

Product Specification

Product Model: Nickel-Cadmium Battery

Product Type: J-A1400

Draw up: Technical Department

Date: 2014-10-10



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1 、 SCOPE

This specification governs the performance of the following **JJJ** Nickel-Cadmium cylindrical cell and its stack-up battery.

JJJ Model: A1400

Cell Size: A crew cut($16.6\pm0.1\times49.0\pm0.5$)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 \times 3=3.6V

3、 RATINGS

Description	Unit	Specification	Condition
Nominal Voltage	V/cell	1.2	Unit cell or stack-up batteries
Nominal Capacity	mAh	1400	Standard Charge/Discharge
Standard Charge	mA	140 (0.1C)	$T_1=20\pm5^\circ\text{C}$ (See Note 1)
	hour	16	
Fast Charge	mA	700 (0.5C)	- $\Delta V=0\sim15\text{mV/cell}$, Timer Cutoff=120% nominal capacity , Temp.Cutoff= 55°C , $dT/dt=0.8^\circ\text{C/min}$, $T_1=20\pm5^\circ\text{C}$
	hour	2.4 approx (See Note 2)	
Trickle Charge	mA	(0.03C) \sim (0.05C)	$T_1=20\pm5^\circ\text{C}$
Standard discharge	mA	280 (0.2C)	$T_1=20\pm5^\circ\text{C}$ Humidity: Max85%
Discharge Cut-off Voltage	V/cell	1.0	
Storage Temperature	$^\circ\text{C}$	-20 \sim 30(Within 1 year)*	Discharged state Humidity: Max85%
		-20 \sim 40(Within 6 months)	
		-20 \sim 50(Within 1 month)	
		-20 \sim 60(Within 1 week)	
Typical Weight	Gram	29.5	unit cell

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

JJJ reserves the right to alter or amend the design,model and specification without prior notice.

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4、 PERFORMANCE

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

Ambient Temperature : $20\pm 5^{\circ}\text{C}$

Relative Humidity : $65\pm 20\%$

Notes: Standard Charge/Discharge conditions:

Charge: 140 mA(0.1C)× 16 hours

Discharge: 280 mA(0.2C) to 1.0V/cell

Test	Unit	Specification	Condition	Remarks
Capacity	mAh	≥ 1400	Standard Charge / discharge	up to 3 cycles are allowed
Open Circuit Voltage(OCV)	V	≥ 1.25	Within 1 hour after standard charge	
Internal Impedance	m Ω	≤ 20	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	≥ 910 (65%)	Standard Charge,Storage: 28 days,Standard Discharge	$T_1=20\pm 5^{\circ}\text{C}$
IEC Cycle Life	Cycle	≥ 500	IEC61951-1(2003)7.4.1.1	see Note 3
Leakage		No leakage nor deformation	Fully charged at 140 mA for 28 days	
Vibration Resistance		Change of voltage should be less than 0.02V/cell,change of impedance should be less than 5milliohm/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 5milliohm/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.	

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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) IEC61951-1(2003)7.4.1.1 Cycle Life:

Cycle No.	Charge	Rest	Discharge
1	0.1C×16h	None	0.25C×2h20min
2-48	0.25C×3h10min	None	0.25C×2h20min
49	0.25C×3h10min	None	0.25C to 1.0V/cell
50	0.1C×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.			

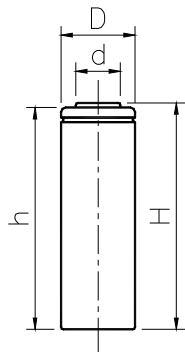
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MODEL No: J-A1400

Description: 1400 mAh SIZE NI-Cd A

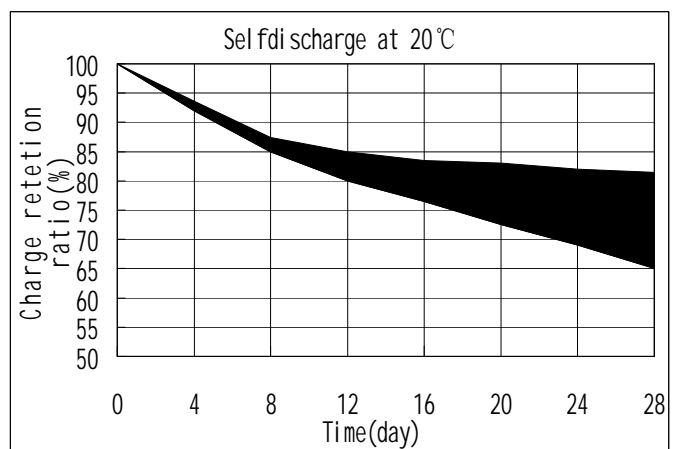
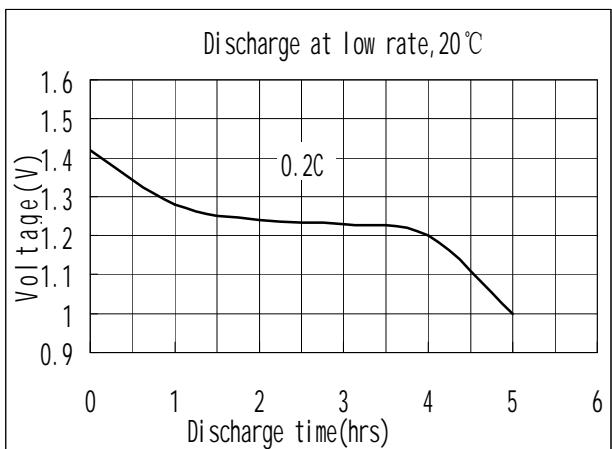
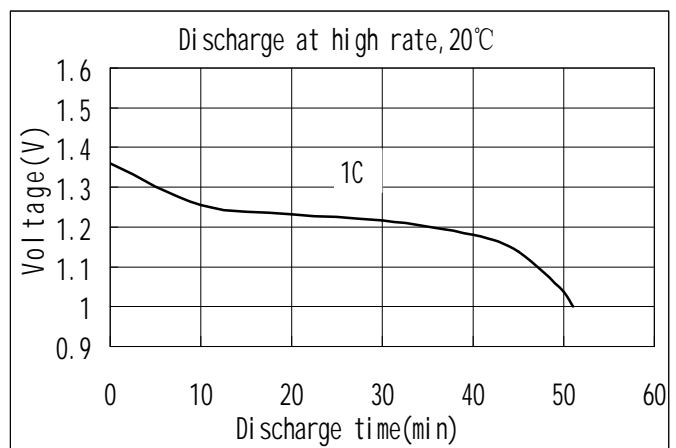
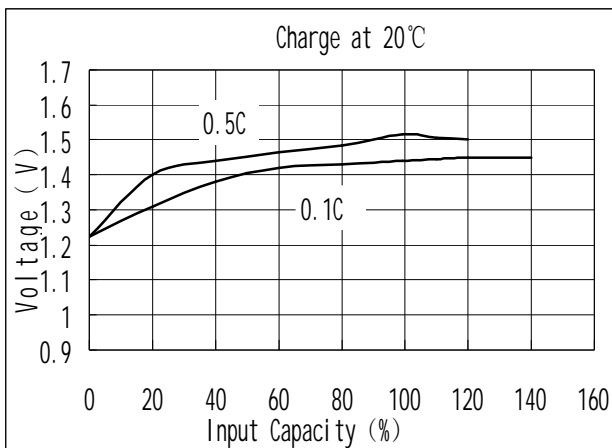


Dimensions(without Tube) (mm)

D	16.60±0.10
d	8.50±0.08
H	49.00±0.50
h	48.50±0.50

Specification

Nominal Capacity		1400 mAh	
Nominal Voltage		1.2 V	
Charge current	Standard	140 mA	
	Fast	700 mA	
Charge time	Standard	16 Hrs	
	Fast	2.4 Hrs	
Ambient Temperature	Charge	Standard	0℃~45℃
		Fast	10℃~45℃
	Discharge		-30℃~60℃
	Storage		-20℃~60℃
Internal Impedance(mΩ) (After Charge)		≤ 20	
Weight		29.5 g	



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