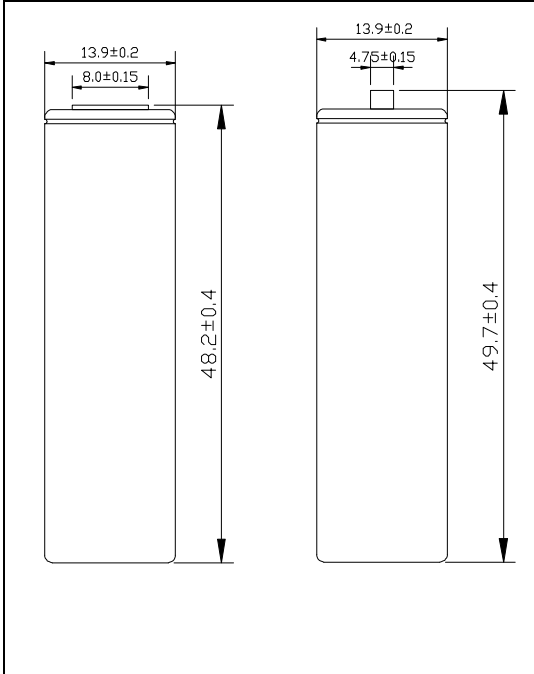


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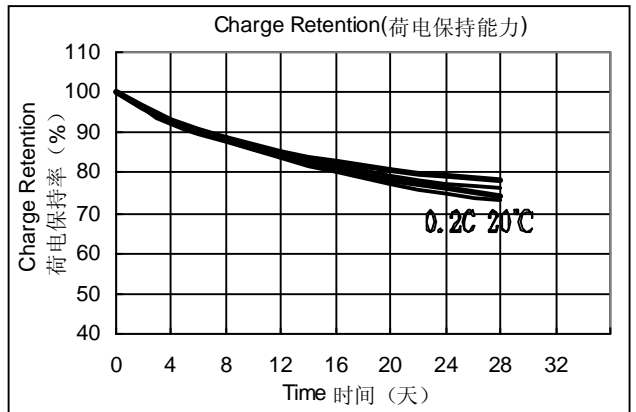
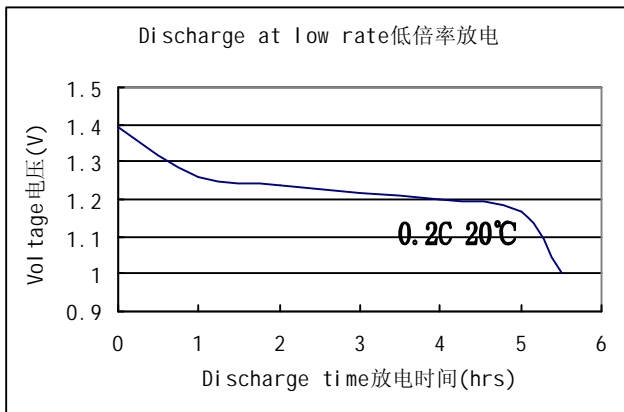
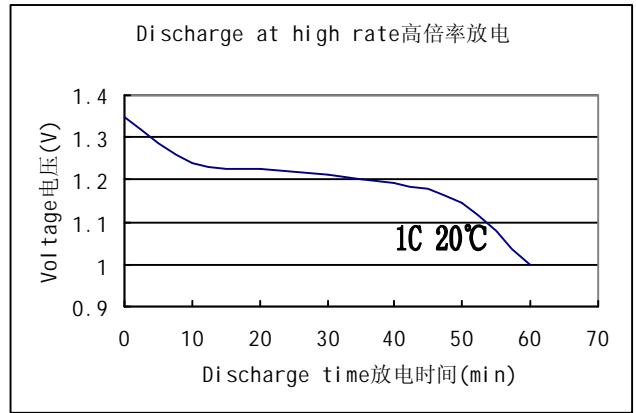
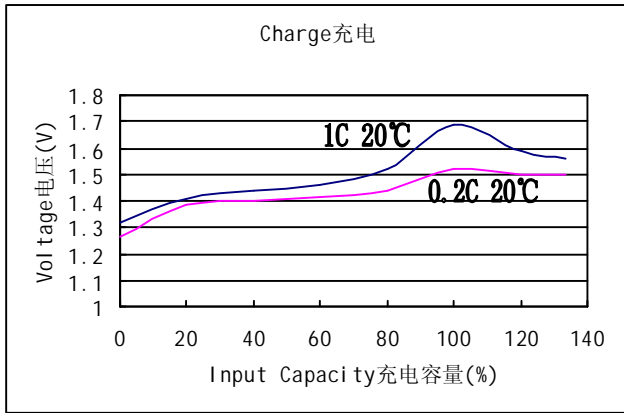
MODEL No: AA600

Description: 600mAh AA SIZE Ni-Cd



Specification

Nominal Capacity 额定容量		600 mAh	
Nominal Voltage 额定电压		1.2 V	
Charge current 充电电流	Standard 标准	60mA	
	Quick 快充	180mA	
	Fast 急充	600mA	
Charge time 充电时间	Standard 标准	14~16 Hrs	
	Quick 快充	4.0 Hrs	
	Fast 急充	1.3Hrs	
Ambient Temperature 使用温度	Charge 充电	Standard 标准	0°C~35°C
		Quick 快充	10°C~35°C
		Fast 急充	10°C~35°C
	Discharge 放电		-30°C~60°C
Storage 储存		-30°C~35°C	
Internal Impedance(mΩ) (Upon fully charge) 充满电后内阻		Max ≤30	
Weight 重量		16.5g	



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文件名: Ni—Cd AA600 电池单体说明书

2. 电池性能

除非另有说明, 测试须在发货后一个月内在下述条件下进行:

环境温度: T: $20 \pm 5^{\circ}\text{C}$

相对湿度: $65 \pm 20\%$

测试项目	测试条件				要求
(1) 标准充电	先以 120mA (0.2C) 放电至 1.0V/只,再以 60mA(0.1C)充电 16 小时				
(2) 开路电压	按(1)充电后搁置 1 小时内测量				$\geq 1.25\text{V}$
(3) 容量 (0.2C)	按(1)充电后搁置 15 分钟以 120mA(0.2C) 放电至 1.0V,允许最多三次充放.				$\geq 600\text{mAh}$
(4) 1C 放电时间	按(1)充电后搁置 15 分钟,以 600mA(1C)放电至 1.0V/只,允许最多三次充放.				$\geq 54\text{minutes}$
(5) 急充 (1C)	600mA(1C)充电 1.3 小时,充电终止条件- $\Delta V=5\sim 10\text{mv}$ /只或电池升温至 50°C				
(6) 涓流充电电流	19.8mA(0.033C)~30mA (0.05C)				
(7) 荷电保持能力	按(1)充电后搁置 28 天,以 120mA(0.2C)放电至 1.0V				$\geq 70\%$
(8) IEC 循环寿命 (IEC61951-1 (2003) 7.4.1.1)	次数	充电	搁置	放电	≥ 500
	1	0.1C \times 16h	无	0.25C \times 140mi n	
	2-49	0.25C \times 190mi n	无	0.25C \times 140mi n	
	49	0.25C \times 190mi n	无	0.25C to 1.0V	
	50	0.1C \times 16h	1-4h	0.25C to 1.0V	
循环至任一第 50 次放电时间不足 3 小时为止					
(9) 加速循环寿命	充电:600 mA(1C)充电 1.3 小时,充电终止条件- $\Delta V=5\sim 10\text{mV}$ /只或电池升温至 50°C , 放电:600 mA(1C)放电至 1.0V.放电终止条件:容量小于 70%。				≥ 400
(10) 安全阀	以 120 mA(0.2C)放电至 0V 后,再以 600 mA(1C)强制放电 60 分钟				漏液、无爆炸或开裂
(11) 泄漏	300mA (0.5C)充电 2.4 小时,存放 14 天后检查				无漏液或变形
(12) 抗振动	将电池用 0.1C 电流充 16 小时,检查振动前后电池状况,震动幅度 1.5mm,振动 3000 次,任意方向振动 60 分钟				电压变化 $< 0.02\text{V}$ /只 电阻变化 $< 5\text{m}\Omega$ /只
(13) 抗撞击	将电池用 0.1C 电流充 16 小时开路 24 小时,检查掉落前后电池状况,落体高度 50cm,30mm 厚的木板,3 次				电压变化 $< 0.02\text{V}$ /只 电阻变化 $< 5\text{m}\Omega$ /只

力能达/LND Battery Co., LTD.

文件名: Ni—Cd AA600 电池单体说明书

3. 外观

无裂缝、疤痕、破裂、锈蚀、脏污、漏液、变形。

4. 使用注意事项

- (1) 勿将电池反极充电。
- (2) 初次使用前先充电。
- (3) 避免以高于指定的电流充放电。
- (4) 防止电池短路，以免造成可能的损坏。
- (5) 勿拆解或焚烧电池。
- (6) 勿在电池上直接焊接。
- (7) 如极端高温，深度循环、过量的过充、过放电，电池的使用寿命可能会下降。
- (8) 电池应存放干爽阴凉处，组合电池或包装前应将电池放电。

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Document Title: Product Specification of Ni—Cd AA600

2. PERFORMANCE

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

Ambient Temperature: T: $20 \pm 5^{\circ}\text{C}$

Relative Humidity: $65 \pm 20\%$

Test Item	Test Conditions				Requirements
(1) Standard Charge	Charge is conducted continuously for 16 hours at the constant current of 60mA(0.1C) after pre-discharge at the constant current of 120mA (0.2C) up to a cut-off voltage of 1.0V/cell				
(2) Open-circuit Voltage	Voltage between terminals of the charged battery specified in item (1) is measured after rest for 1 hour				$\geq 1.25\text{V}$
(3) Capacity (0.2C)	Capacity of the charged battery specified in item (1) is measured at 120mA (0.2C) up to a cut-off voltage of 1.0V after rest for 15 minutes. If the discharge time doesn't reach the specified value, the test may be carried out further twice, up to three times in total.				$\geq 600\text{mAh}$
(4) High rate discharge(1C)	Discharge time of the charged battery specified in item (1) is measured at 600mA (1C) up to a cut-off voltage of 1.0V after rest for 15 minutes. If the discharge time doesn't reach the specified value, the test may be carried out further twice, up to three times in total.				$\geq 54\text{minutes}$
(5) Fast charge (1C)	Charge: 600mA(1C) \times 1.3 hours (charging Cut off = $\Delta V=5\sim 10\text{mV/cell}$ or Temp.Cut off= 50°C)				
(6) Trickle charge current	19.8mA(0.033C) \sim 30 mA (0.05C)				
(7) Charge retention	Capacity of the charged battery specified in item (1) is measured at 120mA(0.2C) up to a cut-off voltage of 1.0V after rest for 28 days at 20°C .				$\geq 70\%$
(8) IEC Cycle life (IEC61951-1 (2003) 7.4.1.1)	Cycle No	Charge	Rest	Discharge	≥ 500
	1	0.1C \times 16h	None	0.25C \times 140min	
	2-48	0.25C \times 190min	None	0.25C \times 140min	
	49	0.25C \times 190min	None	0.25C to 1.0v	
	50	0.1C \times 16h	1-4h	0.2C to 1.0v	
Cycles 1 to so shall be repeated until the discharge duration on any 50 th cycle becomes less than 3h					
(9) Accelerated cycle life	Charge: 600mA(1C) \times 1.3 hours (charging Cut off = $\Delta V=5\sim 10\text{mV/cell}$ or Temp.Cut off= 50°C) ;Discharge: 600mA(1C) to 1.0V/cell,end-of:70% nominal capacity .				≥ 400

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2. PERFORMANCE

Unless otherwise stated, test should be done within one month of delivery under the following conditions:

Ambient Temperature: T: $20 \pm 5^{\circ}\text{C}$

Relative Humidity: $65 \pm 20\%$

Test Item	Test Conditions	Requirements
(10) Safety valve operation	Forced discharge is conducted for 60 minutes at a constant current of 600mA(1C) after pre-discharge at a constant current of 120mA(0.2C) up to 0V	Leakage, No explode or disrupt
(11) Leakage	Fully charged at 300mA(0.5C) for 2.4hour stand for 14 days	No leakage nor deformation
(12) Vibration Resistance	Charge the battery 0.1C 16hrs, then leave for 24hrs, check Battery before/after vibration, Amplitude 1.5mm Vibration 3000 CPM Any direction for 60mins.	Change of voltage should be under 0.02V/cell, Change of impedance should be under 5 milli-ohm/cell
(13) Impact Resistance	Charge the battery 0.1C 16hrs Then leave for 24hrs, check bat-before/after dropped, Height 50cm Wooden board(thickness 30mm) Direction not specified, 3 times.	Change of voltage should be under 0.02V/cell Change of impedance should be under 5 milli-ohm/cell

3. EXTERNAL APPEARANCE

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

4. CAUTION

- (1) Reverse charging is not acceptable.
- (2) Charge before use. The cells/batteries are delivered in an uncharged state.
- (3) Do not charge/discharge with more than our specified current.
- (4) Do not short circuit the cell/battery Permanent damage to the cell/battery may result.
- (5) Do not incinerate or mutilate the cell/battery.
- (6) Do not solder directly to the cell/battery.
- (7) the life expectancy may be reduced if the cell/battery is subjected adverse conditions like: extreme temperature, deep cycling, excessive overcharge/ over-discharge.
- (8) store the cell/battery uncharged in a cool dry place. Always discharge batteries before bulk storage or shipment.