

POWER-XTRA

Model : Power-Xtra 9V 300 Mah Rechargeable Battery

Ver:1.0

NO: 900.869.503.002

Ni-MH Battery Spec 镍氢电池规格书

Model :

型号:

PX-H9V300

Customer P/N:

客户型号 :

Nominal Voltage:

标称电压:

9V

Capacity:

容量:

300mAh

Draft 起草	Approved 批准	Customer Confirmation 客户确认
Peter	Chun Qi Zeng	

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1.参数规格 SPECIFICATIONS :

单体电池类型	密封方型镍氢电池组
Type	Sealed Ni-MH Prismatic Battery pack
型号 Size	Ni-MH 9V300
尺寸 Model	6F22
Nominal Voltage	8.4V
标称容量(20°C, 标准充电, 0.2CA 放电至 7.0V)	
Nominal Capacity (20°C, Standard Charge , 0.2CA discharge to 7.0V)	300mAh
Typical Capacity	310mAh
Minimum Capacity	300mAh
Typical Internal Impedance(at 1 kHz)	52.0±1g
Dimensions(including PVC tube)	
宽度 Width (W)	26.3±0.3mm
厚度 Thickness (T)	16.9±0.3mm
高度 Height (H)	48.0±0.5mm
充电方法(20°C)	
Charging Method: (20°C)	
标准充电	0.1CA(30mA)充电 14~16 小时
Standard Charge:	Charge with 0.1CA (30mA) for 14~16 h
快速充电	0.3CA(90mA)充电 4.5 小时
Quick Charge	Charge with 0.3CA(90mA) for 4.5 h
急速充电	0.5CA(150mA)充电 2.2 小时, -Δ=70mV 控制
Fast Charge:	Charge with 0.5CA(150mA) for 2.2 h (Under -ΔV=70mV)
Max Overcharge Current	0.1CA(30mA) 时间不大于 100 小时 0.1CA(30mA)charge(No longer than 100 h)
Trickle Current	9~15mA
Operating Temperature(reference only):	
Storage	-20°C~+35°C
Discharge	-20°C~+60°C
Standard Charge	0°C~+45°C
Fast Charge	+10°C~+45°C

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2. 性能测试 Performance:

Testing Item	Testing Conditions	Standard
标准测试条件 Standard Testing Condition	以下测试如未特别规定, 均应在 20±5°C, 相对湿度 65±20%条件下进行。电压表、电流表的精度±1%。 If not specially described, Temperature 20°C±5°C Relative Humidity: 65±20%. Parapet measuring instruments: ±1% for voltage/current/capacity; ±2°C for temperature; ±0.1% for time.	
(1) 标准充电 Standard Charge	以 0.2CA 放电至 7.0V, 再以 0.1CA 恒流充电 14-16 小时。 0.2CA discharge to 7.0V, then 0.1CA charge for 14-16h (Constant Current)	
(2) 急速充电 Fast Charge	以 0.2CA 放电至 7.0V, 再以 0.5CA 的电流恒流充电 2.2 小时, -ΔV=70mV 控制。 0.2CA discharge to 7.0V, then 0.5CA charge for 2.2 h (Under -ΔV controlled 70mV)	
(3) 开路电压 Open Circuit Voltage	标准充电后, 14 天内进行测试。 test within 14 days after standard charge	≥8.75V
(4) 额定容量 Nominal Capacity	标准充电, 搁置 1-4 小时, 0.2CA 放电至 7.0V, 允许循环三次。 Have 1-4 h of rest after standard charge, then 0.2CA discharge to 7.0V, 3 cycles permitted	≥300 分钟 ≥300 min
(5) 高倍率放电容量 HighRate Discharging Capacity	快速充电, 搁置 1-4 小时, 0.5C 放电至 7.0V, 允许循环三次。 Have 1-4 h of rest after fast charge, Then 0.5CA discharge to 7.0V, 3 cycles permitted	≥108 分钟 ≥108 min
(6) 循环寿命 Cycle Life	按 GB/T 22804.2-2008/IEC61951-2: 2003(7.4.1.1) ※for GB/T 22804.2-2008/IEC61951-2: 2003(7.4.1.1)	≥500 次 ≥500 cycles
(7) 过充特性 Overcharge	按 (4) 额定容量测试后, 0.1CA 充电 48 小时, 检查电池外观, 0.2CA 放电至 7.0V; After (4) testing, The cell shall be charge, in an ambient temperature of 20°C±5°C, at a constant current of 0.1CA for 48 h, After this charging operation, the cell shall be stored, in an ambient temperature of 20°C±5°C, for not less than 1 h and not more than 4 h. The cell shall then be discharge, at 20°C±5°C at a constant current of 0.2CA to a final voltage of 7.0V	无变形、无漏液 ≥270 分钟 ≥270 min
(8) 安全性能(过放电) Over-Discharge Safety device operation	以 0.2CA 强制放电至 0V, 然后将电流增至 1.0CA 放电 60 分钟。 The cell shall undergo a forced discharge in an ambient temperature 20°C±5°C, at a constant current of 0.2CA, to a final voltage of 0V. The current shall then be increased to 1.0CA and the forced discharge continued in the same ambient temperature of 20°C±5°C, for 60min.	电池不爆炸, 但允许有漏液或。 The cell shall not disrupt or burst, Leakage of electrolyte and

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		deformation of the cell are acceptable
(9)温度 Temperature	<p>电池在 20±5°C下按 (2) 快速充电后, 在下面温度下存放 3 小时, 0.5CA 放电至 7.0V。</p> <p>a) 放电温度: 0°C b) 放电温度: 20°C c) 放电温度: 40°C</p> <p>Fast charged as (2) under 20±5°C,stored 3 h under following temperatures, then 0.5CA discharge to 7.0V:</p> <p>a)Discharging Temperature: 0°C b)Discharging Temperature: 20°C c)Discharging Temperature: 40°C</p>	<p>放电时间 ≥100 分钟 ≥108 分钟 ≥100 分钟</p> <p>Discharging Time 100 min 108 min 100 min</p>
(10)荷电保持能力(自放电) Charge(capacity) retention(Self-discharge)	<p>电池在标准充电后, 在 20±5°C, 开路存放 28 天。0.2CA 放电至 7.0V。</p> <p>After standard charge, stored for 28 days under 20±5°C,then 0.2CA discharged to 7.0V</p>	<p>放电时间 ≥180 分钟</p> <p>Discharging Time ≥180 min</p>
(11)Storage	<p>Standard Charged as (1) condition and stored for 6 months under 20°C±5°C,then tested as (4)condition</p>	<p>Discharging Time≥240 min</p>
(12)Mechanical test: bump test、Free falling(drop)	<p>1) 电池自 100cm 高度自由落体至 10mm 硬质木板上, 任意方向自由跌落 3 次 The battery shall be subjected to drop from the height of 1 m to an oak board more than 1 cm thick, the test should be carried for 3 times at each direction of the battery axis.</p> <p>2) 抗震条件: 震幅 4mm, 频率 1000 次/分钟, 任意方向震动 60 分钟 The ability of the cell to withstand mechanical</p> <p>Shock shall be checked by means of bump test carried out in accordance with IEC 60068-2-29.</p> <p>After standard charge, The bump test shall be changed carried out in an ambient temperature of 20±5°C, under the following conditions:</p> <ul style="list-style-type: none"> -peak acceleration(A) 98m/s² (10gn) -corresponding duration to pulse(D) 16ms -corresponding velocity charge 1,00ms -number of bumps 1000±10 <p>When the bump test has been completed, each cell shall be stored for not less then 1 h and mot more then 4 h in an ambient temperature of 20°C±5°C,It shall then be discharge in the same ambient temperature with a constant current of 0.2CA to a final voltage of 7.0V</p>	<p>The battery maintains the electrical specification, the mechanical distort or damage is permitted</p>

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3.外观 Appearance:

3.1 电应无裂痕、断口、灰尘、变色、漏液及变形。

The battery should not have the fissure, the fracture, the dust, the color deterioration, to leak the fluid and the distortion.

4.注意事项 note:

4.1 请勿将电池投入火中及试图拆开;

Do not dispose of cell into fire or be dismantled under any condition.

4.2 请勿与其它种类电池或旧电池混合使用;

Do not mix different cell types and capacities in the same battery assembly.

4.3 请勿超过规格书电流充放电。

Charge and discharge under specified ambient temperature recommended to specification.

4.4 请勿将电池短路, 以免电池永久性损坏;

Short circuit leading to cell venting must be avoided .

4.5 请勿直接焊接电池以免损坏密封圈及安全伐;

Never solder onto cell directly.

4.6 请勿将电池的正、负反接, 以免电池过充电或过放电而损坏;

Cell reversal should be avoided.

5.贮存 Storage

5.1 保证电池维持容量水平, 建议镍氢电池及电池组在-20~25°C、低温度、无腐蚀剂气体条件下贮存

It is strongly recommended to store Ni-MH batteries and cells in the temperature range from -20 to 25°C ,and in low humidity and no corrosive gas environment, to maintain a reasonably

high capacity recovery level.

5.2 镍氢电池避免在较高温度或较高湿度下贮存, 否则将导致电池漏液、生锈, 以及容量降低。

Avoid storage higher (e.g.35°C),lower temperature than -20°C ,or higher humidity which would result in deterioration or damage to the cells and batteries such as follows:

5.3 长期存放将可能导致镍氢电池及电池组容量降低, 并需 1-3 个充电/放电循环后才能达到最高放电容量。

Up to three full cycles of charge /discharge after long-termed storage may need to obtain highest capacity.

7. 保质期: 12 个月。

Quality assurance period:12 months.

※ GB/T 22084.2-2008/IEC61951-2: 2003(7.4.1.1)循环寿命测试方法:

循环数	充电	充电状态下静置	放电
1	0.1CA(30mA)14~16 小时	无	0.25CA(75mA)2 小时 20 分
2-48	0.25CA(75mA)3 小时 10 分钟	无	0.25CA(75mA)2 小时 20 分
4	0.25CA(75mA)3 小时 10 分钟	无	0.25CA(75mA)到 7.0V
50	0.1CA(30mA)14~16 小时	1-4 小时	0.2CA(60mA)到 7.0V

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- 1) 每两个 50 次循环之间间隔时间不大于 14 天，以相同的顺序进行第 50、100、150、200、250、300、350、400、及 450 次循环。
- 2) 测试过程中电池放电电压，下降到 7.0V 时,停止放电。
- 3) 当第 50 次循环的放电持续时间达不到 3 小时（额定容量的 60%）时，用 0.1CA(30mA)充电 16 小时，0.2CA(60mA)放电至 7.0V，然后循环 3 次合格后再进行下一个 50 次循环。

※for GB/T 22084.2-2008/IEC61951-2: 2003(7.4.1.1) Endurance in cycles

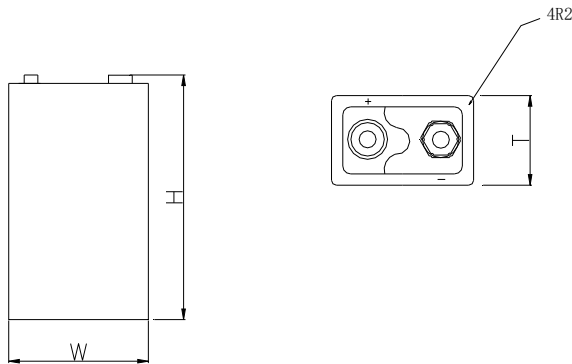
Cycle number	Charge	Stand in charged condition	Discharge
1	0.1CA (30mA) for 14-16h	none	0.25CA (75mA) for 2h 20 min
2-48	0.25CA (75mA) for 3h 10 min	none	0.25CA (75mA) for 2h 20 min
49	0.25CA (75mA) for 3h 10 min	none	0.25CA (75mA) to 7.0 V
50	0.1CA (30mA) for 14-16h	1 h to 4 h	0.2CA (60mA) to 7.0 V

1 The interval time between every 50 cycles is less than 14 days, with the same way to do the 50th, 100th, 150th, 200th,250th, 300th, 350th, 400th and 450th cycles

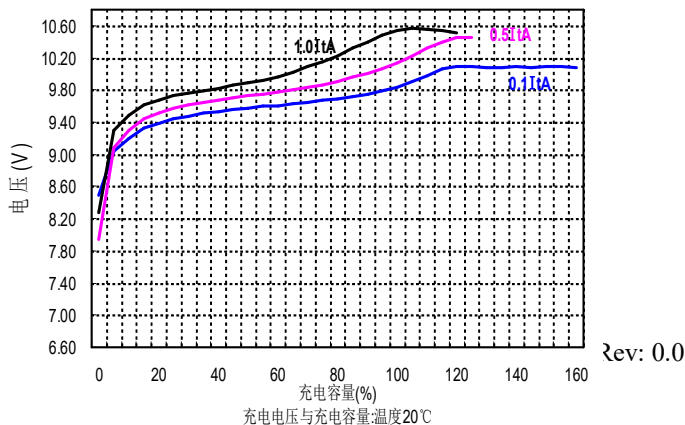
2. Stop discharging once the voltage is down to 7.0V on the testing procedure of discharge voltage.

3.If the discharge time of the 50 cycles can not reach 3 h (60% of the nominal capacity), charge with current 0.1CA(30mA) for 14-16 h, then discharge with 0.2CA(60mA) to 7.0V, if the first three cycles pass, then continue the next 50 cycles.

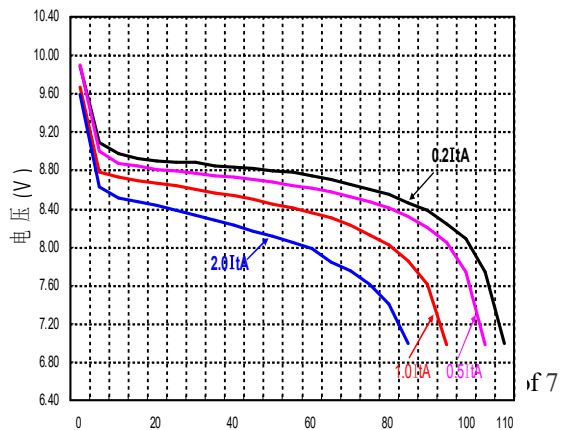
电池组外形图 Battery pack appearance graph:



Ni-MH9V(6F22) 电池不同倍率充电曲线



Ni-MH9V(6F22)不同倍率放电曲线



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Sample Picture 样品照:

