Ni-CD Battery Technology Specification

Reference	**BAT1070**
Part name	Ni-CD Battery
Model No	Ni-Cd D4000mAh 3.6V

If manufacturer want to modify the product technology specification, we won't inform you additionally)

1. SCOPE

This specification governs the performance of the following Ni-Cd battery Cylindrical Cell and its stack-up batteries.

Model: Ni-Cd D4000mAh 3.6V

The data involving nominal voltage and the approximate weight of stake-up batteries shall be equal to the value of the unit cell multiplied by the number of unit cells in the battery.

Nominal voltage of unit cell = 1.2V

2. RATINGS

Description	Unit	Specification	Conditions
Nominal Voltage	V	3.6	
Nominal Capacity	mAh	4000	Standard Charge/discharge
Minimum Capacity	mAh	3800	Standard Charge/discharge
Standard Charge	mA	400(0.1C)	Ta=0～45℃
	hour	14-16	
Fast Charge	mA	2000(0.5C)	-ΔV=15～30mV/pcs Timercutoff=110%input capacity Temp.cutoff=55℃ Ta=10～45℃
	hour	2.4approx	
Trickle Charge	mA	200(0.05C) ～ 400(0.1C)	Ta=0～45 ℃
Discharge Cut-off Voltage	V	3.0	Ta=-20～55℃
Maximum Discharge Current	mA	6000	Ta=10～45℃
Storage Temperature	℃	-20～35℃	Discharge state

3. PERFORMANCE

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

Ambient Temperature: Ta=20±5℃

Relative Humidity: 65±20%

Standard Charge/ Discharge Condition:

Charge: 400mA(0.1C)×16hrs

Discharge: 800mA(0.2C)to1.0V/ cell

Table 1

Test	Unit	Specification	Conditions	Remarks
Capacity	mAh	≥3800	Standard Charge/Discharge	Up to 3 cycles are allowed
Open Circuit Voltage (OCV)	V	≥3.75	Within 1hr after standard charge	
Internal Impedance (Ri)	mΩ	≤90	Upon fully charge(1kHz) (1kHz)	
High Rate Discharge (0.5C)	min	≥108	Standard Charge,1hr rest before discharge	
High Rate Discharge (1C)	min	≥54	Standard Charge,1hr rest before discharge	
Overcharge	N/A	No leakage nor explosion	400mA(0.1C) charge 48 hours	
Charge Retention	mAh	≥2400(60%)	Standard Charge, Storage: 7 days at 45℃,0.2C Standard Discharge	
IEC Cycles Test	Cycle	≥300	IEC61951-1（2003）	

Table 2

Test	Unit	Specification	Conditions
Leakage	N/A	No leakage nor deformation.	Full charged at (0.1C) stand for 14 days
Short Circuit	N/A	Leakage & deformation may occur, but no explosion is allowed.	After standard charge,short circuit for 1 hour(leading wire=0.75mm^2×20mm)
Vibration Resistance	N/A	Change of voltage ΔV < 0.02V, Change of internal ImpedanceΔRi < 5 mΩ.	Charge the battery 0.1C 16hrs,then leave for 24hrs. check battery before / after vibration. Amplitude:1.5mm Vibration:3000CPM Any direction for 60mins.

4. CONFIGURATION, DIMENSIONS AND MARKINGS

Please refer to the attached drawing.

 If manufacturer want to modify the product technology specification, we won't inform you additionally)

5. EXTERNAL APPEARANCE

The cell/ battery shall be free from cracks, scars, breakage, rust, Discoloration, leakage nor deformation.

6、CAUTION

◆.Reverse charging is not acceptable

◆.Do not burthen current when charging.

◆.Do not charge/discharge with more than the specified current.

◆.Do not short circuit the cell/ battery. Permanent damage to the cell/ battery may result.

◆. Do not incinerate or mutilate the cell/ battery.

◆.Do not subject batteries to adverse conditions like: extreme temperature, deep cycling and excessive Overcharge/overdischarge.The life expectancy may be reduced.

◆.Store the cell/ battery in a cool dry place. Always discharge the cell/battery before bulk storage or shipment.

◆. Cycle(charge and discharge) the battery every 6-9months to maintain cell/battery performance when being stored for an extended period of time.

◆.Keep away from children. If swallowed, contact a physician at once.

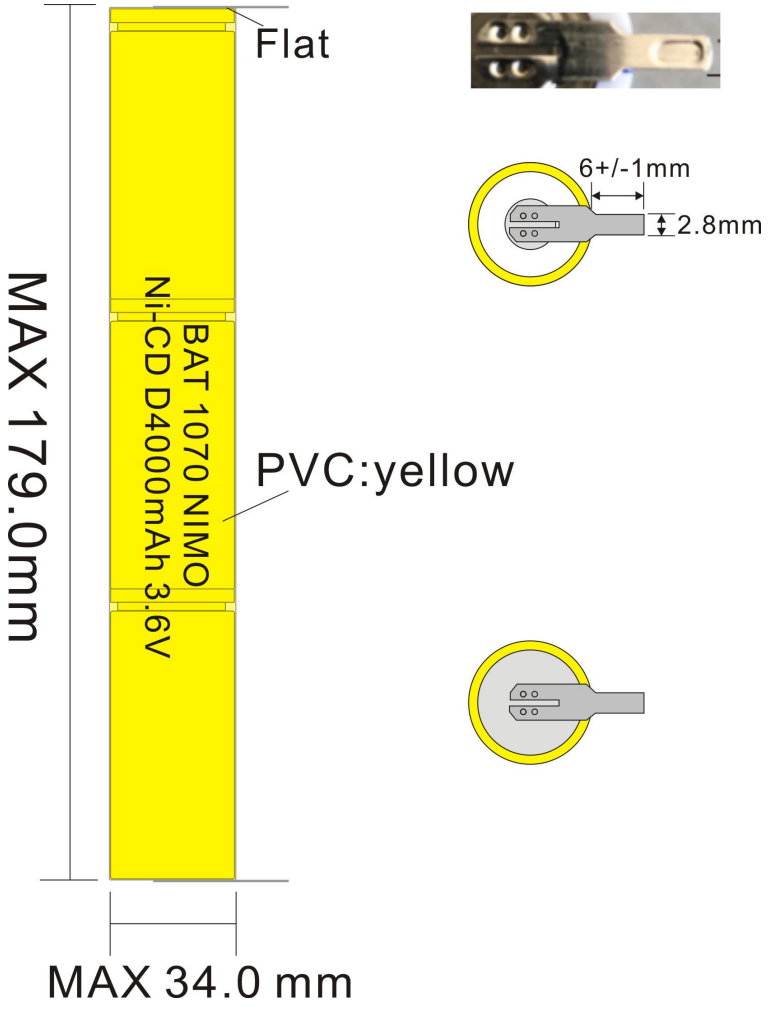
◆. Avoid airtight battery compartments. Ventilation should be provided in the plastic case of batteries, otherwise oxygen and hydrogen gas generated inside can cause explosion when exposed to fire sources such as motors or switches.

Remark：

IEC61951-1(2003) Cycle Life Test:

Cycle	Charge	Rest	Discharge
1	0.1C×16hrs	\	0.25C×2hrs20mins
2-48	0.25C×3hrs10mins	\	0.25C×2hrs20mins
49	0.25C×3hrs10mins	\	0.25Cto1.0/cell
50	0.1C×16hrs)	1-4hr(s)	0.2Cto1.0/cell
Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3hrs			

7. Dimensions of the battery：



……..END……..

 If manufacturer want to modify the product technology specification, we won't inform you additionally)