PX502030

Battery Spec

Model: PX502030

Stock Code : 900.869.503.206

Nominal Voltage: 3.7V

Capacity: 250mAh

Draft	Checking	Approved	Customer Confirmation
Dora	Peter		

Revision History

Revision	Date	Editor	Contents
A0	2018-07-24	Dora	Draft
A1	2018-07-26	Jeff	

1. Product Specification

Single cell

No.	Item	General Parameter		Remark
1	Rated Capacity	Typical	250mAh	Standard discharge（0.2C) after Standard charge
		Minimum	245mAh	
2	Nominal Voltage	3.7V		Mean Operation Voltage
3	Voltage at end of Discharge	2.75V		Discharge Cut-off Voltage
4	Charging Voltage	4.2±0.03V		
5	Internal Impedance	≤250mΩ		Internal resistance measured at AC 1KHZ after 50% charge The measure must uses the new batteries that within one week after shipment and cycles less than 5 times
6	Weight	About 5 g		
7	Standard charge	Constant Current 0.2C Constant Voltage 4.2V 0.01 C cut-off		
8	Standard discharge	Constant current 0.2C end voltage2.75V		
9	Fast charge	Constant Current 1.0C Constant Voltage 4.2V 0.01C cut-off		
10	Fast discharge	Constant current 1.0C end voltage 2.75V		
11	Maximum Continuous Charge Current	1.0C		
12	Maximum Continuous Discharge Current	1.0C		
13	Operation Temperature Range	Charge: 0~45℃		60±25%R.H. Bare Cell
		Discharge: -20~60℃		
14	Storage Temperature Range	Less than 1 year: -20~25℃		60±25%R.H. at the shipment state
		less than 3 months: -20~40℃		
15	Single cell	Length (L)	30.0±0.5mm	Initial Dimension
		Width (W)	20.0±0.5mm	
		Height (H)	5.0±0.2mm	

2. Performance And Test Conditions

2.1 Standard Test Conditions

Test should be conducted with new batteries within one week after shipment from our factory and the cells shall not be cycled more than five times before the test. Unless otherwise specified, test and measurement shall be done under temperature of 20±5℃ and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30℃ and humidity 25~85%RH.

2.2 Measuring Instrument or Apparatus

2.2.1 Dimension Measuring Instrument

The dimension measurement shall be implemented by instruments with equal or more precision scale of 0.01mm.

2.2.2 Voltmeter

Standard class specified in the national standard or more sensitive class having inner impedance more than 10kΩ/V

2.2.3 Ammeter

Standard class specified in the national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01Ω.

2.2.4 Impedance Meter

Impedance shall be measured by a sinusoidal alternating current method(1kHz LCR meter).

2.3 Appearance

There shall be no such defect as flaw, crack, rust, leakage, which may adversely affect commercial value of battery.

2.4 Temperature Dependence of discharge capacity

Table 3 （3）

Discharge Temperature	-10℃	0℃	23℃	60℃
Discharge Capacity （0.2C）	50%	80%	100%	95%

2.5 Cycle Life and Leakage-Proof

Table 4（4）

No.	Item	Criteria	Test Conditions
1	Cycle Life (0.5C)	Higher than 70% of the Initial Capacities of the Cells	Carry out 500cycle Charging/Discharging in the below condition. ◆Charge:Standard Charge ◆Discharge:0.5C to 2.75 V ◆Rest Time between charge/discharge:30min. ◆Temperature:20±5℃
2	Leakage-Proof	No leakage (visual inspection)	After full charge with standard charge, store at 55±3℃, 60±10%RH for 1 week.

3. Mechanical characteristics and Safety Test for Cell

Table 5（5） (Mechanical characteristics)

No.	Items	Test Method and Condition	Criteria
1	Vibration Test	After standard charging, fixed the cell to vibration table and subjected to vibration cycling that the frequency is to be varied at the rate of 1Hz per minute between 10Hz an 55Hz, the excursion of the vibration is 1.6mm. The cell shall be vibrated for 30 minutes per axis of XYZ axes.	No leakage No fire
2	Drop Test	The cell is to be dropped from a height of 1 meter twice onto concrete ground.	No explosion, No fire, no leakage.

Table 6（6） (Safety Test)

Item	Battery Condition	Test Method	Requirements
Crush	Fresh, Fully charged	Crush between two flat plates. Applied force is about 13kN(1.72Mpa) for 30min.	No explosion, No fire
Short Circuit（20℃）	Fresh, Fully charged	Each test sample battery, in turn, is to be short-circuited by connecting the (+) and (-) terminals of the battery with a Cu wire having a maximum resistance load of 0.1Ω.Tests are to be conducted at room temperature(20±2℃).	No explosion, No fire The Temperature of the surface of the Cells are lower than 150℃
Short Circuit（60℃）	Fresh, Fully charged	Each test sample battery, in turn, is to be short-circuited by connecting the (+) and (-) terminals of the battery with a Cu wire having a maximum resistance load of 0.1Ω.Tests are to be conducted at temperature(60±2℃).	No explosion, No fire The Temperature of the surface of the Cells are lower than 150℃
Impact	Fresh, Fully charged	A 56mm diameter bar is inlayed into the bottom of a 10kg weight. And the weight is to be dropped from a height of 1m onto a sample battery and then the bar will be across the center of the sample.	No explosion, No fire
Forced Discharge	Fresh, Fully charged	Discharge at a current of 1.0Cfor 2.5h.	No explosion,No fire
Nail Pricking (3mm)	Fresh, Fully charged	Prick through the sample battery with a nail having a diameter of 3mm and remain 2h.	No explosion, No fire

4. Handling of Cells

4.1 Consideration of strength of film package

1) Soft Aluminium foil

Easily damaged by sharp edge parts such as pins and needles, Ni-tabs, comparing with metal-can-cased LIB.

2).Sealed edge may be damaged by heat above 100°C, bend or fold sealed edge.

4.2 Prohibition short circuit

Never make short circuit cell. It generates very high current which causes heating of the cells and may cause electrolyte leakage, gassing or explosion that are very dangerous.

The Power-Xtra tabs may be easily short-circuited by putting them on conductive surface. Such outer short circuit may lead to heat generation and damage of the cell.

An appropriate circuitry with PCM shall be employed to protect accidental short circuit of the battery pack.

4.3.Mechanical shock

Power-Xtra cells have less mechanical endurance than metal-can-cased LIB.

Falling, hitting, bending, etc. may cause degradation of Power-Xtra characteristics.

4.4 Handling of tabs

The battery tabs are not so especially for aluminum tab.

Don't bend tab.

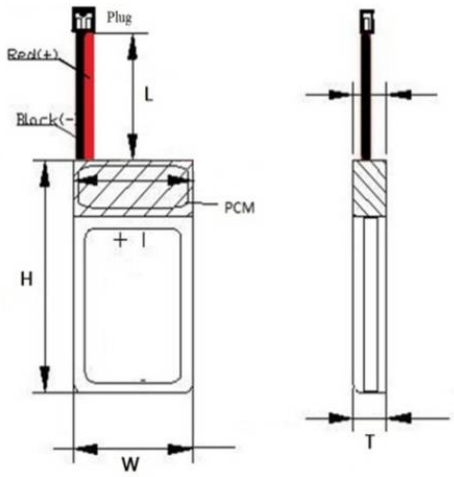
Do not bend tabs unnecessarily.

5. Storing the Batteries

The batteries should be stored at room temperature, charged to about 30% to 50% of capacity. We recommend that batteries be charged about once per half a year to prevent over discharge.

6. Picture

7. Dimension



Dimensions (Units：mm)	PCM	Normal PCM（1.5A）
	Length Cable（L）	70±5mm
	Height (H)	32.0±1mm
	Width (W)	20.5±1mm
	Thickness (T)	5.2±0.5mm
	Cable	UL1571#28AWG
	Plug	Molex 51021-0200

8. Drawing of Label

PET 透明标签，2D(Data Matrix)二维码，内容为“8680187004804”。日期按出货月份更改。YY 为年，MM 为月，年在前,月份在后，（年月），如 1607（2016 年 07 月）。标签格式如下:

9. Drawing Packing

整齐装托盘，内置防潮袋，每箱不超 10KG；客户定制 Logo 纸箱，外箱 Logo 格式如下：

ENA-13 Bar code 条形码/侧唛

贴于纸箱正/背两侧，侧唛尺寸 130*100mm（侧唛尺寸视情况而定）：