



Dongguan Large Electronics Co.,Ltd

东莞市钜大电子有限公司

NI-MH AAA550mAh 12V

NI-MH Battery Technology Specification

镍氢电池产品技术规格书

Customer confirmation 客户确认	Corporate name 公司名称	
	Checked 签名	
	Approved 批准	
	Corporate seal 公司印章	

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Document No.文件编号: **ZH.S.1422** Edit 版别: A

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LARGE BATTERY	Document 名称	AAA550 12V Technical Specification AAA550 12V 产品技术规格	Edition 版本	A
			Valid Date 生效日期	2011-10-18
钜大电池	Number 编号	ZH.S.1422	Drafted by 编制	Tuo Xian De 陀先德
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1. 范围 SCOPE

此种规格适用于LARGE各种镍氢圆柱形电池和电池组。

This specification governs the performance of the following LARGE Nickel-Metal Hydride Cylindrical Cell and its stack-up batteries.

型号: NI-MH AAA550mAh 12V

LARGE Model: NI-MH AAA550mAh 12V

规格书显示了电池的标称电压。电池组的标称电压等于单体电池的电压乘以单体电池的数目。

The data involving nominal voltage and the approximate weight of stake-up batteries shall be equal to the value of the unit cell multiplied by the number of unit cells in the battery.

单体电池的标称电压= 1.2V

Nominal voltage of unit cell = 1.2V

2. 规格 RATINGS

类型 Description	单位 Unit	说明 Specification	环境 Conditions
标称电压 Nominal Voltage	V	12	
标称容量 Nominal Capacity	mAh	550	标准充电/放电 Standard Charge/discharge
最小容量 Minimum Capacity	mAh	500	标准充电/放电 Standard Charge/discharge
标准充电 Standard Charge	mA	55 (0.1C)	Ta=0~45°C
	hour	14-16	
快速充电 Fast Charge	mA	275 (0.5C)	-ΔV=5mV/单体电池 -ΔV=5mV/cell 终止时间=110%充入容量 (仅供参考) Timercutoff=110%input capacity 断电温度=55°C Temp. cutoff=55°C Ta=10~45°C
	hour	2.2approx	
涓流充电 Trickle Charge	mA	27.5 (0.05C) ~ 55 (0.1C)	Ta=0~45 °C
终止电压 Discharge Cut-off Voltage	V	10.0	
最大放电电流 Maximum Discharging Current	mA	550 (0.5C)	Ta=20~70°C
贮存温度 Storage Temperature	°C	-20~35°C	

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3.性能 PERFORMANCE

测试电池的状态应为用户收到后不超过一个月的产品

Unless otherwise stated, tests should be done within one month of delivery under the following

conditions:

适用温度 Ambient Temperature: $T_a=20\pm 5^{\circ}\text{C}$

相对湿度 Relative Humidity: $65\pm 20\%$

标准充放电 Standard Charge/ Discharge Condition:

充电/Charge: $55\text{mA} (0.1\text{C}) \times 16\text{hrs}$

放电/Discharge: $110\text{mA} (0.2\text{C})$ to $10.0\text{V}/\text{pack}$

测试 Test	单位 Unit	说明 Specification	环境 Conditions	备注 Remarks
容量 Capacity	mAh	≥ 500	标准充电/放电 Standard Charge/Discharge	允许达到三个循环 Up to 3 cycles are allowed
开路电压 Open Circuit Voltage (OCV)	V	≥ 12.5	充电后一小时内 Within 1hr after standard charge	
内阻 Internal Impedance (Ri)	m Ω	≤ 600	达到完全充电状态 Upon fully charge (1kHz) (1kHz)	
高倍率放电 High Rate Discharge (0.5C)	分 /min	≥ 108	标准充电后一小时内进行放 电 Standard Charge, 1hr rest before discharge	
过充 Overcharge	N/A	不漏不爆炸 No leakage nor explosion	55mA (0.1C) 充电48小时 55mA (0.1C) charge 48 hours	
容量保留 Charge Retention	mAh	$\geq 330 (60\%)$	0.1C 充电 16 小时后在 $20\pm 2^{\circ}\text{C}$ 贮存 28 天再用 0.2C 放电到 10.0V/组 Charge: 0.1C for 16 hours Storage: 28days at $20\pm 2^{\circ}\text{C}$ Discharge: 0.2C to 10.0V/pack	
IEC 循环测试 IEC Cycles Test	周期 Cycle	≥ 500	IEC61951-2 (2003)	

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测试 Test	单位 Unit	说明 Specification	环境 Conditions
泄漏 Leakage	N/A	不漏液, 不变形 No leakage nor deformation.	以 (0.1C) 完全充满, 搁置 14 天 Full charged at (0.1C) stand for 14 days
短路 Short Circuit	N/A	可能发生漏液、变形, 但是不会发生爆炸。 Leakage & deformation may occur, but no explosion is allowed.	在标准充电后, 短路 1 个小时 (铜芯 = 0.75mm ² × 20 毫米) After standard charge, short circuit for 1 hour (leading wire = 0.75mm ² × 20mm)
震动 Vibration Resistance	N/A	每只电池电压变化应在 0.02V 之内, 内阻应该在 5 milli-ohm 之内 Change of Voltage $\Delta V < 0.02V$, Change of internal impedance $\Delta Ri < 5 \text{ m}\Omega$.	以 0.1C 给电池组充电 16 小时, 然后再放置 24 小时。检测电池受振前后的状态。 振幅为 1.5mm 3000CPM 测试时间应不少于 60 分钟 Charge the battery 0.1C 16hrs, then leave for 24hrs. check battery before / after vibration. Amplitude: 1.5mm Vibration: 3000CPM Any direction for 60mins.
跌落 Impact Resistance	N/A	每只电池电压变化应在 0.02V 之内, 内阻应该在 5 milli-ohm 之内 Change of voltage $\Delta V < 0.02V$, Change of internal Impedance $\Delta Ri < 5 \text{ m}\Omega$.	以 0.1C 给电池组充电 16 小时, 再放置 24 小时。检测电池跌落前后的状态 高度为 50cm, 木板厚度为 30mm 测试次数应不少于 3 次, 测试方向分为 X, Y, Z 三个方向。 Charge the battery 0.1C 16hrs, then leave for 24hrs. check battery before / after dropped, Height: 50cm, Wooden board (thickness 30mm) Direction not specified 3 times.

4. 结构, 尺寸及标记 CONFIGURATION, DIMENSIONS AND MARKINGS

请查阅附上图表。

Please refer to the attached drawing.

5. 外观 EXTERNAL APPEARANCE

电池/电池组在自由放置下, 无破裂、划痕、生锈、变色、漏液及变形等现象。

The cell/ battery shall be free from cracks, scars, breakage, rust, Discoloration, leakage nor deformation.

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6、警告 CAUTION

1. 不允许反极充电。Reverse charging is not acceptable
2. 电池在充电中不得负荷电流。Do not burthen current when charging.
3. 充放电不得超出说明书规定的范围。Do not charge/discharge with more than the specified current.
4. 切勿使电池短路，否则可能使其永久性损坏。Do not short circuit the cell/ battery. Permanent damage to the cell/ battery may result.
5. 请勿将电池投入火中或拆解。Do not incinerate or mutilate the cell/ battery.
6. 使用不当会导致电池的使用寿命的下降，如：极端高温、深循环、过充或过放。
Do not subject batteries to adverse conditions like: extreme temperature, deep cycling and excessive Overcharge/overdischarge. The life expectancy may be reduced.
7. 电池不使用时应放在干燥通风的地方。大量贮存或装运前应对电池进行放电。
Store the cell/ battery in a cool dry place. Always discharge the cell/battery before bulk storage or shipment.
8. 若要持续贮存，为了维护电池性能，在半年内要对电池进行充放电一次，以防其失去功效。Cycle (charge and discharge) the battery every 6-9months to maintain cell/battery performance when being stored for an extended period of time.
9. 远离儿童，如不慎误吞请立即送往医院。
Keep away from children. If swallowed, contact a physician at once.
10. 电池在塑料盒内要通风，因为内部或许有释放氧气和氢气的危险，导致因火源而引起爆炸。

Avoid airtight battery compartments. Ventilation should be provided in the plastic case of batteries, otherwise oxygen and hydrogen gas generated inside can cause explosion when exposed to fire sources such as motors or switches.

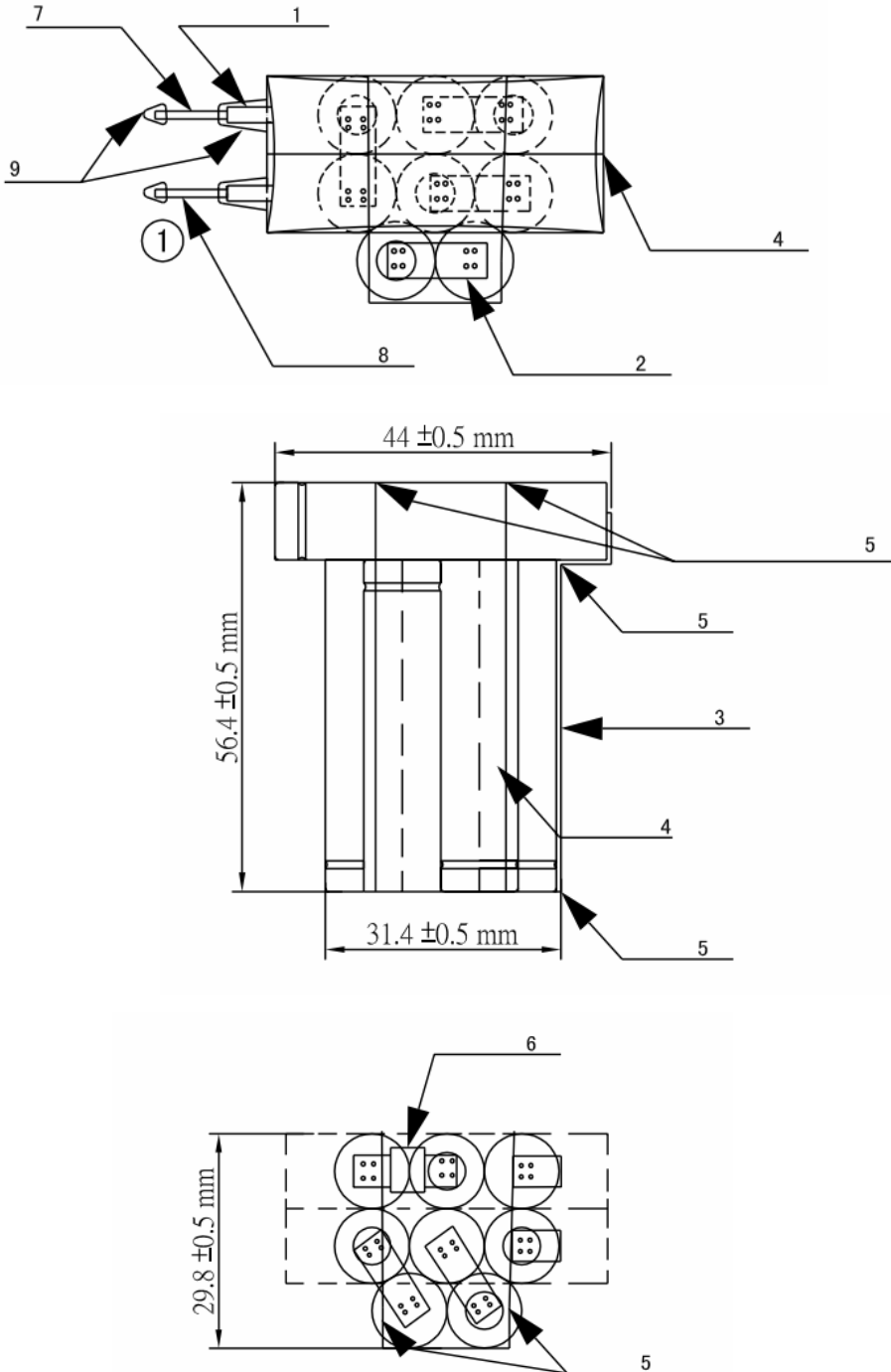
备注/Remark:

IEC61951-2周期寿命测试IEC 61951-2(2003) Cycle Life Test:

周期Cycle	充电Charge	搁置Rest	放电Discharge
1	0.1C×16hrs	0	0.25C×2hrs20mins
2-48	0.25C×3hrs10mins	0	0.25C×2hrs20mins
49	0.25C×3hrs10mins	0	0.25Cto1.0/cell
50	0.1C×16hrs)	1-4hr(s)	0.2Cto1.0/cell
循环1至50次可重复使用，直到任意放电50周期使用时间少于三小时则停止。Cycle 1 to 50 shall be repeated until the discharge duration on any 50 th cycle becomes less than 3 hours.			

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产品尺寸示意图 Dimensions of the battery:



9	热缩管		4	
8	连接线	24#32mm	1	
7	连接线	24#32mm	1	
6	PTC	JK-D170	1	E217453
5	电工胶布	26*17		
4	内套管	17*46		2#绿
3	连接片加热缩管	65*3*0.13	2	
2	连接片	3*15*0.1	6	
		4*63*0.1	2	
1	引出片	3*15*0.12	2	带热缩管
NO.	名称	型号	数量	备注

.....END 结束.....