

## SPECIFICATION APPROVAL SHEET

### XCell CR123A

#### 1. Cell Specification

No.	Items	Specifications	Remark
1	Nominal Capacity	1500mAh	
2	Minimum Capacity	1450mAh	Discharge with 1mA to 2.0V at 25±5°C
3	Nominal Voltage	3.0V	/
4	Delivery voltage	3.05~3.40V	Open circuit voltage
5	Cell Internal resistance	≤1.0Ω	Ac impedance
6	Weight	About 16.5 g	/
7	Maximum discharge current	1500mA	Discharge continuously to 2.0v at 25±5°C, and the discharge capacity reaches half of the nominal capacity
8	Maximum pulse discharge current	3000mA	Pulse cycle discharge at 25±5°C, 3s on 27s off, discharge to 2.0V, the output capacity can reach half of the nominal capacity
9	Operation Temperature Range	-40~70	The performance of the battery will decrease under low temperature
10	Storage environment	10 years	Storage environment: 25±5°C, ≤65%RH

#### 2. Battery/Cell performance test Criteria

##### 2.1 Appearance inspection by visual

There shall be no such defect as rust, leakage, which may adversely affect commercial value of battery.

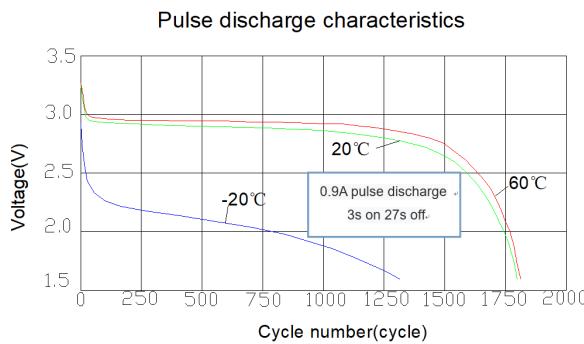
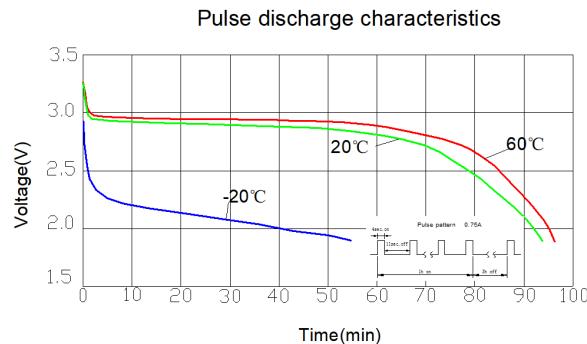
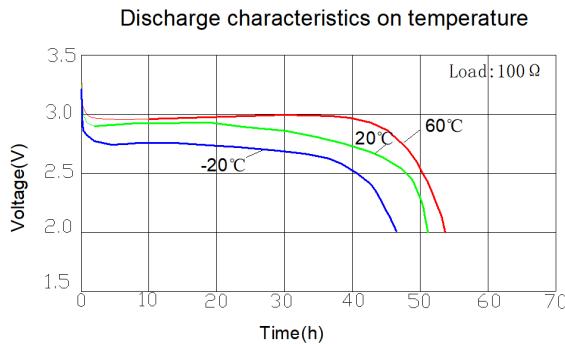
##### 2.2 Environmental test condition

Unless otherwise specified, all test stated in this product specification are conduct at below test condition

Temperature: 20±5°C

Relative Humidity:≤65% R.H.

##### 2.3 Discharge characteristic

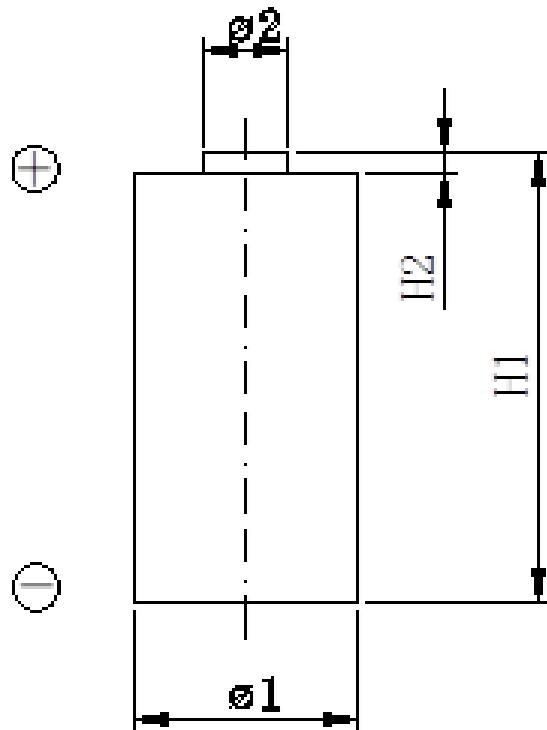


## 2.4. Reliability test

No.	Items	Test Method and Condition	Criteria
1	Free fall test	The full battery drops from a height of 1M to a concrete floor, dropping three times at random.	No Fire, No explosion
2	Vibration test	The full cell was fixed on the shaking table and vibrated along X, Y and Z directions for 30 minutes with an amplitude of 1.6 mm and a frequency of 10 hz ~ 55 hz, varying 1 hz per minute.	No leakage, No fire, No explosion
3	Thermal exposure test	After the full battery temperature is stabilized to normal temperature, it is placed in a recirculating air oven. After the normal temperature is raised from 5 ° C/min ± 2 ° c/min to 130°C, it is placed at 130°C for 30 minutes.	No Fire, No explosion
4	Thermal cycling test	Test cells and batteries shall be stored for at least 6 h at a test temperature of 75°C, followed by storage for at least 6 h at a test temperature of -40°C. The maximum time for transfer to each temperature shall be 30 min. Each test cell and battery shall undergo this procedure 10 times. This is then followed by storage for at least 24 h at ambient temperature	No mass loss, No leakage, No short-circuit, No rupture, No explosion and No fire
5	Short test	At Room temperature of 25 ± 5 ° C, the positive and negative electrodes of a full battery are connected with a load not exceeding 100 m $\omega$ , which shortens the external circuit of the battery	No Fire, No explosion Surface temperature does not exceed 150
6	Forced discharge test	Each test battery shall be discharged to 100% depth of discharge. It shall then be connected in series with three undischarged additional batteries of the same type and the circuit load is lower than 0.1 $\Omega$ stop the test when battery temperature come back to The environment temperature	No Fire, No explosion
7	Over charge test	Charge the battery with full charge and charge it with dc power supply. The charging current is 3 times (5mA 3=15mA) of the specified maximum charging current $I_c=0.004a$ and keep it for 12 hours	No Fire, No explosion
8	Crush	Each cell is crushed between two surfaces. The force for the crushing is applied by a hydraulic ram exerting a force of 13kN ± 1kN. crushing is performed in a manner that will cause the most adverse result. Once the maximum force has been applied, or an abrupt voltage drop of one-third of the original voltage has been obtained, the force is released.	No Fire, No explosion

## 3. Cell initial Dimensions

No.	Items	Units: mm
1	H1	34.0±0.5
2	H2	1.6±0.3
3	$\Phi$ 1	16.7±0.2
4	$\Phi$ 2	6.3±0.2



## 4. CAUTIONS IN USE

To ensure proper use of the battery please read the manual carefully before using it.

### - Handling

Do not expose to, dispose of the battery in fire.

Do not put the battery in a charger or equipment with wrong terminals connected

Avoid shorting the battery

Avoid excessive physical shock or vibration.

Do not disassemble or deform the battery.

Do not immerse in water.

Do not use the battery mixed with other different make, type, or model batteries.

Keep out of the reach of children.

### - storage

Store the battery in a cool, dry and well-ventilated area.

### - disposal

Regulations vary for different countries. Dispose of in accordance with local regulations.

## 5. Period of Warranty

The period of warranty is one year from the date of shipment. Energy Inside guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customer abuse and misuse.

## 6. Storage of the Batteries

Batteries should be stored in a cool, dry environment, rain proof, sunscreen. Recommended storage environment: 25±5°C, humidity is less than 65%

## 7. Note

Any other items which are not covered in this specification shall be agreed by both parties.