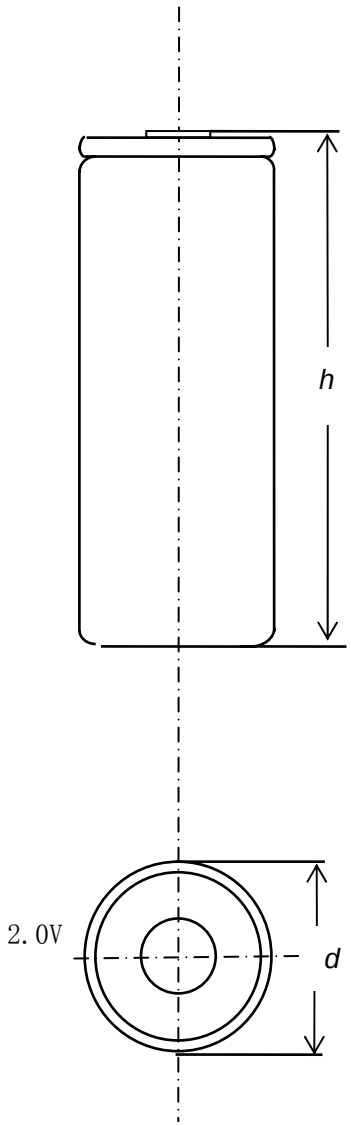
Specification

RCR123A 3.0V 680 mAh

Rechargeable Battery

http://www.batteryspace.com
2700 Rydin Road unit C. Richmond, CA, 94804 USA.
Tel: 510-525-2328
Fax:510-439-2808



TYPE ---------- CYLINDRICAL

MODEL ---------- ICR17335

SPECIFICATION---------- 17335

Nominal voltage ---------- 3.0V

Weight approx. ---------- 18g

C_5mAh---------- 550mAh

Charge voltage---------- 4.500±0.05V

Minimum discharge end voltage---------- 2.0V

Maximum charge voltage---------- 4.50V

Maximum continuous charge current------ 550mA

Maximum continuous discharge current--- 1100mA

Dimension (including shrink sleeve/label)

Diameter, d ---------- 16.8±0.2mm

height, h ---------- 33.5±0.5mm

Capacity (20℃, 0.2 C_5 to 2.0V)

Minimum capacity---------- 500mAh

Internal impedance (20℃±5℃) ＜400mΩ

Charge-Discharge conditions (20℃±5℃)

Standard charge---------- 0.5I_tmA CC/CV

Standard discharge---------- 0.2I_tmA CC to

Fast charge---------- 1I_tmA CC/CV

Operation conditions (recommended)

Storage--- Temperature(15-35℃)
Relative humidity (45-75%)
Pressure (86-106KPa)

Discharge---------- -20-60℃

Standard charge---------- 0-45℃

Standard Test Conditions (Except additional quest)

Temperature---------- 20℃±5℃

Relative humidity---------- 65±20%

1. Performance

Test item	Test conditions	Requirements
(1)Outside Appearance	Visual check	No abnormal stain, Deformation nor damage
(2) Standard test conditions	Measurements are carried out at 20 ± 5 ℃ and relative humidity of 65 ± 20% without other specified condition. Accuracy of voltmeters and ammeters used in test is equal to or better than the grade 0.5.	
(3) Standard charge	Cells shall be charged continuously at the constant current of 0.5I_tmA to 4.5V, then charge at the constant voltage of 4.5V until the end current of 10mA	
(4)Standard discharge	Cells shall be discharged continuously at the constant current of 0.2I_tmA to 2.0V	
(5) Fast charge	Cells shall be charged continuously at the constant current of 1I_tmA to 4.5V, then charge at the constant voltage of 4.5V until the end current of 10mA	
(6) Open-circuit voltage (OCV)		≥3.3V (load voltage)
(7)Rated Capacity	Cells shall be charged in Item (3) and discharged in Item (4) within 10minutes after full charged. If the discharge duration does not reach the specified value, the test may be repeated up to three times in total.	Rated capacity: ≥100C_5mAh
(8) Capacity high-rate discharge	Cells shall be charged in Item (3) and discharged continuously at the constant current of 1I_tmA to 2.0V within 10minutes after full charged. If the discharge duration does not reach the specified value, the test may be repeated up to three times in total.	Discharge capacity: ≥90%C_5mAh
(9) Cycle Life (20℃)	Cells shall be charged continuously at the constant current of 1I_tmA to 4.5V and discharged continuously at the constant current of 1I_tmA to 2.0V. A cycles defined as one charge and discharge . carry out cycles until discharge capacity <80% C_5mAh	≥300 cycles

(9) Cycle Life (20℃)	Cells shall be charged continuously at the constant current of $1I_t$mA to 4.5V and discharged continuously at the constant current of $1I_t$mA to 2.0V. A cycles defined as one charge and discharge . carry out cycles until discharge capacity <80% C_5mAh	≥300 cycles
(10)Low temperature discharge	Cells shall be stored under -20℃±2℃ for 16h～24h after charged in Item (3), then discharged at constant current of $0.2I_t$mA to 2.0V	Discharge capacity: ≥60%C_5mAh

2 Mechanical test

Test Item	Test Conditions	Requirements
(1)Vibration Test	Vibrate test sample for 90minutes per each of the three mutually perpendicular axis(x,y,z)after rated charge. Amplitude: 0.38mm(10-30Hz); 0.19mm (30-55Hz) Frequency: 10-55Hz(1oct/min) Direction: X, Y After test , cells are discharge at constant current of $0.2I_t$mA,and cycles per 1(3)and 1(4)for 3 cycles to obtain recovered capacity	No rupture, fire, smoke, Nor critical damage ≧90% C_5mAh
(2) Drop Test	Drop 100% charged test sample from 1 meter above onto concrete board with more than 5cm thickness two times each for every direction after rated charge. After test , cells are discharge at constant current of $0.2I_t$mA,and cycles per 1(3)and 1(4)for 3 cycles to obtain recovered capacity	No rupture, fire, smoke, Nor critical damage ≧90% C_5mAh

3 Safety Evaluation

Test Item	Test Conditions	Requirements
(1) Hot Oven Test	The charged batteries are to be heated in a gravity convection or circulating air oven. The temperature of the oven is to be raised at a rate of 5±2℃ per minute. The oven is to remain for 30 minutes at 150 ±2℃ before the test is discontinued.	No fire, Nor explosion
(2)Short Circuit Test	After fast charge at 20±2 ℃, Connect battery terminals with electric wire (electric resistance: 50m Ω or less). And stop the test when the	No fire, Nor explosion

	temperature of battery is 10℃ lower than peak temperature.	
(3) Overcharge	After discharged at 1I_tmA and to 2.0V, the batteries shall be charged at 3I_tmA current with a voltage limit of 4.6V.chargeing is continued for 8 hours	No fire, Nor explosion

4 Charge State of Battery before shipment

To be determined.(Recommendation Approx. V)

5 Duration of guarantee the product

We can keep on the quality in six month.

6 Protection

When Li-ion rechargeable battery is used over the permitted voltage or current, electrolyte may disassemble, and this case will affect safety performance of Li-ion rechargeable battery. So“PTC heat-fuse” and protection circuit module were used in order to prevent overcharge, overdischarge and overcurrent.

The parameters of protection circuit module as follows:

overcharge protection voltage	4.550±0.025V
overdischarge protection voltage	1.80±0.08V
overcurrent protection	≤1.8A

7 Handling precautions on Lithium Ion Rechargeable Battery

To assure product safety, describe the following precautions in the instruction manual of the equipment.

! Danger

- When charging the battery, use dedicated chargers and follow the specified conditions.
- Use the battery only in the specified equipment.
- Do not connect battery directly to an electric outlet or cigarette lighter charger.
- Do not heat or throw battery into a fire.
- Do not use, leave battery close to fire or inside of a car where temperature may be above 60℃. Also do not charge / discharge in such conditions.
- Do not immerse, throw, and wet battery in water/ seawater.
- Do not put batteries in your pockets or a bag together with metal objects such as necklaces. Hairpins, coins, or screws. Do not store batteries with such objects.
- Do not short circuit the (+) and (-) terminals with other metals.
- Do not place battery in a device with the (+) and (-) in the wrong way around.
- Do not pierce battery with a sharp object such as a needle.
- Do not hit with a hammer, step on or throw or drop to cause strong shock.

- Do not disassemble or modify the battery.
- Do not solder a battery directly.
- Do not use a battery with serious scar or deformation.

! Warning

- Do not put battery into a microware oven, dryer, or high-pressure container.
- Do not use battery with dry cells and other primary batteries, or batteries of a different package, type, or brand.
- Stop charging the battery if charging is not completed within the specified time.
- Stop using the battery if abnormal heat, odor, discoloration, deformation or abnormal condition is detected

During use, charge, or storage.

- Keep away from fire immediately when leakage or foul odor is detected.
- If liquid leaks onto your skin or clothes, wash well with fresh water immediately.

If liquid leaking from the battery gets into your eyes, do not rub your eyes. Wash them well with clean water and go to see a doctor immediately.

! Caution

- Store batteries out of reach of children so that they are not accidentally swallowed.
- If younger children use the battery, their guardians should explain the proper handling.
- Before using the battery, be sure to read the user's manual and cautions on handling thoroughly.
- Thoroughly read the user's manual for the charger before charging the battery.
- For information on installing and removing from equipment, thoroughly read the user's manual for the specific equipment.
- Batteries have life cycles. If the time that the battery powers equipment becomes much shorter than usual, the battery life is at an end. Replace the battery with a new same one.
- Remove a battery whose life cycle has expired from equipment immediately.
- When the battery is thrown away, be sure it is non-conducting by applying vinyl tape to the (+) and (-) terminals.
- When not using battery for an extended period, remove it from the equipment and store in a place with low humidity and low temperature.
- While the battery pack is charged, used and stored, keep it away from objects or materials with static electric charges.
- If the terminals of the battery become dirty, wipe with a dry clothe before using the battery.
- The battery can be used within the following temperature ranges. Do not exceed these ranges.

Charge temperature range : 0℃ to 45℃
Discharge temperature range : -20℃ to 60℃
(When using equipment)