



**E&J TECHNOLOGY GROUP CO., LTD**

# **Ni-MH Low Self-Discharge Battery Specification**

**Model Number:EJ50AA1000S**

**Doc No: SPE-NH-0131**

**Version: 01**

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<b>Prepared</b>	<b>Checked</b>	<b>Approved</b>
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## 1、Scope

This specification is suitable for the performance of the E&J Ni-MH Low Self rechargeable battery.

## 2. Model

EJ50AA1000S

## 3.Appearance

There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage.

## 4.Nominal specification

Desription			Specification
Model			EJ50AA1000S
Size			AA
Dimensions	Diameter(mm)		14.5+0/-0.7
	Height(mm)		50.5+0/-1.5
	Weight(g)		Approx. 17g
Nominal Voltage(V)			1.2
Nominal capacity(mAh)			1000
Internal Impedance(mΩ)			≤45
Discharge Cut-off Voltage			1.0V
Ambient temperature	Charge	standard	0℃ to 40℃
		fast	10℃ to 40℃
	Discharge		-10℃ to 50℃
	Storage	< 1 year	-10℃ to 30℃
		<3 months	-10℃ to 40℃
		The relative humidity should keep with in 65±20%	

## 5. Characteristics

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

- ◆ Ambient temperature 20±5℃
- ◆ Relative humidity 65±20%
- ◆ Atmospheric pressure 960±100mbar

Accuracy of voltmeters and amperometers to be used in testing shall be equal to or better than the grade 0.5.

Test item		Condition		Specification
1. Charge	Standard	Charge at 0.1C for 16 hours		Ta=0~40℃
	Fast	Charge at 0.5C to $-\Delta V=0\sim 5\text{mV}$		Ta=10~40℃
	Trickle	(0.03C)-(0.05C)		Ta=0~40℃
2. Discharge		At 0.2C to 1.0V		
3. Discharge cut-off voltage				1.0V
4.Capacity (mAh)	Minimum	Standard charge/discharge		950
	Typical	Standard charge/discharge		1000
5. Internal resistance		After fully charge,rest 1 hour, measured at 1000Hz		$\leq 45\text{m}\Omega$
6.Hight Rate Dicharge(0.5C)		Standard charge 1hour rest Before Discharge by 0.5C to 1.0V		$\geq 112\text{minutes}$
7. Self-Discharge		The charged battery is stored for 12months at 20℃. And the discharge time is measured at standard discharge		Capacity retention $\geq 75\%$
8. Overcharge		0.1C charge 28 days		No leakage nor deformation
9. High temperature test		Store at 40℃、50℃、60℃ for 2 hours then charge/discharge		No leakage
10. Low temperature test		Store at 0℃ for 2 hours then charge/discharge		No leakage
11. Short circuit test		Short circuit after fully charge		No explode
12. Drop test		Free fall on the concerte from 1 meters after fully charged		No leakage No short-circuit
13.Leakage test		standard charge stand for 14days		No leakage nor deformation
14.Cycle life	Charge	Rest	Discharge	Capacity retention $\geq 60\%$ after 500cycles
1	0.1C for 16h		0.25C for 2h20min	
2~48	0.25C for 3h10min		0.25C for 2h20min	
49	0.25C for 3h10min		0.2C to 1.0V	
50	0.1C for 16h	1-4h	0.2C to 1.0V	

## 6. Cautions in use

To ensure proper use of the battery please read the manual carefully before using it.

- Handling

Do not expose to, dispose of the battery in fire.

Do not put the battery in a charger or equipment with wrong terminals connected.

Avoid shorting the battery.

Avoid excessive physical shock or vibration.

Do not disassemble or deform the battery.

Do not immerse in water.

Do not use the battery mixed with other different make, type, or model batteries.

Keep out of the reach of children

- Storage

Cycle(charge and discharge)the battery every 6-9month to maintain cell/battery performance ,When being stored for an extended period of time

Store the battery in a cool, dry and well-ventilated area.

- Disposal

Regulations vary for different countries.

Dispose of in accordance with local regulations.

## 7. Note

Any other items which are not covered in this specification shall be agreed by both parties.

## Appendix: Battery performance curve

