



**A. Basic**

Type		Sealed Rechargeable Ni-MH
Model		CYH-28AAA300HT
Size		2/3AAA
Nominal Voltage (V)		1.2
Nominal Capacity (mAh)		300
Dimension	Diameter (mm)	10.5 <sup>+0</sup> <sub>-0.7</sub>
	Height (mm)	27.8 <sup>±0.5</sup>
Standard Charging	Current (mA)	30
	Time (h)	16
Operation Temperature(°C)	Standard Charging	0~60
	Discharging	-20~65
	Storage	-20~35(RH≤85%)
Permanent Charging Current (mA)		9~15
Maximum Discharging Current (mA)(continuous)		900
Charge Impedance (mΩ)		≤60 (1000Hz)
Discharge Cut-off Voltage (V)		1.00
Charge Retention (20°C)		≥60%
Weight Approx. (g)		7

**B. Test Report**

Tests are carried out within one month of delivery under the following condition:

**1. Ambient Conditions:**

Room Temperature 20±5 °C  
Relative Humidity 65%±20%

**2. Capacity Testing**

**2.1 Standard Charging**

0.2C discharge to 1.00V/cell  
0.1C charging for 16 hours  
Rest for 1 hours  
00.2C discharge to 1.00V/cell.

The capacity is no less than 290mAh, the typical capacity is no less than 300mAh, Up to 3 cycles are allowed, one of them to meet the requirements for namely qualified.



**3.1.1 Ambient Conditions:**

Relative Temperature  $60 \pm 2$  °C

Relative Humidity  $65\% \pm 20\%$

**3.1.2 High Temperature Charging/ Discharge**

0.2C discharge to 1.00V/cell

0.05C charging for 48 hours

Rest for 1 hours

0.2C discharge to 1.00V/cell

The capacity is no less than 145mAh, the typical capacity is no less than 150mAh,

Up to 3 cycles are allowed, one of them to meet the requirements for namely qualified.

**4. Open Circuit Voltage (OCV)**

After the battery is fully charged with 0.1C for 16h, within 1 hour, the OCV is greater than 1.25V/cell

**5. Internal Impedance**

After the battery is fully charged with 0.1C for 16h, within 1 hour, the impedance is not greater than 60 mΩ, as tested by 1000Hz AC source.

**6. Charge Retention**

The fully charged (with 0.1C for 16h) battery is held under temperature of  $20 \pm 2$ °C for 28 days, the discharged capacity is no less than 180mAh .

**7. Overcharging**

Under temperature of  $20 \pm 5$ °C, After 0.2C to 1.00V, the battery is charged at 0.1C rate for 48 hours. No de-deformation of the battery can be found. Standard capacity can be attained under normal discharging operation.

## 8. Cycle Life

### 8.1 Normal Cycling Test(I.E.C):

Cycle No.	Charge	Rest	Discharge
1	0.1C × 16hrs	None	0.25C × 2hrs 20mins
2~48	0.25C × 3hrs 10mins	None	0.25C × 2hrs 20mins
49	0.25C × 3hrs 10mins	None	0.25C to 1.00V/cell
50	0.1C × 16hrs	1~4hrs	0.2C to 1.00V/cell
Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3hrs			

After 500 cycles of charging/discharging, capacity 180mAh (60%) can be maintained under the cycling test.

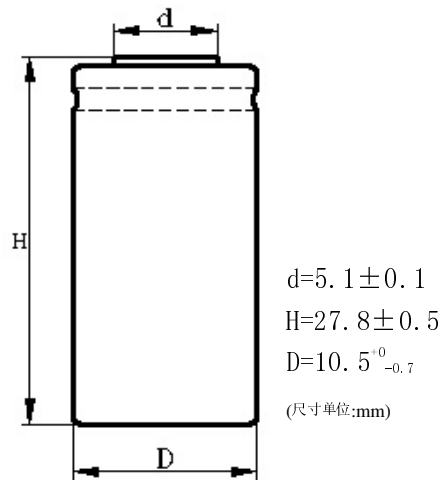


Figure of CYH-28AAA300HT cell (with tube)

**Note: All the above values subject to change without prior notice.**



## 8. Cautions

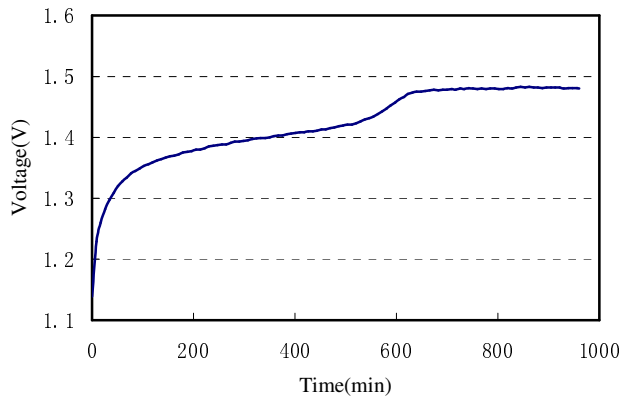
1. Reverse charging is not acceptable。
2. Charge before use, use the correct charger for Ni-MH batteries。
3. Do not charge / discharge with more than the specified current。
4. Do not short circuit the cell / battery。
5. Do not incinerate or mutilate the cell/battery。
6. Do not solder directly to the cell / battery。
7. The life expectancy may be reduced if the cell / battery is subjected to adverse conditions,like extreme temperature, deep cycling, excessive overcharge /over-discharge。
8. Store the cell / battery in a cool dry place。
9. When find battery power down during use,please switch off the device to avoid over discharge。
10. When not using a battery, disconnect it from the device。
11. well-ventilated place out of direct sunlight。
12. During long term storage, battery should be charged and discharged once every 3~6month。
13. When the battery is hot, please do not touch it and handle it, until it has cooled down。
14. Do not mix batteries with other battery brands or batteries of a different chemistry such as alkaline and zinc carbon batteries。
15. Do not mix new batteries in use with semi-used batteries, battery may be over-discharged。
16. Never disassemble a battery,as the electrolyte inside is strong alkaline and can damage skin and clothes and eyes.
17. Keep away from children. If swallowed, contact a physician at once。

### C. Abuse Test

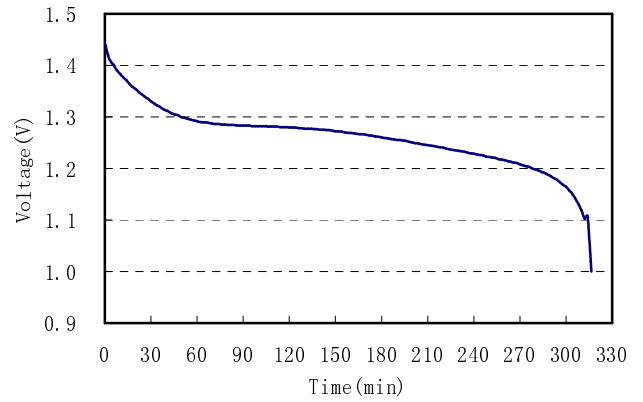
Items	Test conditions	Test results
Short circuit test	After 0.2C to 1.00V, cell is fully charged with 0.1C for 16hours(or with 0.5C for 2.2hours), then shorted for 1hour or longer with a 30~50mΩ load or less	No fire No explosion
Overcharge test	Cell is discharged with 0.2C to 1.00V, then 0.1C for 48 hours Cell is discharged with 0.2C to 1.00V, then 0.5C for 5 hours	No explosion Leakage may occur
Over discharge test	Cell is discharged with 0.2C to 0.00V, then with 1C forced discharged for 1hours	No explosion
Drop test	0After 0.2C to 1.00V, cell is fully charged with 0.1C for 16hours, then cell is dropped 3 times from a 1.9m height onto solid wood (3mm thick) with random orientation	No abruption No leakage No explosion
Vibration test	Cell is vibrated continuously lengthwise for 60minutes Amplitude: 4mm Frequency: 1000times/minutes	No physical change No leakage Cell electrical performances unchanged
High temperature test	After 0.2C to 1.00V, cell is fully charged with 0.1C for 16hours(or with 0.5C for 2.2hours), cell is placed to the baking oven which its set-up temperature is 150±5℃	Cell don't explosion before 15 minutes
Penetration test (Hole drilling)	0After 0.2C to 1.00V, cell is fully charged with 0.1C for 16hours or 0.5C for 2.2hours, cell is drilled diameter wise with a 3mm Φ drill at a depth of less than 1mm	No explosion
Water immersion test	a. Cell is immersed in water for one month b. Cell is immersed in salt water with a 5% concentration for one month	No explosion

**Attention: The object of abuse test is unit cell.**

**Warning:** please consult **Cyber-Power** before performing those destructive tests.



(Fig2 0.1C Charging curve)



(Fig3 0.2C discharging curve)

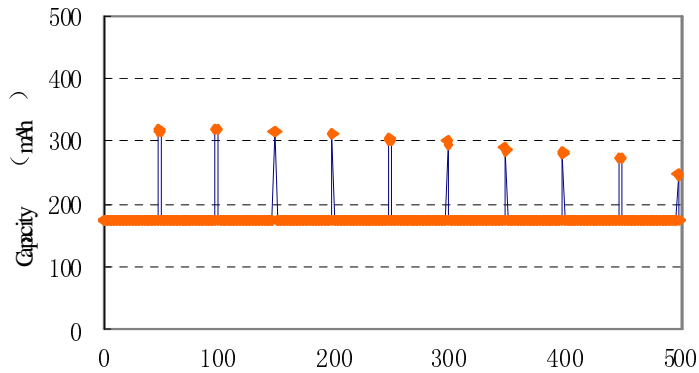


Fig4. Cycle life curve (Normal cycling test)