


# LITHIUM POLYMER BATTERY

## LP-502030+PC RECHARGEABLE BATTERY

SPECIFICATIONS		
Typical Capacity		250 mAh
Minimum Capacity*1		230 mAh
Nominal Voltage		3,7 V
Voltage Range		3.0 to 4.2V
Discharge Condition	Max. Current	2C mA
	Cut-off Voltage	3.0V
AC Impedance(mOHM)		Max. 20 at 1KHz
Operating Temp	Storage	-20°C ~ 60°C
	Charge	0°C ~ 45°C
	Discharge	-20°C ~ 60°C
Energy Density	Volumetric	315 Wh/l
	Gravimetric	158 Wh/kg



\* The design in the photo is for visual purpose only

\*1.Nominal Capacity: 23±3°C, 0.2C, 2,75V cutoff Discharge Capacity

MECHANICAL DATA	
Thickness	5,0 mm
Width	20,0 mm
Height	30,0 mm
Weight	6,0 ± 0.5g


CHARGING			
Charge Condition	Charge Method	CC/CV	
	Max. Current	1.0CmA (250mA)	
	Voltage	4.2 ± 0.03V	
	Charge battery in a temperature range of 0°C to +45°C. Maximum charge rate at C rate, charge battery at a constant current until 4.2V ± 0.03V per cell is attained. Hold at 4.2V per cell until current declines to C/10. Then cut off charge voltage.		
	Approx. Charging time	C rate	
C/2			3 ~ 4 hours
C/5			6 ~ 7 hours

Never charge batteries unattended. It's recommended to use a fireproof container.

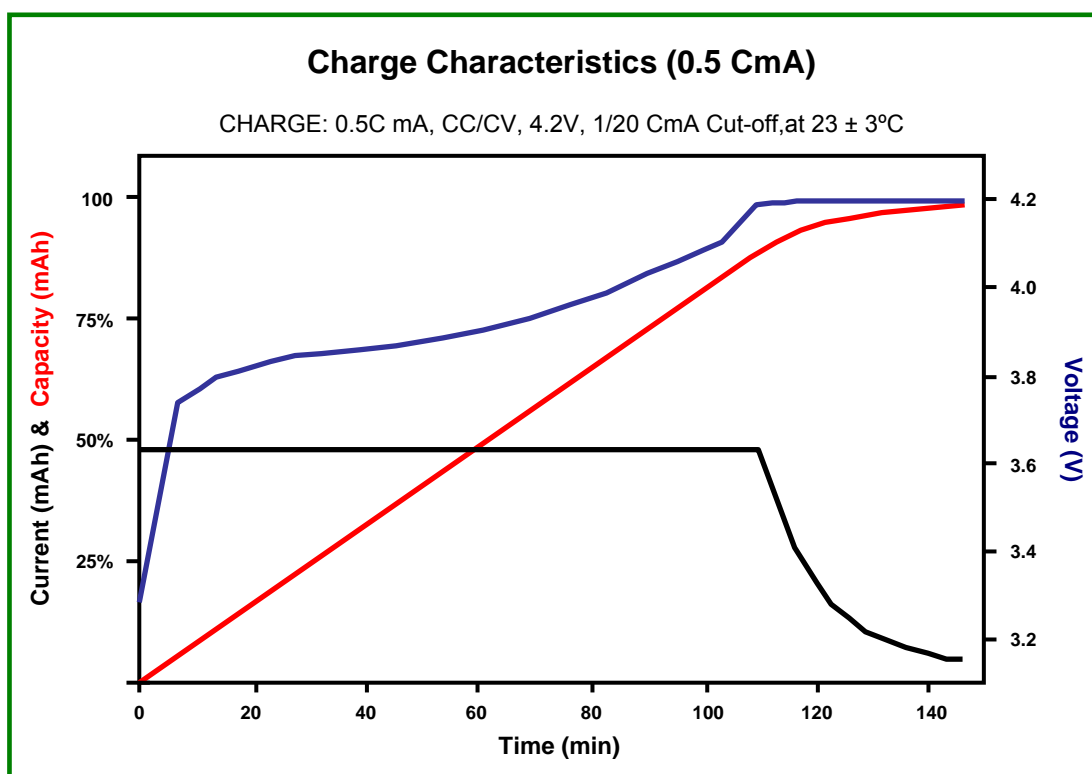
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PROTECTION CIRCUIT MODULE	
Overcharge Voltage	4.28 ± 0.03V
Overdischarge Voltage	2.30 ± 0.1V
Overcurrent	3 ± 1 A
Short Protection	Cut short circuit

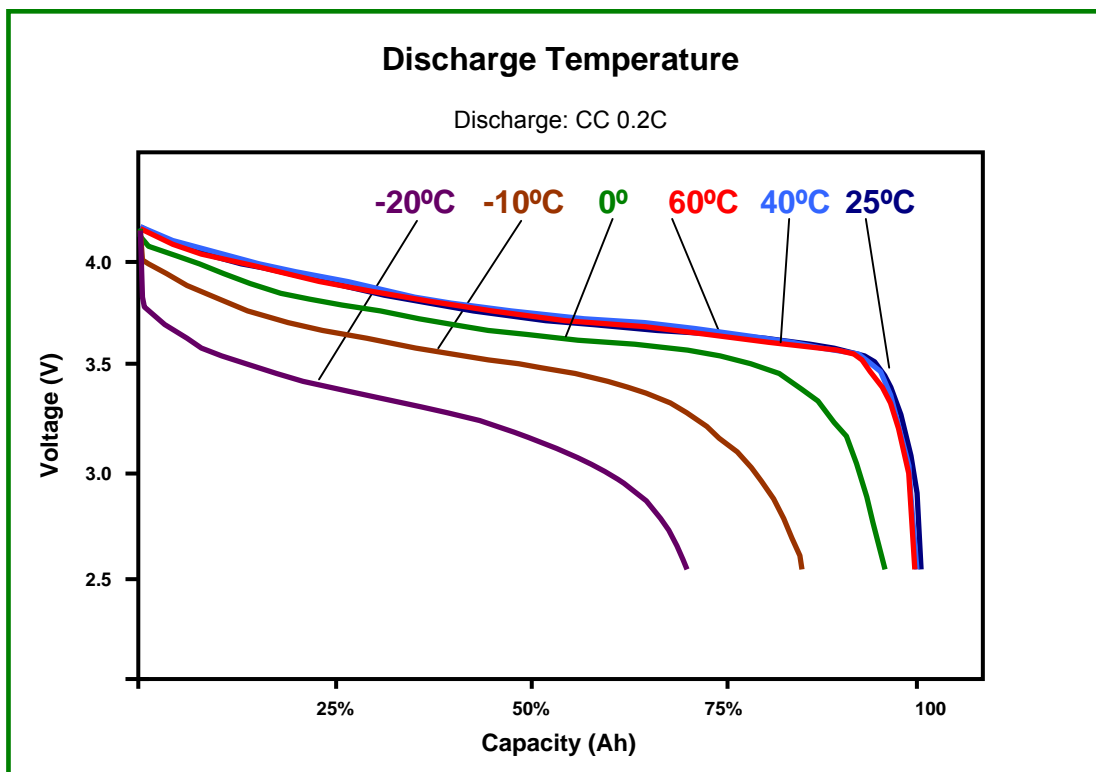
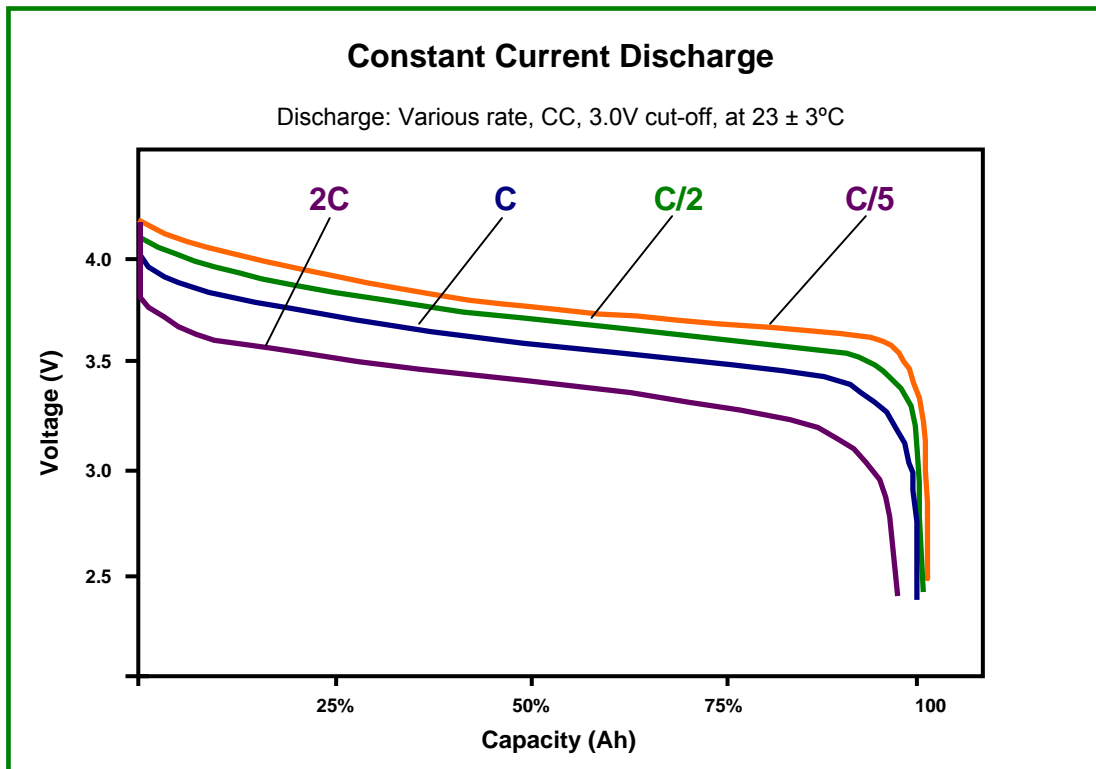


ITEM		CRITERION	REMARKS
C-rate characteristics	0.2C	100%	Test Temperature:23±3°C Charge:1.0CmA,CC/CV,4.2V Discharge:Each Rate,CC,3.0V
	1C/0.2C	≥98%	
Temperature Dependence of Capacity	60°C	≥95%	Percentage of 23±3°C capacity is 100% -On the standing setting temperature, cell state is full-charge(4.2V). -Measured with discharge current 0.5CmA with 3.0V. -Interval for temperature's change is 2Hrs.
	45°C	≥97%	
	23°C	1	
	0°C	≥90%	
	-10°C	≥70%	
Cycle Life Characteristics		≥500cycles	More than 80% of initial capacity (Charge:1.0C,CC/CV,4.2V,C/20 end Discharge:1.0C,CC,3.0V)
Storage Characteristics (Recovery Capacity)	6 Month at 23°C	≥90%	On a storage,Cell state is 40%~60% charge(3.7~3.9V)
	3 Month at 45°C	≥80%	
	1 Month at 60°C	≥80%	



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### **! Danger**

- “Do not disassemble or reconstruct battery”
- “Do not short-circuit battery”
- “Do not use or leave battery nearby fire, stove or heated place (>80°C)”
- “Do not immerse the battery in water or sea water , or get it wet”
- “Do not charge battery nearby the fire or under the blazing sun”
- “Do use the specified charger and observe charging requirement”
- “Never charge batteries unattended”
- “Put battery in the fireproof container, charge in an isolated area, away from other flammable materials. Always have fire extinguisher for emergency use”
- “Do not use the battery with conspicuous damage or deformation”
- “Do not make the direct soldering on battery”
- “Do not reverse charge or overdischarge the cell”
- “Do not connect battery to the plug socket or car-cigarette-plug”
- “Do not use battery for unspecified equipment”
- “Do not touch a leaked battery directly”

### **! Warning**

- “Do not use Lithium ion battery in mixture”
- “Keep the battery away from babies”
- “Do not continue to charge battery over specified time”
- “Do not get into a microwave or a high pressure container”
- “Do not use a leaked battery nearby fire”
- “Do not use an abnormal battery”