance in different environments

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

The RS PRO 3500 mAh Rechargeable Battery Pack is designed to provide reliable power for a variety of electronic devices. With its lithium-ion chemistry, this battery pack offers a high energy density, making it ideal for applications requiring a compact and efficient power source. Its robust design ensures durability and consistent performance.

General Specifications

Chemistry	Lithium-ion
Product Type	Rechargeable Battery Pack

Electrical Specifications

Nominal Voltage	7.2 V
Battery Capacity	3500 mAh

Mechanical Specifications

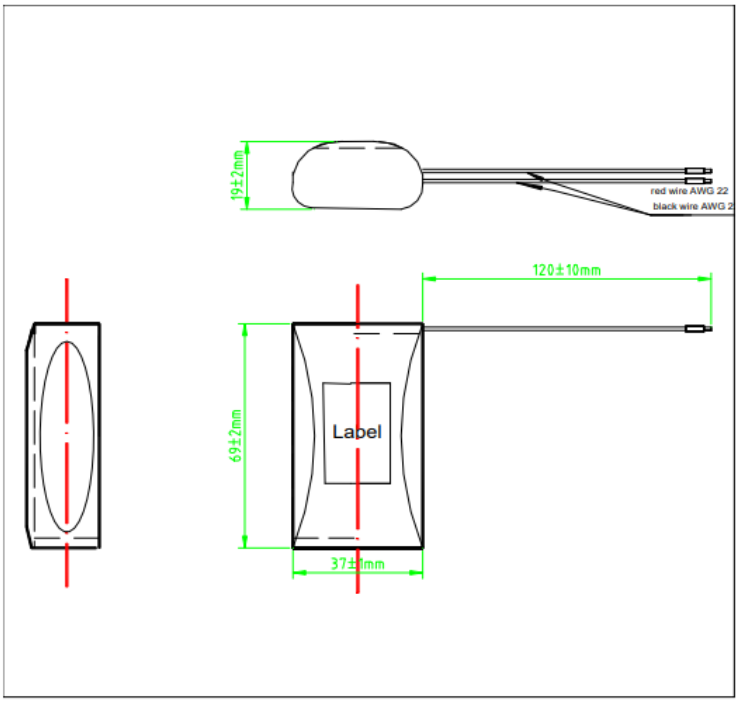
Depth	37 mm
Height	19 mm
Width	69 mm

Operation Environment Specifications

Maximum Operating Temperature	50 °C

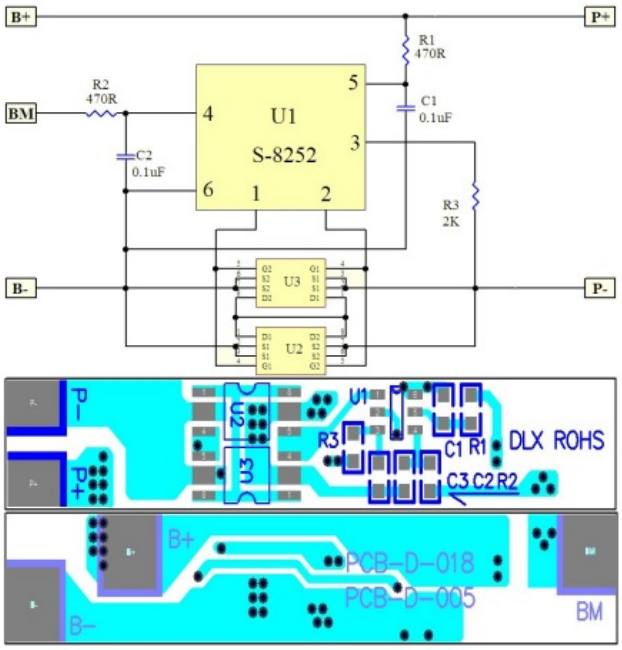
Approvals

Standards/Approvals	ANSI-ESD S20.20:2021, ATEX-IECEX, CE, IEC 62133, RoHS, UN38.3, VDE



PCM Specifications

Item	Min	Typ	Max	Unit
Input Voltage B+ to B-		-0.3~+12V		
Over-Charge detection voltage	4.225	4.25	4.275	V
Over-Charge Release voltage	4.00	4.050	4.10	V
Detection delay time		0.8s~1.2s		
Over-Discharge Detection Voltage	2.90	3.00	3.10	V
Over-Discharge Release Voltage	2.90	3.00	3.10	V
Over discharge Detection delay time		102.4ms~153.6ms		
Over discharge current		7A~12.0A		
Over discharge delay time		5.6ms~8.6ms		
Short detection delay time		224μs~336us		
Normal current consumption of PCM		MAX 12uA		
Maximum continuous discharge current		3A		
IR resistance of PCM		≥65mΩ		
The size of final PCM		L40.5±0.15mm; W7±0.1mm; H0.8±0.1mm		



Standard Conditions for Test

Standard Conditions for Test

1. Without stating specifically, all the electrical characteristics are obtained under the following conditions: Ambient temperature: 25±2°C; Relative humidity: ≤75%.
2. Without stating specifically, all the safety tests are conducted under the following conditions:

Ambient temperature :25±2°C; Relative humidity: ≤75%.

Characteristics
Electrical Characteristics

4.1 Standard Charge	0.3C (1020mA), CC-CV to 4.2V, 50mA cut off
4.2 Standard Discharge	0.2C(680mA), CC to 2.5V
4.3 Charge/Discharge Condition	Charge:0.3C(1020mA), CC-CV to 4.2V, 50 mA cut off, rest for 10min. Discharge: 0.5C(1700mA), CC to 2.5V, rest for 20 min.

Electrical Characteristics

Items	Test Procedure	Requirements
5.1.1 Nominal Voltage	Charge as described in 4.1, and discharge as described in 4.2. Calculate the average working voltage during discharge process.	3.6V
5.1.2 Discharge Characteristic	Charge under the condition of 4.1, and discharge under the condition of 4.2.	≥3400mAh
5.1.3 Cycle Life	Charge as described in 4.1, rest for 10min, and discharge with the current of 0.5C(1625mA) to 2.75V and then rest for 20min. Repeat cycling till discharge capacity in 2 successive cycle is less than 80% of the initial capacity.	≥300 Cycles

5.1.4 Rate Performance	Charge as described in 4.1, rest for 10min, and discharge with different constant current and cut off at 2.5V. Calculate the ratio of above capacities to the standard discharge capacity as described in 4.2.	0.2C =100% 0.5C ≥94% 1C ≥90% 2C ≥80%
5.1.5 Storage at High Temperature	Charge as described in 4.1, store in the environment with temperature of 60±2°C for 7 days, and discharge as described in 4.2: charge and discharge as described in 4.3 for 3 times and record the recovery capacity.	Recovery ratio ≥80%
5.1.6 Temperature Dependency of Capacity	Charge as described in 4.1, and discharge in the environment with different temperatures. Calculate the ratio of above discharge capacities to discharge capacity at temperature of 25±2°C.	-10°C ≥70% 0°C ≥80% 25°C =100% 50°C ≥95%
5.1.7 Capacity Retention at Room Temperature	Fully charge as described in 4.1, store for 30days, and discharge as described in 4.2. Calculate the retention ratio of capacity.	Retention ratio ≥90%
5.1.8 Storage	(After Manufactured within 3 months) Charge as described in 4.1 until the capacity reaches 40-50%; store for 12 months in the environment with relative humidity of 45%~85%; charge and discharge as described in 4.1 and 4.2, respectively, and record the discharge capacity and calculate the retention ratio of capacity.	Retention ratio ≥80%

Electrical Tests

Items	Test Procedures	Requirements
5.2.1 Short circuit at 20±5°C	The samples cell should be fully charged as described in 4.1 rest for 30min, and then short-circuited by connecting positive and negative terminals with a circuit load having a resistance of 80±20mΩ at 20±5°C. The temperature of the case should be measured during the test. The cell should remain on test for 24 hours or until the temperature of the case declines by 20% of the maximum temperature.	No fire, no explosion, and maximum surface temperature ≤150°C
5.2.2 Abnormal Charge	The sample cell should be discharged as described in 4.2, and subjected to the charging process to 4.6V with the current of the greater one between the 3C and three times of the charging current recommended by the manufacturer. The temperature of the case should be measured during the test. The test should be continued until the charging time reaches 7 hours or temperature of the case declines by 20% of the maximum temperature.	No fire, no explosion.
5.2.3 Forced-Discharge	The samples cell should be discharged as described in 4.2, and subjected to the forced discharge process with the reverse current of 1C. the test time is 90 min.	No fire, no explosion.

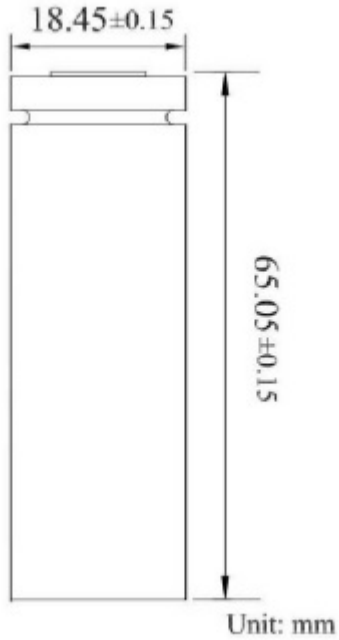
Mechanical Tests

Items	Test Procedure	Requirements
5.3.1 Vibration	The samples cell should be fully charged as described in 4.1, and fixed on a vibration platform. Then it is to be subjected to simple harmonic motion with an amplitude of 0.8mm (1.6mm total maximum excursion). The frequency is to be varied at the rate of 1Hz/min between 10 and 55 Hz, and return in not less than 90 nor more than 100 min. The above process should be conducted at both axial and radical directions (three mutually perpendicular directions for prismatic and pouch cell).	No fire, no explosion, and no leakage.
5.3.2 Drop	The samples cell should be fully charged as described in 4.1, and dropped onto a flat concrete floor from 1m height. The positive and negative electrode side should be dropped once, respectively, and the cylindrical surface twice. Each cell should be dropped four times.	No fire, no explosion.

5.3.3 Impact	The sample cell should be fully charged as described in 4.1, and placed on flat surface. A metal bar with a diameter of 15.8mm(5/8 in) is to be placed across the center of the sample, and perpendicular to the longitudinal axis of the cell. A weight of 9.1kg(20 lb) is to be dropped from a height of 0.61m(24in) onto the sample.	No fire, no explosion.
5.3.4 Crush	The sample cell should be fully charged as described in 4.1, placed between two flat surfaces and crushed with its longitudinal axis parallel to the fat surfaces. Crush the cell in the direction perpendicular to the flat surface with a crushing force of 13.0±0.2kN. The test is completed once the crushing force reaches the maximum value.	

Environmental Tests

Items	Test Procedure	Requirements
5.4.1 Low Pressure	The samples cell should be fully charged as described in 4.1, and stored for 6 hours at an absolute pressure of 11.6kPa (1.68psi) and a temperature of 20±5°C, followed by 1 hour's observation.	No fire, no explosion, and no leakage.
5.4.2 Heating	The sample cell should be fully charged as described in 4.1, and placed in a gravity or circulating air convection oven with an initial temperature of 20±5°C. Raise the oven temperature at a rate of 5±2°C/min to the test temperature 130±2°C and remain at this temperature for 30 minutes.	No fire, no explosion.



Caution in Use

Cautions

Please read this specification carefully before testing or using the cells because improper handling of the Li-ion cells may lead to efficiency loss. Heating, electrolyte leakage, ignition or even explosion.

Caution in Use

- Abnormal operations such as overcharge (voltage> 4.2V), over discharge (voltage

Safety Caution

- The battery should be placed away from babies and children. If there is any emergency such as deglutition, scald, or explosion, please go to the hospital immediately.
- When charging or discharging the battery, please use professional test equipment designed for Li-ion batteries. Do not use ordinary constant current or constant voltage (CC/CV) power chargers without limitation of current or voltage. These chargers do not protect the battery from being overcharged and over-discharged and may lead to function failure and be dangerous.
- When charging, discharging, or assembling the battery, avoid reversing the positive and negative terminals. Or it would lead to overcharge and over-discharge of the battery, causing serious failure, or even explosion.
- Do not solder the battery directly. Do not disassemble the battery.
- Do not put the battery in pockets or bags with metal objects, such as necklaces, hairpins, coins, screws, etc. Neither store the battery without proper isolation, nor connect the positive and negative electrodes directly with conductive materials. Or the battery may be short-circuited.
- Do not hammer, throw or trample the battery. Do not put the battery into washing machines or high-pressure containers.
- Keep the battery away from heat sources, such as fires, heaters, etc. Do not use or store the battery in direct sunlight or at places where temperature could exceed 60°C. Or the battery may generate excessive heat. Ignite and fail.
- Do not get battery wet or throw it into water. When the battery is not in use, place it in a dry environment with relatively ow temperature.
- If the battery becomes abnormally hot, give our smell, change color, deform or show any other abnormalities during using, testing or storing, please stop using or testing immediately. Attempt to isolate the battery and stay away.
- If the leaking electrolyte from the battery gets into your eyes, do not rub your eyes. Rinse the eyes with clean and seek medica attention if problem remain. If the electrolyte gets onto the skin or clothing, wash clean water immediately.

Transportation

During transportation, do not subject the cells or the boxes to violent shaking, bumps, rain or direct sunlight. Cells can be transported by truck, train, ship and airplane, etc

Long-term Storage

- When delivered, cells are charged to the voltage of 3.2V~4.00V, storing cells at/more than 80% SOC for a long time will lead to capacity loss and cycle life loss. Please keep cells into use within 90 days when the capacity is more than 80%.
- Cells may have lower capacity than they’re expected due to the self-discharge when cells are to be delivered at 30% SOC.
- Do not use or store the cells when the voltage is less than 2.5V


05-12-2025
RS PRO
Lithium-ion Rechargeable Battery pack (2S1P)
Nominal Voltage:7.2V Nominal Capacity:2600 mAh
Energy:18.7Wh
Weight:
Keep battery pack in cool dry circumstance.Do not heating and put
in the fire.Do not disassembly, modification, short circuit.Properly
Charging
683-439