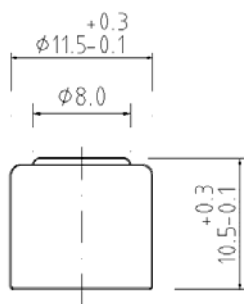


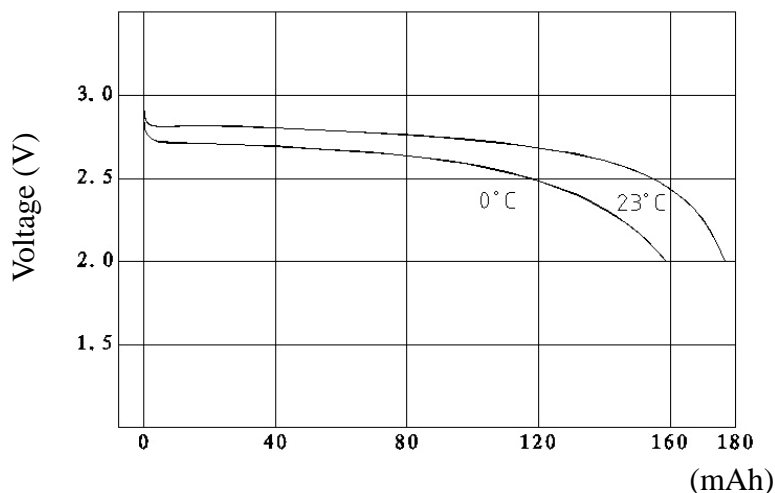
# HUALI BATTERY INDUSTRY CO.LTD.

## LITHIUM BATTERY

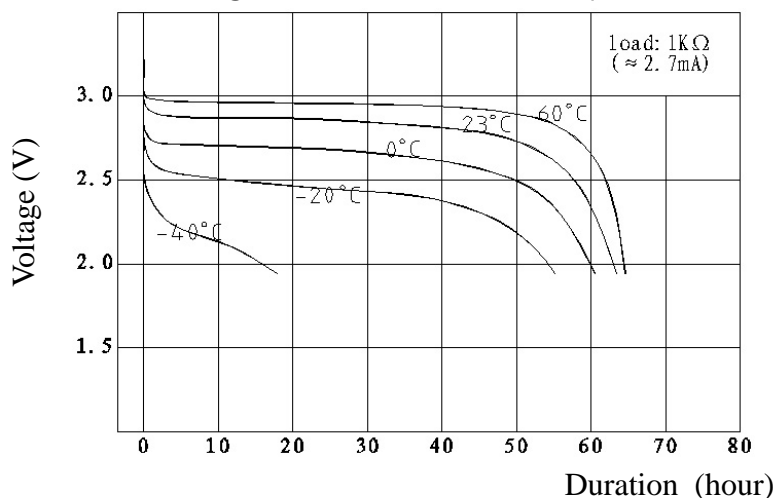


Model	CR1/3N	
Nominal Voltage	3V	
Nominal Capacity	170mAh	
Dimension	$\Phi 11.5 \times 10.5\text{mm}$	
Weight	3.2g	
Temperature range	-40~60°C	
Standard Discharge Current	3mA	
Max. Discharge Current	Continuous	60mA
	Pulse	140mA

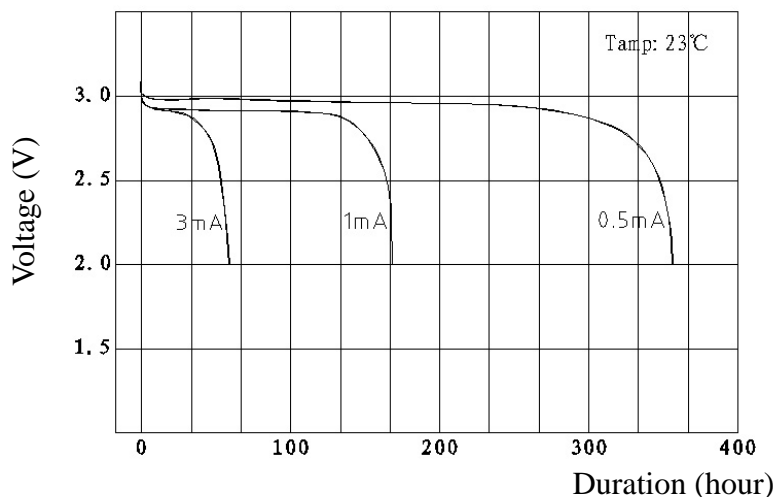
Temperatures characteristics (3mA)



Discharge curve at various temperatures



Discharge curve at various currents



## HUALI BATTERY CO.,LTD.

1. Model Number : CR1/3N
2. Nominal Voltage : 3 V
3. Nominal Capacity : 170 mAh  
(Nominal capacity is based on standard discharge current and cutoff Voltage down to 2.0V at  $20\pm 5^{\circ}\text{C}$ )
4. Standard Discharge Current : 3 mA
5. Max. Continuous Discharge Current : 60 mA
6. Construction
  - 6.1 Appearance, Dimensions : There shall be no noticeable deformation. The dimensions shall be according to the attached drawings.
  - 6.2 Weight : Approx. 3.2g
7. Performance
  - 7.1 Open Circuit Voltage : Min. 3 V
  - 7.2 Temperature Range : Discharge  $-40$  to  $60^{\circ}\text{C}$   
Storage  $-20$  to  $45^{\circ}\text{C}$
  - 7.3 Leakage Resistance : The battery shall not show leakage or salting which harms performance.
8. Test Conditions, Measuring Instruments and Measuring Methods
  - 8.1 Test Conditions : If not otherwise specified,  
Temperature :  $25\pm 5^{\circ}\text{C}$   
Humidity :  $65\pm 10\%$
  - 8.2 Measuring Instruments
    - i ) Volt Meter : Internal Impedance : More than  $1\text{M}\Omega$   
Accuracy : Less than 0.25%
    - ii) Caliper : Accuracy : less than 0.25%
    - iii) Balance : Sensitivity : More than 100 mg
  - 8.3 Measuring Method
    - i ) Outer Dimensions : This shall be measured with the caliper described in Item 8.2 ii ).
    - ii) Weight : This shall be measured with the balance described in Item 8.2 iii ).
    - iii) Appearance : Deformation or tarnish shall be visually checked.
    - iv) Open Circuit Voltage : This shall be measured with the volt meter described in Item 8.2 i ).
    - v ) Operating Time ( Duration ) : Operating time shall be measured with cycles until terminal voltage reaches the specified cut-off voltage.
    - vi) Vibration Resistance : Amplitude ; 2 mm  
Number of Vibrations : 1000 rpm.  
Directions ; X, Y, Z  
Time ; 30 minutes in each direction

vii) Leakage Resistance

: Heat cycle test

Leakage, appearance and outer dimensions shall be checked after 10 cycles according to MIL-STD-202E-106D.

The battery shall be kept in a dry place. It should not show any dew point when stored in this condition.

#### 9. Precautions for use

- 1) A battery shall not be stored at temperatures in excess of 45°C. Storage at less than 30°C is recommended. Storage at less than -40°C can deform the plastic parts and may cause a leakage. To prevent self-discharge caused by corrosion, or decrease of insulation, humidity during storage shall be less than 70%.
- 2) The battery is not explosion resistant construction. Pay attention to the following cautions should be taken, because combustible materials such as lithium metal and organic electrolyte are contained in the battery.
  - \* Do not use except in applicable model or equipment.
  - \* Do not connect more than three cells in series.
  - \* Do not mix different types (chemistries) of batteries.
  - \* Do not short circuit.
  - \* Do not dispose in fire.
  - \* Do not charge.
  - \* Do not disassemble.
  - \* Do not connect the wrong polarity (+, -)
- 3) Keep away from heat source of flame.
- 4) The battery shall not be washed by ultrasonic wave washer.

