1. Scope

This specification governs the performance of the following Nickel-Metal Hydride cylindrical battery cell 1.2V C4000mAh.
Model: H-C4000H
Cell size: C.
The data involving the nominal voltage and the approximate weight of the battery pack.

2. Ratings

Description	Unit	Specification	Conditions
Nominal Voltage	V	1.2	Unit cell
Nominal Capacity	mAh	4000	Standard charging / discharging
Minimal Capacity	mAh	3800	
Standard Charge	mA	400 (0.1C)	Ta=0-70℃
	hrs	14	
Trickle Charge	mA	200 (0.05C)	Ta=-10~70℃
Maximum Continuous Discharge Current	mA	8000 (2.0C)	Ta= -10~70℃
Storage Temperature	℃	-20-35	Percent 30-50 charged state
Typical Weight	g	85	Unit cell

3. Performance

Unless otherwise stated, tests should be done within one month of delivery under the following conditions:
Relative humidity : 65+20% RH
Ambient Temperature (Ta) : 20+5℃
***Notes: Standard charge / discharge condition
Charge: 400 mA (0.1C) x 14 hrs
Discharge: 800 mA (0.2C) to 1.0V
***The batteries must be standard discharged before charging,
***Battery test vide infra:

Test	Unit	Specification	Conditions	Remarks
Capacity	mAh	≥3800	Standard Charge / Discharge	Up to 3 cycles allowed
Open Circuit Voltage (OCV)	V	≥1.25	Within 1 hr after standard charge	Unit cell
Internal Impedance (Ri)	mΩ	≤10	Upon fully charge (1 Khz)	Unit cell
High Rate Discharge (1.0C)	min	≥52	Standard charge, 1 hr rest before discharge	Discharge cut-off voltage 1.0V
Overcharge	mAh	No leakage nor explosion ≥3000 (75%)	200mA (0.05C) for 5 years standard discharge	
Charge Retention	mAh	≥3000 (75%)	Standard charge, storage for 28 days, standard discharge	
Permanent Charge endurance			IEC 61951-2 （7.4.2.3） For MT cell.	

Short Circuit	N/A	Deformation & leakage may occur but no explosion	After standard charge, short circuit for 1 hr (lead wire = 1.0mm^2 x 20mm)	
Vibration Resistance	N/A	△V<0.02V	Charge at 0.1C for 14 hrs, then leave for 24 hrs. Check battery before / after vibration Amplitude: 1.5mm, Vibration: 3000CPM (and direction for 60 mins)	Unit cell
Impact Resistance	N/A	△V<0.02V	Charge at 0.1C for 14 hrs, then leave for 24 hrs. Check battery before / after drop the wooden board of thickness: 30 mm Height: 50 cm, test for 3 times. Direction is not specified	Unit cell

4. Configurations, Dimensions And Markings

Please refer to the related drawing.

5. External Appearance

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

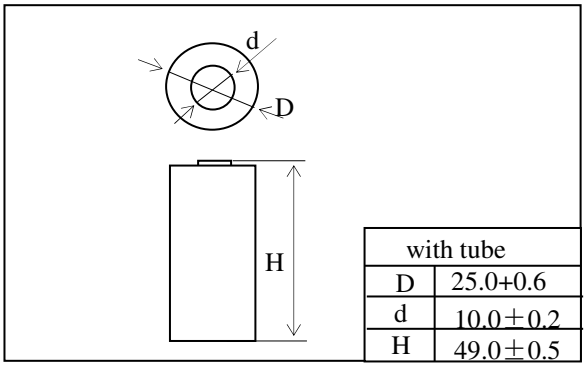
6. Warranty

One year limited warranty against workmanship and material defect.

7. Cautions

1. Reverse charging is not acceptable.
2. Charge before use.
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. Keep away form children. If swallowed, contact a physician at once.

Dimensions (mm)



with tube	
D	25.0+0.6
d	10.0±0.2
H	49.0±0.5

Nominal Voltage: 1.2V

Nominal Capacity: 4000 mAh

Minimal Capacity: 3800 mAh

Standard Charge: 400 mA, 14 hrs

Trickle Charge: 200 mA, 32 hrs

Durable Overcharge Life: 5years (Trickle Charge)

Continuous Discharge : less than 8000 mA

Weight: 85g (Approx)

Internal Resistance: 8mΩ (Approx)

Ambient Temperature: Standard charge : 0 ~ 70℃

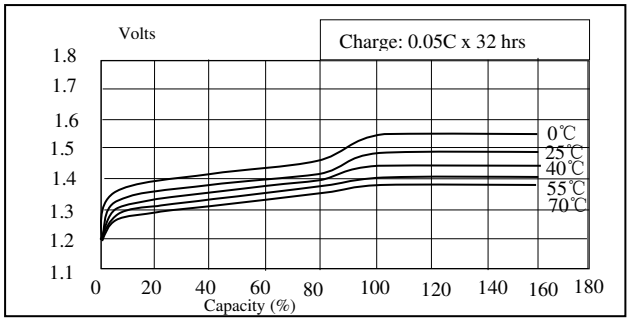
Trickle Charge: -10 ~ 70℃

Discharge: -10 ~ 70℃

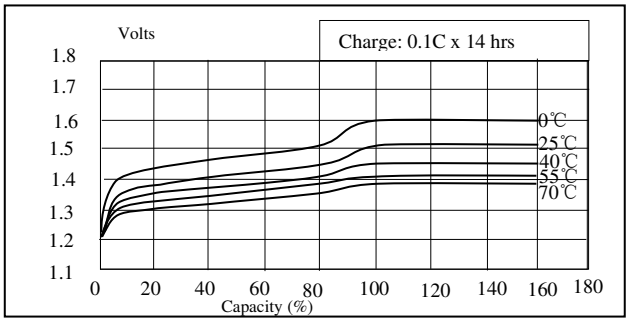
Store: Less than six months: -20~35℃

Less than one years: -20~30℃

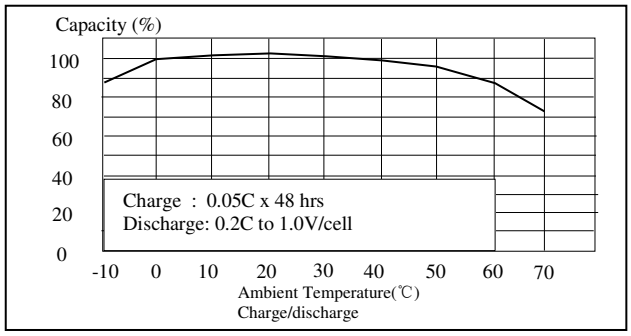
Note: After charge at 0.1C for 14 hrs and discharge at 0.2C to 1.0V at 25℃



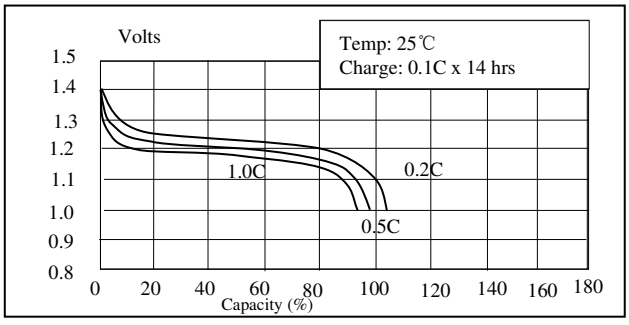
0.05C Rate Charging Curves



0.1C Rate Charging Curves



Charging Efficiency



1.0C/0.5C/0.2C Rate Discharging Curves