

POWER-XTRA

Model : Power-Xtra PX333560 3.7V 650mAh Li-Polymer battery

Ver: A2

NO:900.869.503.192

PX333560

Battery Spec

Model: PX333560

Stock Code: 900.869.503.192

Cell Type: PX333560

Nominal Voltage: 3.7V

Capacity: 650mAh

| Draft | Checking | Approved | Customer Confirmation |
|-------|----------|----------|-----------------------|
| Dora | Peter | | |

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Revision History

| Revision | Date | Editor | Contents |
|----------|------------|--------|------------------|
| A0 | 2018-05-30 | Dora | Draft |
| A1 | 2018-06-05 | Dora | 更改线号 |
| A2 | 2018-06-05 | Dora | 增加二维码内容、增加端子组装信息 |
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1. Product Specification

(Single cell)

| No. | Item | General Parameter | | Remark |
|-----|-----------------------------|--|------------|--|
| 1 | Rated Capacity | Typical | 650mAh | Standard discharge (0.2C) after Standard charge |
| | | Minimum | 637mAh | |
| 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 | ≤200mΩ | | 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 18 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 | Operation Temperature Range | Charge: 0~45°C | | 60±25%R.H. |
| | | Discharge: -20~60°C | | Bare Cell |
| 12 | Storage Temperature Range | Less than 1 year: -20~25°C | | 60±25%R.H. |
| | | less than 3 months: -20~40°C | | at the shipment state |
| 13 | Single cell | Length (L) | 60.0±0.5mm | Initial Dimension |
| | | Width (W) | 35.±0.5mm | |
| | | Thickness (T) | 3.3±0.2mm | |

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2. Performance And Test Conditions 电池性能及测试条件

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 $20\pm 5^{\circ}\text{C}$ 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 $15\sim 30^{\circ}\text{C}$ and humidity 25~85%RH.

2.2 Measuring Instrument or Apparatus

3.2.1 Dimension Measuring Instrument

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

3.2.2 Voltmeter

Standard class specified in the national standard or more sensitive class having inner impedance more than $10\text{k}\Omega/\text{V}$

3.2.3 Ammeter

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

3.2.4 Impedance Meter

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

3.3 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°C | 0°C | 23°C | 60°C |
|---------------------------|-------|-----|------|------|
| Discharge Capacity (0.2C) | 50% | 80% | 100% | 95% |

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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°C |
| 2 | Leakage-Proof | No leakage (visual inspection) | After full charge with standard charge, store at 55±3°C, 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. |
| 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°C) | 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°C). | No explosion, No fire The Temperature of the surface of the Cells are lower than 150°C |
| Short Circuit (60°C) | 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°C). | No explosion, No fire The Temperature of the surface of the Cells are lower than 150°C |

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| | | | |
|---------------------|-------------------------|---|--------------------------|
| Impact | Fresh, Fully charged | A 56mm diameter bar is inlaid 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 1.0C for 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 stubborn especially for aluminum tab.

Don't bend tab.

Do not bend tabs unnecessarily.

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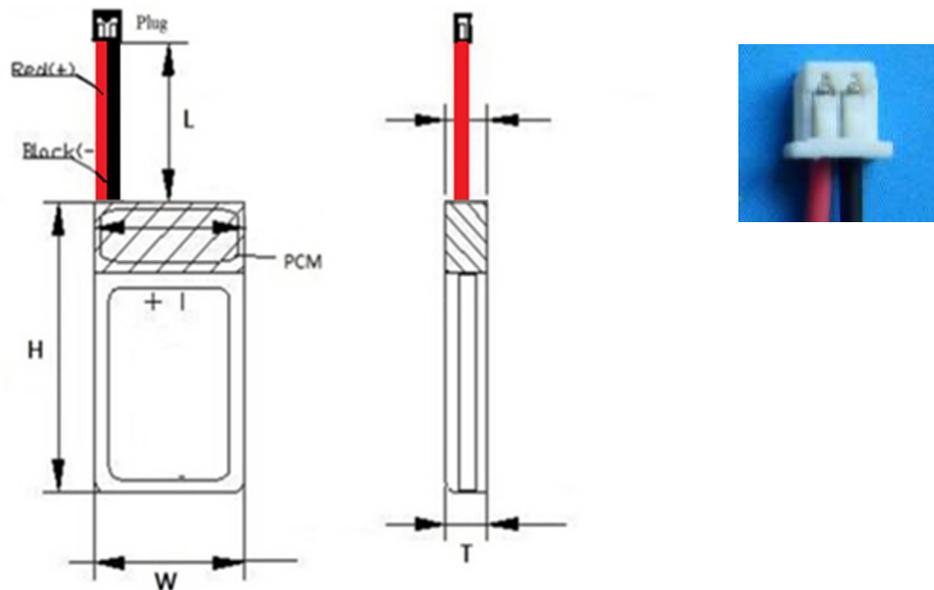
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5. Storing the Batteries

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. Dimension



注意：出线处打黄色固体胶

| | | |
|------------------------------------|------------------------|-------------------------|
| Dimensions 尺寸 (Units 单位: mm) | PCM | 常规保护板 Normal PCM (1.5A) |
| | Length Cable 线长 (L) | 100±5mm (注: 不含插头) |
| | Width 宽(W) | 62.5±1mm |
| | Height 高(H) | 35.5±1mm |
| | Thickness 厚(T) | 3.5±0.5mm |
| | Cable 线号 | UL1007#26AWG |
| | Plug 插头 | 51021-0200 (正向) |

7. Drawing of Label 标签图

PET 透明标签, 2D(Data Matrix)二维码, 内容为: “8680187004644”。日期按出货月份更改。YY 为年, MM 为月, 年在 前, 月在后 (年月), 如: 1607 (2016 年 07 月)。标签格式如下:

T B D

8. Drawing Packing 包装图

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:

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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）:

| | |
|--|-----------------|
| ← PO NO. | Order |
| MODEL NO. | 900.869.503.192 |
| ← QTY | 500PCS |
| ← DATE | YYYY-MM-DD |
| Made in China | |
|  | |
| 8 680187 004644 | |

根据每次订单更改

根据每箱数量更改

根据出货日期更改