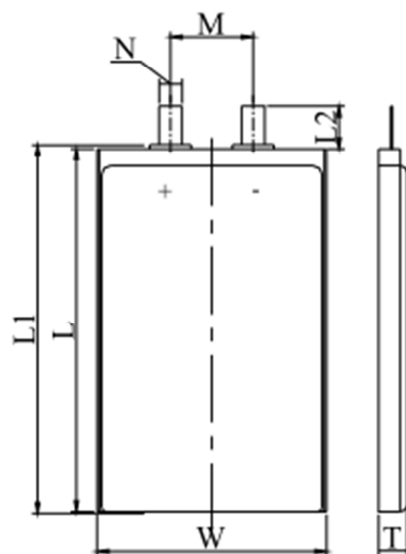


2. Product Basic Characteristics

No.	Item	Characteristics	Remark	
2.1	Model	LP523448		
2.2	Capacity	Nominal Capacity	900 mAh	0.2C ₅ A
		Minimum	850 mAh	0.2C ₅ A
2.3	Nominal Voltage	3.7 V		
2.4	Weight	Approx. 18 g		
2.5	Internal Impedance	≤ 90 mΩ	AC 1KHz	
2.6	Dimension	Length	≤ 49 mm	
		Width	≤ 34.5 mm	
		Thickness	≤ 5.5 mm	
2.7	Charge	Maximum Current	900 mA	1.0C ₅ A (CC&CV)
		Limited Voltage	4.200 ± 0.020 V	
		End-of Current	18 mA	
2.8	Discharge	Maximum Current	1800 mA	2.0C ₅ A
		Cut-off Voltage	2.750 ± 0.005 V	
2.9	Operation Temperature	Charge	0 ~ 45 °C	
		Discharge	-20 ~ +60 °C	
2.10	Storage Temperature	1 month	-20 ~ +60 °C	
		3 month	-20 ~ +45 °C	
		12 month	-20 ~ +25 °C	
2.11	Storage Relative Humidity	65 ± 20 %		

3. Shape and Dimensions (Unit: mm)

Item	Specification
T	Max5.5
W	Max34.5
L	Max49
L1	Max50
L2	10 ± 1
M	19.5 ± 1
N	4.0 ± 0.5



5. Specification

5.1 Electrical Characteristics

No.	Item	Criteria	Test Instructions
5.1.1	1C ₅ A rate discharge capacity	Discharge Time ≥ 57 min	Full charge at $20 \pm 5^\circ\text{C}$, rest for 30 min, then discharge at the same temperature with 1.0C ₅ A to 2.75V.
5.1.2	High temp. discharge capacity	Discharge Time ≥ 54 min	Full charge at $20 \pm 5^\circ\text{C}$, store at $55 \pm 2^\circ\text{C}$ for 2h, then discharge at the same temperature with 1.0C ₅ A to 2.75V.
5.1.3	Low temp. discharge capacity	Discharge Time ≥ 4.25 h	Full charge at $20 \pm 5^\circ\text{C}$, store at $-10^\circ\text{C} \pm 2^\circ\text{C}$ for 16h~24h, then discharge at the same temperature with 0.2C ₅ A to 2.75V
5.1.4	Cycle Life	≥ 300 Cycles	After full charge, rest for 10 min, discharge at constant current of 1.0C ₅ A to 2.75V. Batteries are full charge after 10 minutes. Repeat above steps till retained capacity is 80%
5.1.5	Capacity Retention	Discharge Time ≥ 4.5 h	After full charge, store at $20 \pm 5^\circ\text{C}$ for 28 days. Then discharge with 0.2C ₅ A to 2.75V

5.2 Acclimatization Characteristics

No.	Item	Criteria	Test Instructions
5.2.1	High Temp. and High Humidity	No deformation, no rust, no fire or explosion; Discharge time ≥ 36 min	After full charge, store at $40^\circ\text{C} \pm 2^\circ\text{C}$ (90%~95%RH) for 48h. After test, place at $20^\circ\text{C} \pm 5^\circ\text{C}$ for 2h and then discharge with 1C ₅ A to end-voltage
5.2.2	Vibration	No damage, no leakage, no fire or explosion; Battery Voltage ≥ 3.6 V	Batteries are vibrated 30 min in three mutually perpendicular directions with amplitude of 0.38mm (10~30Hz) or 0.19mm (30~55Hz) and the scanning rate of 1oct per min
5.2.3	Drop	No leakage, no fire or explosion; Discharge Time ≥ 51 min	Batteries are dropped onto a hard board with the thickness of 18~20mm from 1meter

5.3 Safety Characteristics

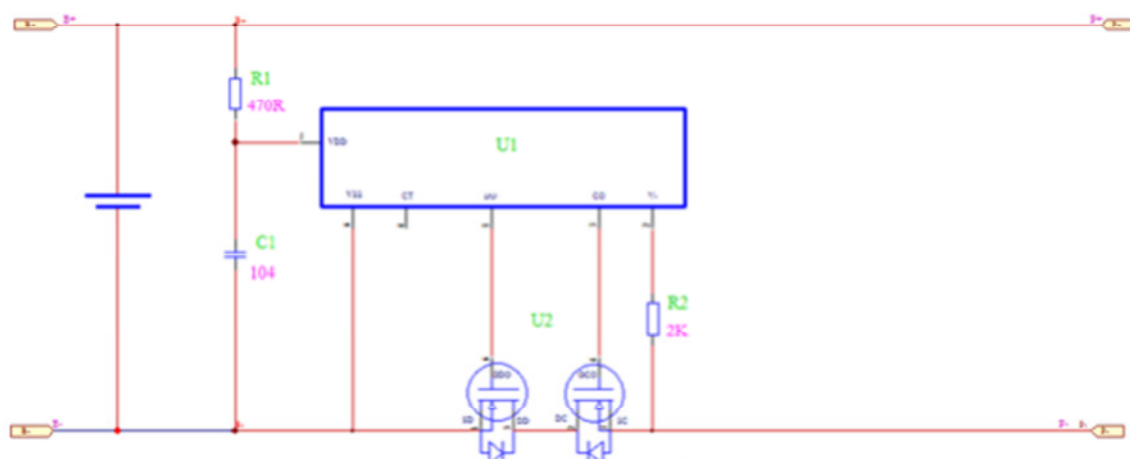
No.	Item	Criteria	Test Instructions
5.3.1	Overcharge	No fire or explosion	Charged the cells at 3C ₅ A current 20±5°C with a voltage limit of 4.8V and Current close to 0 A
5.3.2	Short-Circuit	No fire or explosion; The maximum Temperature: 150°C	Batteries are short-circuited by connecting the positive and negative terminals for 1h with a resistance load of 0.1 Ω
5.3.3	Heating	No fire or explosion	Cell is heated in a circulating air oven at a rate of (5±2) °C per minute to 130±2°C, and then placed for 30 minutes at 130±2°C

Note: Unless otherwise specified, all tests stated in this specification are conducted at the following conditions:
Temp. : 20±5°C; Relative Humidity: 25%~85%.

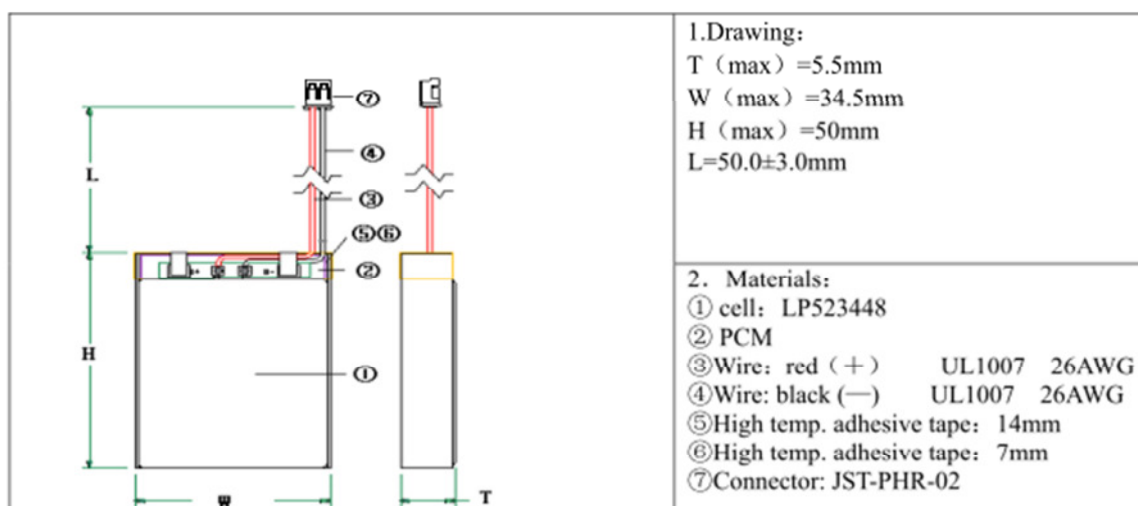
6.1.0 Basic Specification(T=25°C)

Item	Symbol	Content	Criterion
Over charge Protection	V _{DET1}	Over charge detection voltage	4.28±0.05V
	tV _{DET1}	Over charge detection delay time	0.96S-1.40S
	V _{REL1}	Over charge release voltage	4.175±0.025V
Over discharge protection	V _{DET2}	Over discharge detection voltage	3.0±0.10V
	tV _{DET2}	Over discharge detection delay time	115ms-173ms
	V _{REL2}	Over discharge release voltage	3.5±0.050V
Over current protection	V _{DET3}	Over current detection voltage	0.10±0.015V
	I _{DP}	Over current detection current	2.0-6.0A
	tV _{DET3}	Detection delay time	7.2ms-11.0ms
		Release condition	Cut load
Short protection		Detection condition	Exterior short circuit
		Release condition	Cut short circuit
Interior resistance	R _{DS}	Main loop electrify resistance	VC=4.2V,R _{DS} ≤70mΩ
Current consumption	I _{DD}	Current consume in normal operation	3.0μA Type 7.0μA Max

6.2.0 PCM Circuit Diagram



7. Pack's Dimension



8. Pack's voltage and internal resistance

Voltage: 3.7~3.8V

Internal Resistance: $\leq 200\text{m}\Omega$

! Danger

- Strictly prohibits heat or throw cell into fire.
- Strictly prohibits throw and wet cell in liquid such as water, gasoline or drink etc.
- Strictly prohibits use leave cell close to fire or inside of a car where temperature may be above 60°C. Also do not charge / discharge in such conditions.
- Strictly prohibits put batteries in your pockets or a bag together with metal objects such as necklaces, Hairpins, coins, or screws. Do not store or transportation batteries with such objects.
- Strictly prohibits short circuit the (+) and (-) terminals with other metals.
- Do not place Cell in a device with the (+) and (-) in the wrong way around.
- Strictly prohibits pierce Cell with a sharp object such as a needle.
- Strictly prohibits disassemble or modify the cell.
- Strictly prohibits welding a cell directly.
- Do not use a Cell with serious scar or deformation.
- Thoroughly read the user's manual before use, inaccurate handling of lithium ion rechargeable cell may cause leakage, heat, smoke, an explosion, or fire, capacity decreasing.

! Warning

- Strictly prohibits put cell into a microwave oven, dryer, or high-pressure container.
- Strictly prohibits use cell with dry cells and other primary batteries, or new and old battery or batteries of a different package, type, or brand.
- Stop charging the Cell if charging is not completed within the specified time.
- Stop using the Cell if abnormal heat, odor, discoloration, deformation or abnormal condition is detected during use, charge, or storage.
- Keep away from fire immediately when leakage or foul odor is detected.
- If liquid leaks onto your skin or clothes, wash well with fresh water immediately.
- If liquid leaking from the Cell gets into your eyes, do not rub your eyes. Wash them well with clean edible oil and go to see a doctor immediately.

! Caution

- Before using the Cell, be sure to read the user's manual and cautions on handling thoroughly.
- Charging with specific charger according to product specification. Charge with CC/CV method. Strictly prohibits reversed charging. Connect cell reverse will not charge the cell. At the same time, it will reduce the charge-discharge characteristics and safety characteristics, this will lead to product heat and leakage.
- Store batteries out of reach of children so that they are not accidentally swallowed.
- If younger children use the Cell, their guardians should explain the proper handling.
- Before using the Cell, be sure to read the user's manual and cautions on handling thoroughly.
- Batteries have life cycles. If the time that the Cell powers equipment becomes much shorter than usual, the Cell life is at an end. Replace the Cell with a new same one.
- When not using Cell for an extended period, remove it from the equipment and store in a place with low humidity and low temperature.
- While the Cell pack is charged, used and stored, keep it away from objects or materials with static electric charges.
- If the terminals of the Cell become dirty, wipe with a dry clothe before using the Cell.
- Storage the battery in storage temperature range as the specifications. After full discharged, we suggest

that charging to 3.7~4.0V with no using for a long time.

- Do not exceed these ranges of the following temperature ranges:

Charge temperature range : 0°C to 45°C;

Discharge temperature range : -20°C to 60°C.

Store less than 1 month : -20°C - +60°C

Store less than 3 months : -20°C - +45°C

Store less than 1 year : -20°C - +25°C

! Special Notice

Keep the battery in **50% charged state** during long period storage. We recommend to charge the battery up to 50% of the total capacity every 3 months after receipt of the battery and maintain the voltage 3.7~4.0V. And store the battery in cool and dry place.