

**Lithium Polymer Battery
Specification**

Model: PCLP383840-530mAh

ZEUS CONFIDENTIAL

Amendment History

Rev	Description	Date	Name
Pre	Initial Release	7-26-16	Kevin Oh
A	Updated wires harness length: 38+/-3mm	11-28-16	Kevin Oh

Customer Approval

Company/Customer Name	Department	Date	Signature

1. Scope

This product specification applies to rechargeable Lithium Polymer battery supplied by Zeus Battery Products.

2. Description and Model

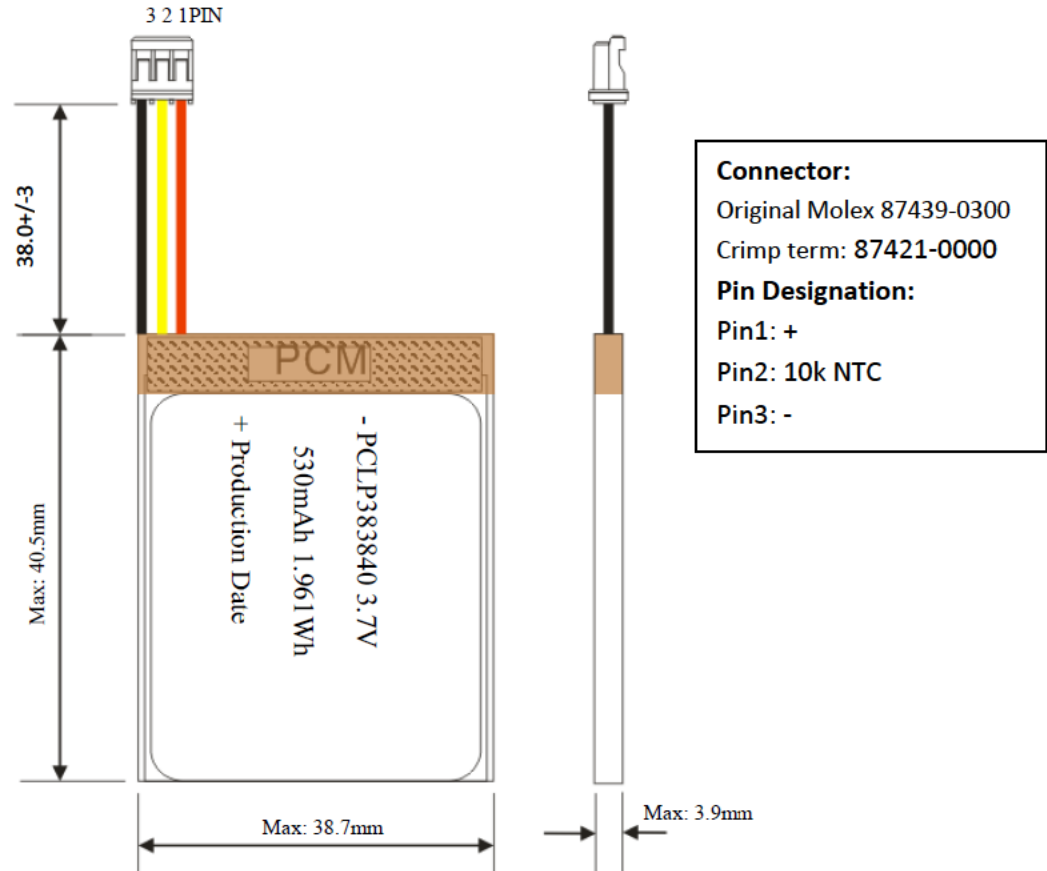
Model: PCLP383840

Description: 3.7V 530mAh

3. Nominal Specifications

No.	Item	Specification	Remark
1	Nominal Capacity	530mAh	0.2C discharge at 25±2°C
2	Nominal Voltage	3.7V	
3	Charge Voltage	4.20±0.03V	
4	Charge current	Standard: 106mA (0.2C) Rapid: 530mA (1C)	
5	Charging time	Approx. 6 hrs on standard charge	
6	Standard discharge current	106mA (0.2C)	
7	Max. continuous discharge current	530mA (1C)	
8	Discharge cut-off Voltage	3.0V	
9	Internal resistance	≤190mΩ	
10	Weight	Approx. 11.0g	
11	Dimensions	3.9(T)*38.7(W)*40.5(L)mm	
12	Operating temperature	Charge: 0 ~ 45°C Discharge: -20 ~ 60°C	
13	Cycle Life	500 cycles	At 0.2c discharge at 25±2°C

3. Pack Dimension



4. Standard Test Conditions

4.1 Environmental Conditions

Unless otherwise specified, all tests stated in this specification are conducted at $25 \pm 5^\circ\text{C}$ and $60 \pm 20\%$ humidity.

4.2 Measuring Equipment

1) Ammeter and Voltmeter

Standard class specified in the national standard or more sensitive class

2) Slide caliper

The slide caliper should have 0.01mm accuracy.

3) Impedance meter

An impedance meter with 1kHz AC should be used.

191 Covington Drive, Bloomingdale, IL 60108

Phone: 630-295-6800 Fax: 630-295-6801

Toll Free: 877-469-4255

4.1 Test Procedure and Standard

No.	Item	Measuring Procedure	Standard
1	Appearance	Visual	No defects and/or leakage
2	Dimension	Sliding caliper	
3	Open circuit voltage	Voltmeter	≥3.80V
4	Discharge capacity	Within 1 hr after standard discharge	≥530mAh
5	Cycle Life (rest for 10 min. between each cycle)	Charge: 0.2C CC to 4.2V, Discharge: 0.2C CC to 3.0V	Record discharge capacity on 501 st cycle.

5. Safety Performance

Item	State	Test method	Specification
External Short-circuit Test	Fully Charged	Cell terminals are short-circuited to discharged state less than 0.1V or longer time with a resistance of 50mΩ or less. Tests are to be conducted at room temperature.	NO EXPLOSION AND NO FIRE.
Over-Discharge Test	Fully Charged	Cell is discharged at a current of 1C rate for 2.5 hours. (If current stops by safety or passive circuit on the battery, test is finished.)	NO EXPLOSION AND NO FIRE.
Heating Test	Fully Charged	The temperature of the oven is to be raised at a rate of 5±2°C/min. to a temperature of 130±2°C, and remains for 30 minutes at this temperature.	NO EXPLOSION AND NO FIRE.
Crush Test	Fully Charged	Crush between two flat plates. Applied force is about 13kN.	NO EXPLOSION AND NO FIRE.
Impact Test	Fully Charged	Impact between bar (15.8mm diameter) and 9.1Kg falling material (at a height of 60 cm). Bar is laid across the center of the test sample.	NO EXPLOSION AND NO FIRE.
Drop Test	Fully Charged	Drop a fully charged cell onto a concrete floor from the height of 1.0 meters for 2 times.	NO EXPLOSION AND NO FIRE.
Vibration Test	Fully Charged	Vibrate the cell in tri-axial directions each for 90~100 min. in conditions of 10~55 Hz with amplitude 0.8 mm.	NO EXPLOSION DEFORMATION AND NO FIRE
Abnormal Charge Test	Fully Discharged	Charge the cell with 3 times of max charge current by connecting it to a 4.6V dc-power supply for 7 hours.	NO EXPLOSION AND NO FIRE.

191 Covington Drive, Bloomingdale, IL 60108
Phone: 630-295-6800 Fax: 630-295-6801
Toll Free: 877-469-4255

7. Handling Precautions

- ◆ Don't immerse battery in water or allow it to get wet!
- ◆ Don't charge, use and store battery near a heat source such as fire heater! If the battery leaks or releases strange odor, please remove from heats source immediately. Fully charge the battery before first-time use
- ◆ Don't reverse the positive and negative pole of battery!
- ◆ Don't throw the battery into fire or heat it!
- ◆ Don't short-circuit battery with wire or other metal objects!
- ◆ Don't nail, knock or trample the battery!
- ◆ Don't disassemble the battery in any way!
- ◆ Don't put the battery into microwave oven or pressure vessel!
- ◆ If the battery gives off odor, gets heat, deformation, discoloration or appears and abnormal behaviors, stop using it. Please remove the battery from electrical appliances and stop using it if the battery is being used or charged!
- ◆ Don't use battery in a very hot environment, such as under direct sunlight or in car on hot day. Otherwise, the battery will overheat which will affect battery performance and shorten battery life!
- ◆ If the battery leaks and electrolyte leakage enters into the eyes, don't rub, rinse with water immediately and seek immediate medical assistance.
- ◆ Ambient temperature will affect the discharge capacity of battery, if the ambient temperature is beyond the standard environment ($23\pm 2^{\circ}\text{C}$), the discharge capacity will be changed.

8. Warranty

Products supplied by Zeus Battery Products contain 12 months warranty against manufacturing defects. Any damage resulting either from user misuse or abuse will void the warranty.

Note: This product specification is subject to change without prior notice.

191 Covington Drive, Bloomingdale, IL 60108
Phone: 630-295-6800 Fax: 630-295-6801
Toll Free: 877-469-4255
