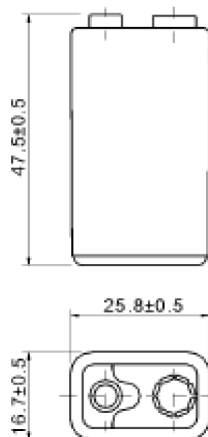


**SPECIFICATIONS**  
**Sealed Rechargeable Nickel Cadmium**  
**NI-CD 120mAh 9V (8.4V)**

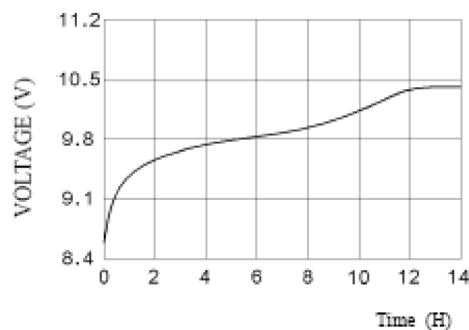
**TECHNICAL DATA**



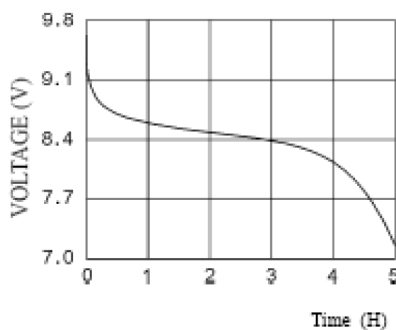
Model	Voltage	Capacity	Recommended Trickle Charge Current	Nominal Charge Current	Normal Charging Time	Nominal Discharge Current	Weight
NCB120K7D	8.4V	120mAh	3.6~6mA	12mA	14~16h	24mA	39g

**TECHNICAL CHARACTERISTICS**

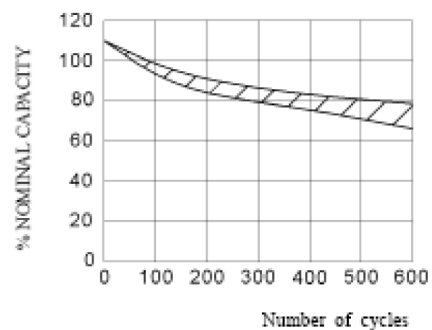
TYPICAL CHARGE CURVE (12mA)



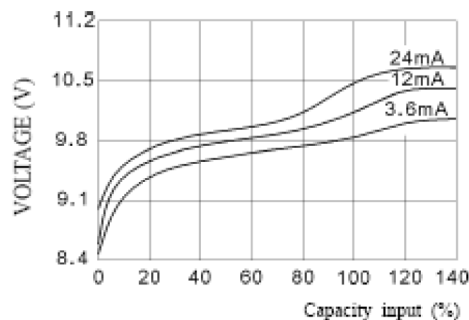
TYPICAL DISCHARGE CURVE (24mA)



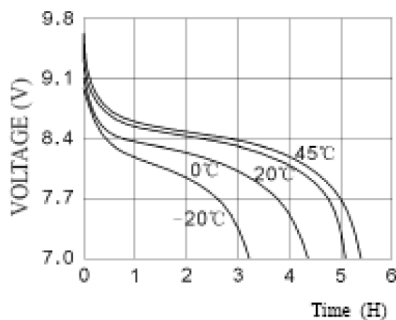
CYCLE LIFE CURVE



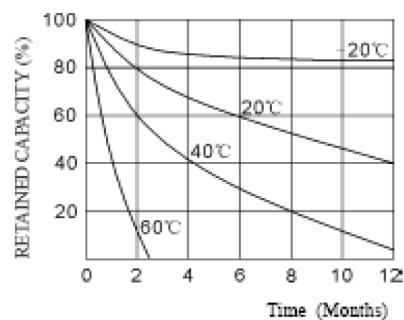
TYPICAL CHARGE CURVE AT VARIOUS CURRENTS



DISCHARGE CURVE AT VARIOUS TEMPERATURES (24mA)



SELF DISCHARGE RATE AT VARIOUS TEMPERATURES



**SPECIFICATIONS**  
**Sealed Rechargeable Nickel Cadmium**  
**NI-CD 120mAh 9V (8.4V)**

## TECHNICAL INFORMATION

### 1. APPLICATION

This specification applies to the Ni-Cd batteries

Model : NCB120K7D

### 2. CELL AND TYPE

2.1 Cell : Sealed Ni-Cd Button Cell

2.2 Type : Button type

2.3 Size type : 8.4V

### 3. RATINGS

3.1 Nominal voltage : 8.4V

3.2 Nominal capacity : 120mAh/0.2CmA

3.3 Typical weight : 39g

3.4 Standard charge : 12mA × 14hours

3.5 Rapid charge : 24mA × 6hours

Trickle current : 3.6mA

3.6 Discharge cut-off voltage: 7.0V

3.7 Temperature range for operation (Humidity: Max.85%)

Standard charge 0~+45℃

Rapid charge +10~+45℃

Trickle charge 0~+45℃

Discharge -10~+45℃

3.8 Temperature range for storage (Humidity: Max.85%)

Within 2 years -20~+35℃

Within 6 months -20~+45℃

Within a month -20~+45℃

Within a week -20~+55℃

### 4. ASSEMBLY & DIMENSIONS

Per attached drawing

### 5. PERFORMANCE

#### 5.1 TEST CONDITIONS

The test is carried out with new batteries (within a month after delivery)

Ambient conditions

Temperature:  $+25 \pm 5^\circ\text{C}$

Humidity:  $60 \pm 20\%$

Note 1

Standard charge : 12mA × 14hours

Standard discharge : 0.2C to 7.0V

**SPECIFICATIONS**  
**Sealed Rechargeable Nickel Cadmium**  
**NI-CD 120mAh 9V (8.4V)**

**5.2 TEST METHOD & PERFORMANCE**

Test	Unit	Specification	Conditions	Remarks
Capacity	mAh	$\geq 120$	Standard Charge/discharge	Up to 3 cycles Are allowed
Open Circuit Voltage (OCV)	Voltage (V)	$\geq 9.1$	After 1 hour standard Charge	
Internal Impedance	m $\Omega$ /cell	$\leq 500$	Upon fully charge (1KHz)	
High rate Discharge (0.5C)	Minute	$\geq 60$	Standard charge Before discharge	
Discharge Current	mA	60	Maximum continuous Discharge current	
Over charge		No leakage Not explosion	3.6mA(0.03C) charge one year	
Charge Retention	mAh	96	Standard charge; Storage: 28 days; Standard discharge	
Cycle Life	Cycle	$\geq 500$	IEC285 (1993) 4.4.1	
Leakage		No leakage nor Deformation	Fully charge at 12mA, Stand 14 days	

Note 2 IEC285 (1993) 4.4.1 cycle life

Cycle number	Charge	Rest	Discharge
1-50	12mA for 14h		24mA for 5h

50 cycles of test as in the following table condition is repeated, The discharge time of the 100<sup>th</sup>, 200<sup>th</sup>, 400<sup>th</sup>, 500<sup>th</sup> is more than 5 hours. (Ambient temperature is  $20 \pm 5^\circ\text{C}$ )

**5.3 Humidity**

The battery shall not leak during the 14 days, which it is submitted to the condition of a temperature of  $33 \pm 3^\circ\text{C}$  and a relative humidity of  $80 \pm 5\%$

**6. OTHERS**

6.1 We recommend you to set the cut-off voltage at 1.0V/cell

6.2 If the cut-off voltage is above 1.1V/cell, the battery may be underutilized resulting from insufficient use of the available capacity

6.3 If it is below 1.0V/cell, the battery may have discharge or reverse charge to the cell

**7. PRECAUTION**

The cells shall be delivered in charged condition. Before testing or using, the cell shall be discharged at  $20 \pm 5^\circ\text{C}$  at a constant current of 0.2CmA to a final voltage of 1.0V/cell.

7.1 Avoid throwing cells into a fire or attempting to disassemble them.

7.2 Avoid short-circuiting the cells.

7.3 Avoid direct solidarity to cells.

**SPECIFICATIONS**  
**Sealed Rechargeable Nickel Cadmium**  
**NI-CD 120mAh 9V (8.4V)**

- 7.4 Observe correct polarity when connecting.
- 7.5 Do not charge with more than our specified current.
- 7.6 Use cells only within the specified working temperature range.
- 7.7 Store cells in dry and cool place.