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Specification

Model NO. : RCR123A36

1. Scope

- 1.1 This Specification applies to the lithium-ion rechargeable Battery RCR123A36
- 1.2 This Specification shall be applied to single cell.

2. Type and Model

2.1 Type

Lithium-ion Rechargeable Battery

2.2 Model

RCR123A36

3. Specification

Item		standard
3.1	Nominal capacity	650 mAh
3.2	Nominal voltage	3.7 V
3.3	Charge voltage	4.2 V
3.4	Discharge cutoff voltage	2.75 V
3.5	Continuous maximum charge current	1300mA
3.6	Continuous maximum discharge current	1300mA
3.7	Standard weight	18.0±0.5 g
3.8	Operating temperature range	0 °C ~ +45 °C -20 °C ~ +60 °C
	charge	
	discharge	

4. Dimension& Appearance

4.1 Dimension

Diameter: 16.3±0.2 mm

Length: 33.7±0.5 mm

4.2 Appearance

There shall be no defects such as remarkable scratches, leakage or deformation.

5. Performance

5.1 Standard Test condition

Test shall be carried out at 23±2 °C temperature with 45% to 75% relative humidity and atmospheric pressure 86kPa to 106kPa, unless otherwise specified.

5.2 Testing Instruments and Apparatuses

5.2.1 Dimension shall be measured by instruments with equal or more precision scale or 0.01mm specified by JIS B 7502(out micrometer) or JIS B 7503(dial gauge)



5.2.2 Voltmeter and Ammeter Voltmeter and ammeter shall be equal or more precision instruments specified by JIS C 1102 (Indication Electric Instrument level 0. 5)

5.2.3 Internal resistance Gauge An internal resistance shall be measured by a sine wave alternate current process(1KHz).

5.3 Rated charge condition

Charging with 0.2C5A, and then charging by constant voltage for less 8 hours when voltage is 4.2V, terminating current is 0.01C.

5.4 Rated discharge condition

A constant current of 0.2C5A down to a 2.75 V cutoff at $23 \pm 2 \text{ }^\circ\text{C}$.

5.5 Electrical characteristic

Item	standard	Test condition
5.5.1 Internal Resistance	$\leq 100\text{m}\Omega$	Measure the battery with 1 KHz AC at $23 \pm 2^\circ\text{C}$.
5.5.2 Rated Capacity	300 min Minimum	Duration time on rated discharge shall be measure after rated charge at $23 \pm 2^\circ\text{C}$
5.5.3 Battery Capacity 1	120 min Minimum	0.5C5A down to a 2.75V cut off discharge after rated charge at $23 \pm 2^\circ\text{C}$
5.5.4 Battery Capacity 2	51 min Minimum	1.0C5A down to a 2.75V cut off discharge after rated charge at $23 \pm 2^\circ\text{C}$
5.5.5 Cycle Life	300 cycles Minimum	Discharge(2.75V)after rated charge at $23 \pm 2^\circ\text{C}$.Repeat the charge/discharge cycle 300 times.
5.5.6 Capacity Retention	255 min Minimum	Duration time on rated discharge shall be measured after rated charge and then storage at $20 \pm 5^\circ\text{C}$ for 28 days.
5.5.7 High Temperature Characteristics	51 min Minimum	Duration time shall be measured at rated charge then discharge 1.0C5A down to 2.75V at the temperature $55 \pm 2^\circ\text{C}$.
5.5.8 Low Temperature Characteristics	210 min Minimum	Duration time shall be measured at rated charge then discharge 0.2C5A down to 2.75V at the temperature $-20 \pm 2^\circ\text{C}$.

5.6 Reliability

Item	Standard	Test condition
5.6.1 Drop Test	No explosion or fire	Drop the battery form 1m height onto 18~20cm thick hardwood strip 1 times each of x, y, and z directions
5.6.2 Vibration	No remarkable deformation, explosion or fire	The full charged cell is fixed on a platform and vibrated in the X,Y and Z directions for 30 minutes at the speed 10ct/min Frequency: 10~30HZ, Vibration amplitude 0.38mm. Frequency: 30~55HZ, Vibration amplitude 0.19mm.
5.6.3 Constant and Humidity Test	Heat 36 min Minimum No remarkable deformation or explosion	Duration time shall be measured at rated charge then discharge 1.0C5A down to 2.75V after 48h at the temperature 40 ± 2 °C with 90% to 95% relative humidity

6. Call condition at the shipment

About 60~65% charged

7. Handling Instructions

7.1 Temperature range

* charging: 0°C ~ 45°C

* discharge: -20°C ~ 60°C

* storage: -20°C ~ 45°C

7.2 Charging

* The lithium-ion rechargeable battery must be charged with a maximum limit of voltage and current limit.

* Maximum limit voltage: 4.2V

* Maximum charging current: 1300mA

7.3 Discharging

* Maximum discharging current: 1300mA

* Avoid discharging below 2.75V

7.4 Operation

* The battery must not be connected with the charger not exclusively designed for this battery

* The battery must not be applied for other equipment.

7.5 Protect circuits

The battery must possess three types of protective circuits follows.

7.5.1 Over-charging protective circuit

The over-charging protective circuit shall operate at 4.25 to 4.35 volts, lower voltage is desirable;

7.5.2 Over-discharging protective circuit

The over-discharging protective circuit shall operate at 2.0 to 2.75 volts, then discharge current must decrease to less than 10 uA.



7.5.3 Excessive-current protective circuit

The protective circuit must operate at charging or discharging at over 3C current

8. Warning for Using the Lithium Ion Rechargeable Battery

8.1 Observe the following in using the battery

- * Do not beat or throw into the fire.
- * Do not disassemble
- * Do not set up or leave in high temperature (80°C or more) in device
- * Do not short positive (+) and negative (-) terminal with a metal
- * Do not wet in the water
- * Do not give a hard shock or drop
- * Do not solder lead lines to the battery in direct
- * Do not use the battery without PCB

8.2 Charging

- * Charge within the limits of 0°C to +45°C temperature
- * Do not charge reversibly
- * Charge only with charge exclusively designed for this battery

8.3 Discharging

- * Discharge with the limits of -20°C to +60°C temperature
- * Avoid discharging below 2.75V, do not over-discharge below 1.0V
- * Discharge within a designated current
- * Use only as a power source for a designated device

8.4 Storage

- * Discharge completely for the long-term storage
- * Store under dry and the low temperature environment