

**Lithium Polymer Battery
Specification**

Model: PCLP602025

ZEUS CONFIDENTIAL

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

Amendment History

Rev	Description	Date	Name
Pre	Initial Release	7-11-16	Kevin Oh
A.0	Added Air shipment reference	10-25-16	Kevin Oh

Customer Approval

Company/Customer Name	Department	Date	Signature

- **For Air Shipments:** A 30% state of charge (SOC) limit on secondary lithium-ion cells and batteries, including Section II cells and batteries, will now apply. This does not apply to batteries packed with or contained in equipment (Effective April 1, 2016).
- Lithium cells/battery packs must be charged within 45 days of receipt to avoid over discharge.
- Shipping lithium materials must be done through a licensed shipper with appropriate packaging & labeling to meet current regulations.

These amendments are detailed in a lithium battery update document found on the International Air Transport Association (IATA) website: <http://www.iata.org/whatwedo/cargo/dgr/Documents/lithium-battery-update.pdf>

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1. Scope

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

2. Description and Model

Model: PCLP602025

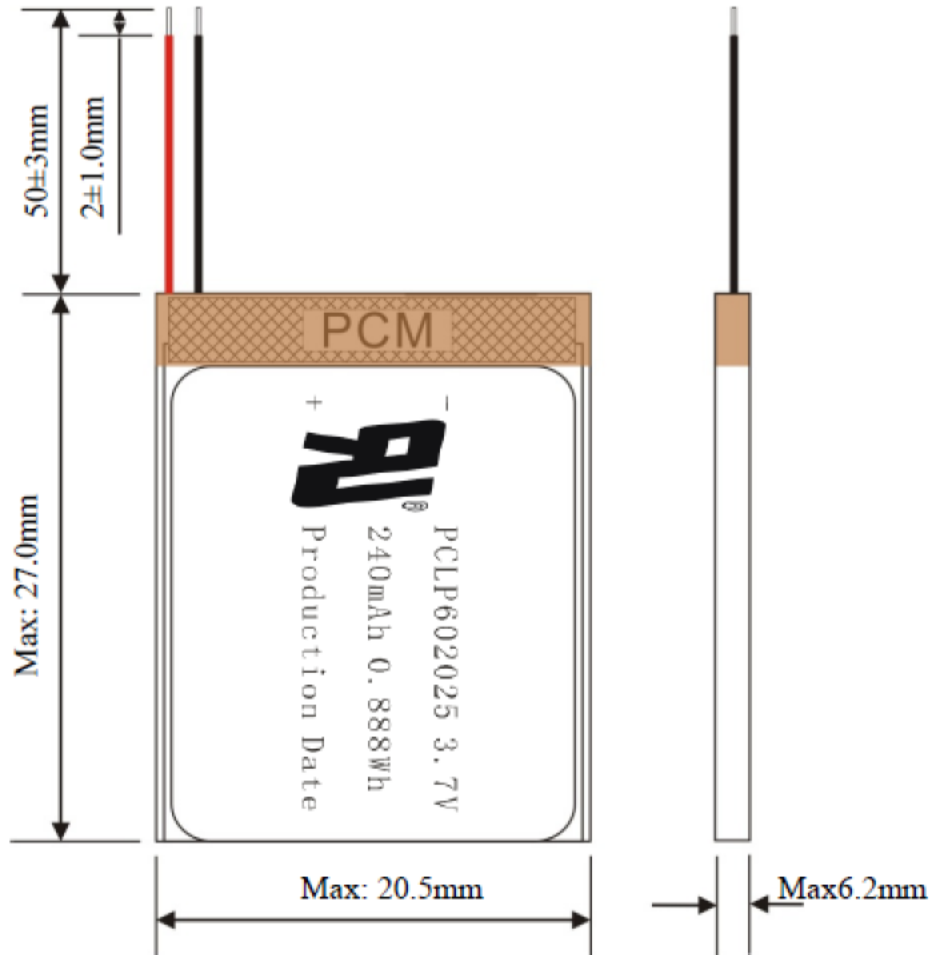
Description: 3.7V 240mAh

3. Nominal Specifications

No.	Item	Specification	Remark
1	Nominal Capacity	240mAh	@ 0.2C discharge, room temperature
2	Nominal Voltage	3.7V	
3	Charge Voltage	4.20V	
4	Standard Charge current	48mA	0.2C
5	Max. continuous charge current	240mA	1.0C
6	Max. continuous discharge current	240mA	1.0C
7	Discharge cut-off Voltage	3.0V	
8	Pack Internal resistance	≤220mΩ	@ AC 1kHz
9	Pack configuration	1S	
10	Operating temperature	Charge: 0 ~ 45°C Discharge: -20 ~ 60°C	
11	Storage temperature	1 yr: -10 ~ 25°C 6 months: -10 ~ 45°C 1 month: -10 ~ 55°C	
12	Cycle Life	≥500 cycles	@ 0.2C discharge, room temperature

*Note on Air transport: Lithium ion cells and batteries must be offered for transport at a state of charge (SOC) not exceeding 30% of their rated design capacity

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

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2) Slide caliper

The slide caliper should have 0.01mm accuracy.

3) Impedance meter

An impedance meter with 1kHz AC should be used.

5. Environmental Tests

No	Items	Test Method and Condition	Criteria
1	Free fall test	The battery is to be fully charged in accordance with standard charge condition, then drop the battery three times from a height of 1.0 m onto a concrete floor. The batteries are dropped so as to obtain impacts in random orientations.	No Fire,
2	Vibration test	After standard, install battery on the vibration table; adjust the equipment according to the following vibration and amplitude frequency. From X,Y,Z three directions in 10Hz~55Hz sweep vibration to sweep for 30mins with the sweep frequency speed rate at 1oct/min: Vibration frequency: 10Hz~30 Hz(single amplitude) Displacement amplitude(single): 0.38mm; Amplitude frequency: 30Hz~55 Hz(single amplitude) Displacement amplitude (single): 0.19mm	No explosion, No leakage, No fire
3	Shock Test	Affix the battery through the fixture from the three perpendicular X,Y,Z axes respectively to the vibration table, then following the requests below to adjust the acceleration, pulse duration time for crash test: Pulse peak acceleration: 100m/s ² , Collision frequency per min: 40~80 Pulse duration time: 16mins collision Frequency: 1000±10	No explosion, No fire
4	Thermal Test	After standard charging, put cell in the baking oven and start, the temperature of the oven is to be raised at a rate of 5±2°C per minute to a temperature of 130±2°C, remain for 30minutes at that temperature.	No explosion, No leakage, No fire

6. Battery 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 or a heater! If the battery leaks or releases strange odor, please remove from heat source immediately.
- ◆ Don't reverse the positive and negative polarity!
- ◆ Always recharge before first time use!
- ◆ Don't short-circuit battery with wire or other metal objects!
- ◆ Don't disassemble the battery in any way!
- ◆ Don't put the battery into microwave oven or pressure chamber!
- ◆ 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 enters into the eyes, don't rub. Rinse with fresh 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 affected.

7. 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.