

Product Specification

Product Model: Nickel-Metal Hydride Battery

Product Type: AAA950

Draw up: Technical Department

Date: 2017-8-18

1、SCOPE

This specification governs the performance of the following Nickel-Metal Hydride cylindrical cell and its stack-up battery.

Model: AAA950

Cell Size: AAAcusp(10.2±0.1×44.0±0.5)mm

2、DATA OF STACK UP BATTERIES

All data involve voltage and weight of stack-up batteries are equal to the value of unit cell multiplied by the number of unit cell which consisted in the stack-up batteries

Example : Stack-up batteries consisting three unit cells

Nominal voltage of unit cell=1.2V

Nominal voltage of stack-up batteries =1.2V×3=3.6V

3、RATINGS

| Description | Unit | Specification | Condition |
|---------------------------|--------|----------------------------|---|
| Nominal Voltage | V/cell | 1.2 | Unit cell or stack-up batteries |
| Minimum Capacity | mAh | 900 | Standard Charge/Discharge |
| Nominal Capacity | mAh | 950 | Standard Charge/Discharge |
| Standard Charge | mA | 95 (0.1C) | T ₁ =20±5℃(See Note 1) |
| | hour | 16 | |
| Fast Charge | mA | 475 (0.5C) | - ΔV=0~5mV/cell , Timer Cutoff=105%nominal capacity , Temp.Cutoff=55℃, dT/dt=0.8℃/min, T ₁ =20±5℃ |
| | hour | 2.1 approx (See Note 2) | |
| Trickle Charge | mA | (0.03C)~(0.05C) | T ₁ =20±5℃ |
| Standard discharge | mA | 190 (0.2C) | T ₁ = 20±5℃ Humidity: Max.85% |
| Discharge Cut-off Voltage | V/cell | 1.0 | |
| Storage Temperature | ℃ | -20~25 | Within 1 year* |
| | | -20~35 | Within 6 months |
| | | -20~45 | Within 1 month |
| | | -20~55 | Within 1 week |
| Typical Weight | Gram | 13.0 | unit cell |

*To keep the best performance for those not used for a long time,we recommend to charge the cells/batteries at least 30% after discharge entirely in every 6 months.

4、 PERFORMANCE

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

Ambient Temperature : 20±5℃

Relative Humidity : 65±20%

Notes: Standard Charge/Discharge conditions:

Charge: 95 mA(0.1C)× 16 hours

Discharge: 190 mA(0.2C) to 1.0V/cell

| Test | Unit | Specification | Condition | Remarks |
|---------------------------|-------|---|--|----------------------------|
| Capacity | mAh | ≥ 900 | Standard Charge/ Discharge | up to 3 cycles are allowed |
| Open Circuit Voltage(OCV) | V | ≥ 1.25 | Within 1 hour after standard charge | |
| Internal Impedance | mΩ | ≤ 40 | Upon fully charged(1KHz) | |
| High Rate Discharge(1C) | min | ≥ 51 | Standard Charge, 1 hour rest before discharge by 1C to 1.0V/cell | up to 3 cycles are allowed |
| Charge Retention | mAh | ≥ 570 (60%) | Standard Charge,Storage: 28 days Standard Discharge | T ₁ =20±5℃ |
| IEC Cycle Life | Cycle | ≥ 500 | IEC61951-2(2003)7.4.1.1 | see Note 3 |
| Leakage | | No leakage nor deformation | Fully charged at : 95 mA for 48 hrs | |
| Vibration Resistance | | Change of voltage should be less than 0.02V/cell,Change of impedance should be less than 5 milli-ohm/cell | Charge the battery at 0.1C for 14hrs,then leave for 24hrs,check battery before/after vibration,amplitude 1.5mm,vibration 3000 CPM,any direction for 60mins. | |
| Impact Resistance | | Change of voltage should be less than 0.02V/cell,change of impedance should be less than 5 milli-ohm/cell | Charge the battery at 0.1C for 14hrs,then leave for 24hrs,check battery before/after dropped,height 50 cm wooden board(thickness 30mm)direction not specified,3 times. | |

5、 CONFIGURATION, DIMENSIONS AND MARKINGS

Please refer to the attached drawing.

6、 EXTERNAL APPEARANCE

The cell/battery shall be free from cracks, scars, breakage, rust, discoloration, leakage or deformation.

7、 WARRANTY

One year limited warranty against workmanship and material defects.

8、 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 cells/batteries may result.

[5]Do not incinerate or mutilate the cells/batteries.

[6]Do not solder directly to the cells/batteries.

[7]The expected life may be reduced if the cells/batteries are subjected to adverse conditions as:
extreme temperature, deep cycling, excessive overcharge/ over-discharge.

[8]Store the cells/batteries in a cool dry place. Always discharge batteries before packing.

Notes:

[1] T_1 : Ambient Temperature.

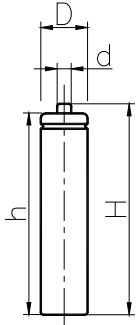
[2] Approximate charge time from discharged state, for reference only.

[3] IEC61951-2(2003)7.4.1.1 Cycle Life:

| Cycle No. | Charge | Rest | Discharge |
|---|------------------------|------|------------------------|
| 1 | $0.1C \times 16h$ | None | $0.25C \times 2h20min$ |
| 2-48 | $0.25C \times 3h10min$ | None | $0.25C \times 2h20min$ |
| 49 | $0.25C \times 3h10min$ | None | $0.25C$ to 1.0V/cell |
| 50 | $0.1C \times 16h$ | 1-4h | $0.2C$ to 1.0V/cell |
| Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3 h. | | | |

MODEL No: AAA950

Description: 950 mAh SIZE NI-MH AAA



Dimensions(without Tube) (mm)

| | |
|---|------------|
| D | 10.20±0.10 |
| d | 3.70±0.08 |
| H | 44.00±0.50 |
| h | 42.50±0.50 |

Specification

| | | |
|--|-----------|---------------------------------------|
| Nominal Capacity | | 950 mAh |
| Nominal Voltage | | 1.2 V |
| Charge current | Standard | 95 mA |
| | Fast | 475 mA |
| Charge time | Standard | 16 Hrs |
| | Fast | 2.1 Hrs |
| Ambient Temperature | Charge | Standard: 0°C~45°C Fast: 10°C~45°C |
| | Discharge | -20°C~60°C |
| | Storage | -20°C~55°C |
| Internal Impedance(mΩ) (After Charge) | | ≤ 40 |
| Weight | | 13.0 g |

