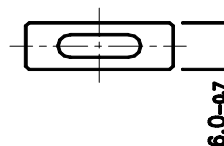
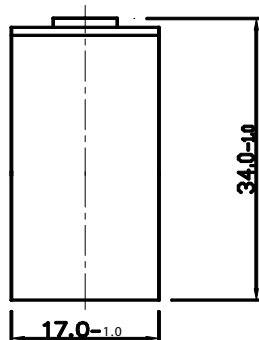


1.SPECIFICATIONS:

Type	Sealed Ni-MH Prismatic Battery cell
<b>Size</b>	H600 3/5F6S
<b>Model</b>	3/5F6S
<b>Nominal Voltage</b>	1.2V
<b>Nominal Capacity</b>	520mAh
<b>Typical Internal Impedance(at 1 kHz ) (fully charged at 20℃max)</b>	35mΩ
<b>Average Weight</b>	12.5g
<b>Dimensions(including PVC tube)</b>	
<b>Height(h)</b>	34.0 <sup>-1.0</sup> mm
<b>Width(w):</b>	17.0 <sup>-1.0</sup> mm
<b>Thickness(t):</b>	6.0 <sup>-0.7</sup> mm
Capacity (20℃,Standard Charge,0.2 I <sub>t</sub> A discharge to 1.0V)	
<b>Typical Capacity:</b>	<b>520mAh</b>
<b>Minimum Capacity</b>	<b>500mAh</b>
<b>Charging Method: (20℃)</b>	
<b>Standard Charge:</b>	<b>Charge with 0.1 I<sub>t</sub>A (50mA) for 12</b>
<b>Quick Charge</b>	<b>Charge with 0.3 I<sub>t</sub>A (150mA) for 4.5 hours</b>
<b>Fast Charge:</b>	<b>Charge with 1.0 I<sub>t</sub>A (500mA) for 72 minutes (Under -ΔV controlled 10mV)</b>
<b>Max Overcharge Current</b>	<b>0.1 I<sub>t</sub>A (50mA)(No longer than 100 hours)</b>
<b>Trickle Current</b>	<b>15~25mA</b>
<b>Operating Temperature(reference only):</b>	
<b>Storage</b>	<b>-20℃~+35℃</b>
<b>Discharge:</b>	<b>-20℃~+60℃</b>
<b>Standard Charge</b>	<b>0℃~+45℃</b>
<b>Fast Charge</b>	<b>+10℃~+45℃</b>



Approved by:

Documented by:

Date: 2008-June-26

## 2.Performance

Testing Item	Testing Conditions	Standard
Standard Testing Condition	If not specially described, Temperature $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Relative Humidity: $65 \pm 20\%$ 。 Parament measuring instruments: $\pm 1\%$ for voltage/current/capacity; $\pm 2^{\circ}\text{C}$ for temperature; $\pm 0.1\%$ for time.	
(1)Standard Charge	0.2 $I_t$ A discharge to 1.0V,then 0.1 $I_t$ A charge for 14-16 hours(Constant Current)	
(2)Fast Charge	0.2 $I_t$ A discharge to 1.0V,then 1.0 $I_t$ A charge for 72 minutes(Under - V controlled 10mV)	
(3)Open Circuit Voltage	Test within 14 days after standard charge	$\geq 1.25\text{V}$
(4)Nominal Capacity	Have 1-4 hours of rest after standard charge, then 0.2 $I_t$ A ischarge to 1.0V 3 cycles permitted	$\geq 300$ minutes
(5)High Rate Discharging Capacity	Have 1-4 hours of rest after fast charge, Then 1.0CA discharge to 1.0V,3 cycles permitted	$\geq 54$ minutes
(6)Cycle Life	2)※for IEC61951-2: 2003(7.4.1.1)	$\geq 500$ th cycle
(7)Overcharge	After(4) testing, The cell shall be charge ,in an ambient temperature of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,at a constant current of 0.1 $I_t$ A for 48h,After this charging operation ,the cell shall be stored , in an ambient temperature of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,for not less then 1 h and not more then 4 h.t 1~4h. The cell shall then be discharge ,at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ at a constant current of 0.2 $I_t$ A to a final vottage of 1.0V.	$\geq 300$ minutes.
(8)Over-Discharge Safety device operation	The cell shall undergo aforced discharge in an ambient temperature $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,at a constant current of 0.2 $I_t$ A, to a final volatge of 0V. The current shall then be increased to 1.0 $I_t$ A and the forced discharge continued in the same ambient temperature of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,for 60min.	The cell shall not disrupt or burst, Leakage Of electrolyte and deformation of the cell are acceptable
(9)Temperature	Fast charged as (2) under $20 \pm 5^{\circ}\text{C}$ ,stored 3 hours, under following temperatures,then 1.0 $I_t$ A discharge to 1.0V: a) Discharging Temperature: $0^{\circ}\text{C}$ b)Discharging Temperature: $20^{\circ}\text{C}$ c)Discharging Temperature: $40^{\circ}\text{C}$	Discharging Time 45 minutes 50 minutes 45 mimutes
(10)Charge(capacity) retention(Self-discharge)	After standard charge, stored for 28 days under $20 \pm 5^{\circ}\text{C}$ ,then 0.2 $I_t$ A discharged to 1.0V	Discharging Time $\geq 210$ minutes
(11)Storage	Standard Charged as (1) condition and stored for 12 months under $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,then tested as (4)	Discharging Time $\geq$ 240minutes

	condition	
(12)Mechanical test : bump test	1)The battery shall be subjected to drop from the height of 1 m to an oak board more than 1 cm thick,the test should be carried for 3 times at each direction of the battery axis.	Battery maintain electrical performance, allowing a mechanical deformation or injury
	2) The ability of the cell to withstand mechanical Shock shall be checked by means of bump test carried out in accordance with IEC 60068-2-29. After standard charge, The bump test shall be changed carried out in an ambient temperature of $20\pm 5^{\circ}\text{C}$ , under the following conditions: -peak acceleration(A) $98\text{m/s}^2$ (10gn) -corresponding duration to pulse(D) 16ms -corresponding velocity charge 1,00ms -number of bumps $1000\pm 10$ When the bump test has been completed,each cell shall be stored for not less then 1 h and mot more then 4 h in an ambient temperature of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ,It shall then be discharge in the same ambient temperature with a constant current of 0.2 $I_t$ A to a final volatge of 1.0V	$\geq 300$ minutes.

3. Note:

- 1).Do not dispose of cell into fire or be dismantled under any condition.
- 2).Do not mix different cell types and capacities in the same battery assembly.
- 3).Charge and discharge under specified ambient temperature recommended to BFN specification.
- 4).Short circuit leading to cell venting must be avoided .
- 5).Never solder onto cell directly.
- 6).Cell reversal should be avoided.
- 7).Use batteries in extreme condition may affect the service life, such as:extreme temperature, deep cycle,extreme overhcharge and over discharge.
- 8).Batteries should be stored in a cool dry place.
- 9).Once problems be found,stop using,send batteries to local dealer.

4,Storage

- 1).It is strongly recommended to store Ni-MH batteries and cells in the temperature range from  $-20$  to  $25^{\circ}\text{C}$  ,and in low humidity and no corrosive gas environment,to maintain a reasonably high capacity recovery level.
- 2). Avoid storage higher (e.g. $35^{\circ}\text{C}$ ),lower temperature than  $-20^{\circ}\text{C}$  ,or higher humidity which would result in deterioration or damage to the cells and batteries such as follows:

5, Permanent capacity loss

Electrolyte leakage resulted from the expansion or shrinkage of organic material inside the cells

6, Rust of metal parts.

7, Up to three full cycles of charge /discharge after long-termed storage may need to obtain highest capacity.

8. Quality assurance period: 12 months.

※IEC61951-2: 2003(7.4.1.1) Endurance in cycles

Cycle number	Charge	Stand in charged condition	Discharge
1	0.1 $I_t$ A (50mA) for 16h	none	0.25 $I_t$ A (125mA) for 2h 20 min
2-48	0.25 $I_t$ A (125mA) for 3h 10 min	none	0.25 $I_t$ A (125mA) for 2h 20 min
49	0.25 $I_t$ A (125mA) for 3h 10 min	none	0.25 $I_t$ A (125mA) to 1.0 V
50	0.1 $I_t$ A (50 mA) for 16h	1 h to 4 h	0.2 $I_t$ A (100mA) to 1.0 V

Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes Less than 3 h. At this stage, a repeat capacity measurement as specified for cycle 50 shall be carried out. The endurance test is considered complete when two successive capacity measurement cycles give a discharge duration of less than 3 h. The number of cycles obtained when the test is completed shall be not less than 500.

