

Lithium-ion Battery



Basic Characteristics

Nominal Capacity	120 mAh (0.2 C discharge)
Minimum Capacity	110 mAh (0.2 C discharge)
Charging Voltage	4.2 V
Nominal Voltage	3.6 V
Standard Charge	Method : CC / CV (constant current / constant voltage) Current : 0.5 C Voltage : 4.2 V End Current : 0.02 C
Maximum Charge Current	1 C
Maximum Discharge Current	2 C
End of Discharge Voltage	2.75 V
Weight	Approximately 5.2 g
Operating Temperature	Charge : -20°C to 45°C Discharge : -20°C to 60°C
Storage Temperature	-5°C to 35°C
Appearance	There shall be no such defect as scratch, flaw, crack, rust, leakage, which may adversely affect commercial value of the cell

Note: 1 C = 1 Capacity

Technical Requirements

Testing Conditions (Unless Otherwise Specified)

Temperature : 20 ±1°C
Relative humidity : ≤ 75 ±5% RH
Atmosphere pressure : 1 atm
Accuracy of voltmeters and ammeters used in the test is equal to or better than the grade 0.5

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Electrical Characteristics

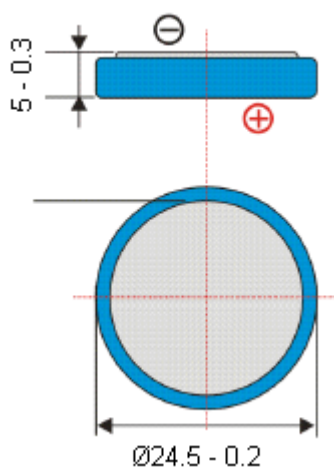
Item	Testing Instruction	Requirements
Charge Condition	Charge the battery with constant current 0.5 C to 4.2 V and then charge at constant voltage 4.2 V until the current decays to 0.02 C during the constant voltage stage	-
Nominal Capacity	Within one hour after the charge according to 2.2.1, discharge at 0.2 C until 2.75 V cut-off voltage	Capacity \geq nominal capacity
1 C discharge	With in 1 hour after the charge according to 2.2.1, discharge at constant current 1 C until 2.75 V cut-off voltage. If the discharge duration does not reach specified value, the test may be repeated up to three times in total	\geq 90% of the nominal capacity
Cycle Life	After the charge according to 2.2.1, the battery stays for 1 hour. At 25 \pm 5°C, discharge the battery at constant current 0.5 C until 2.75 V cut-off voltage. Then the battery stays for 1 hour. A cycle defined as one charge and discharge. This charge and discharge circle shall be repeated 500 times	The capacity at 500th cycle \geq 80% of the nominal capacity
Electricity Preservation	After the charge according to 2.2.1, the battery stays at 20 \pm 5°C for 28 days and then discharge at 0.2 C to 2.75 V cut-off	The discharge capacity 80% of the nominal capacity
High Temperature Performance	After the charge according to 2.2.1, store the testing cells at 60 \pm 2°C for 4 hours. Then discharge at 1 C until 2.75 V cut-off voltage	The discharge capacity 90% of the nominal capacity
Low Temperature Performance	After the charge according to 2.2.1, store the testing cells at -20 \pm 2°C for 16 to 24 hours. Then discharge at 0.2 C until 2.75 V cut-off voltage	The discharge capacity 60% of the nominal capacity
Short-circuit	After the charge at 2.2.1, short circuit the cathode and anode. Stop testing when battery temperature decays to about 10°C from the maximum temperature	No fire, no explosion
Overcharge	Put the testing batteries connecting with thermocouple in ventilated cabinet, connect the cathode and anode to a power supply with CC / CV (constant current / constant voltage) function. Adjust the current to 3 C and voltage to 4.6 V. Then charge the battery at 3 C until the limit voltage reaches 4.6 V. The charging continued for 8 hrs	No fire, no explosion

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Item	Testing Instruction	Requirements
Hot Box Test	Put the testing batteries connecting with thermocouple in constant temperature box. Heat the batteries and box (speed of ascending temperature is $5 \pm 2^{\circ}\text{C}$ at room temperature simultaneously). Monitor the temperature change of the box. Keep for 10 minutes after the box temperature reaches $150 \pm 2^{\circ}\text{C}$, then stop the test	No fire, no explosion
Vibration Test	After the charge at 2.2.2, put the testing battery on the vibration testing equipment. Vibrate it from X,Y two different directions for 30 minutes (Frequency of vibration: 10 Hz - 30 Hz, displacement of single swing: 0.38 mm; Frequency of vibration: 30 Hz-55 Hz, displace of single swing: 0.19 mm) in swept vibration from 10 Hz to 50 Hz. The swept rate is 1 oct / min.	No fire, no explosion $\geq 90\%$ of the nominal capacity
Drop Test	After the charge at 2.2.2, free drop the testing battery from the height of 1 meter (the lowest point height) once from the each six positive and negative X, Y, Z directions to the hardwood board (the thickness of the board is about 50 mm)	No fire, no explosion $\geq 90\%$ of the nominal capacity

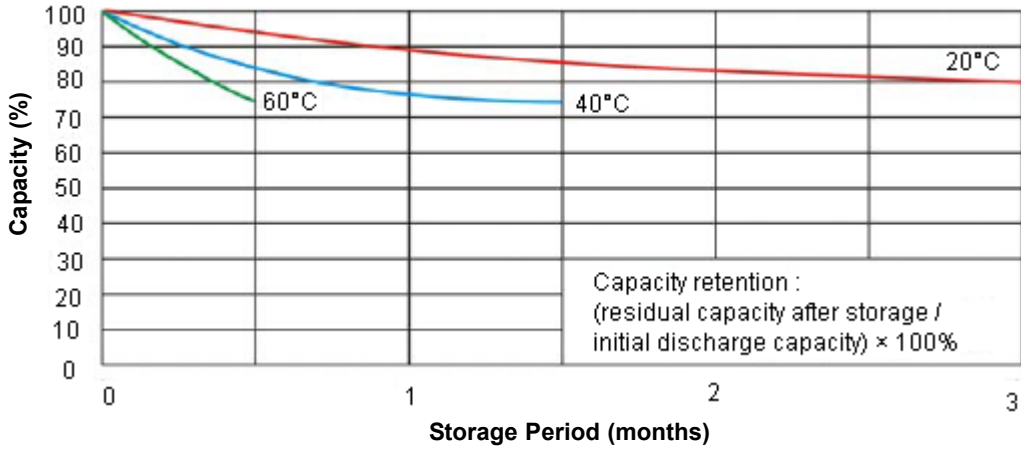
Battery Dimension



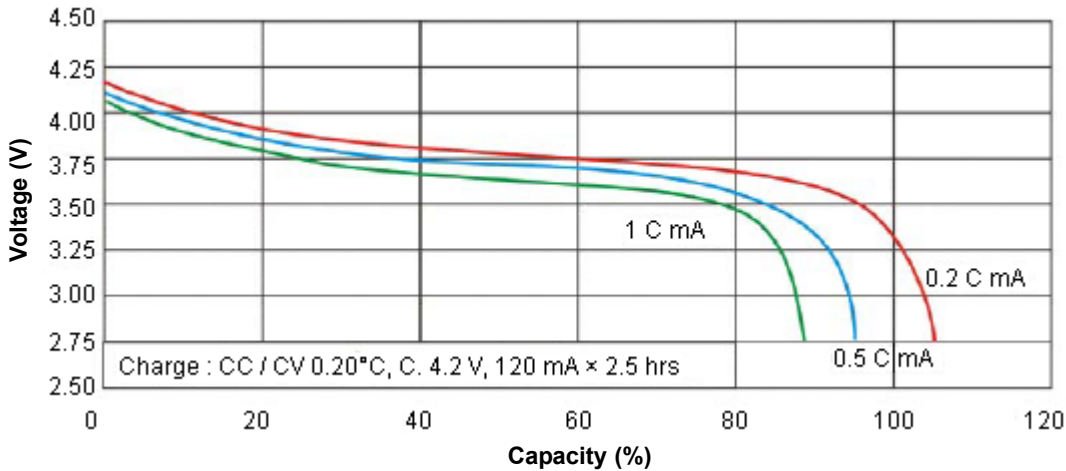
Dimensions : Millimetres

Discharge Characteristics

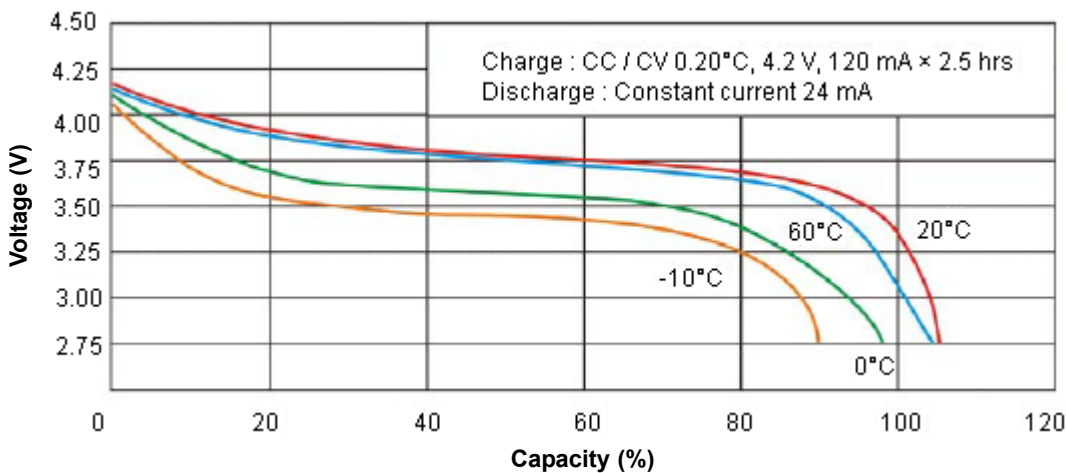
LIR2450 Storage Characteristics



LIR2450 Typical Discharge Characteristics at Various Currents



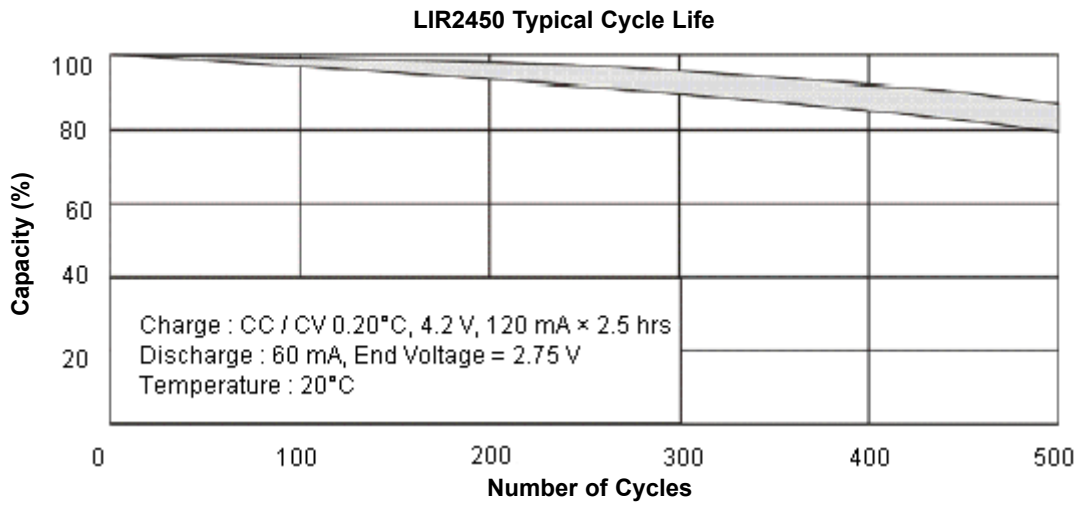
LIR2450 Typical Temperature Characteristics



Lithium-ion Battery



Discharge Characteristics



Part Number Table

Description	Part Number
Coin Cell, Lithium, 3 V, 120 MAH	LIR2450

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