Specification Approval Sheet

Name: Nickel Metal Hydride Battery

Model:

SPEC: SC 1.2V 5000mAh

Approved By	Checkup	Make

Customer Confirmation	Signature	Date
	Company Name：	
	Stamp：	

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1 Application

This specification applies to the Nickel- Metal Hydrides Cylindrical Cell.
Model：MH-1.2V SC 5000mAh
Cell type：SC

2 Ratings

Form1:Battery rated performance

No	Description	Specification	Conditions
1	Nominal voltage	1.2 V	
2	Nominal capacity	5000mAh	Standard Charge/Discharge
3	Standard charge	0.1C ×16 hrs	Ta=0～45℃
4	Rapid charge	0.5C×140mins approx.	(With -△V or dT/dt or TCO control) Timer CutOff =117% -△V= 5-10mV/cell dT/dt= 0.8℃/min Temp. CutOff = 55℃ (122°F) Ta=10～45℃
5	Trickle charge	0.03C-0.05C	Ta=0～45℃
6	Standard discharge	0.2C	Ta=20±5℃
7	Discharge cut-off voltage	1.0V	
8	Maximum Discharging Current	30A	
9	Storage temperature	-20℃～35℃	Discharged state
10	Typical weight(approximate)	69.5g	

3 Performance

3.1 Test conditions

Unless otherwise stated, tests should be done within one month after receipt under the following conditions
Ambient Temperature ,Ta：20±5℃ and
Relative Humidity：65±20%
Notes：Standard Charge/Discharge Conditions：
Charge：0.1C × 16hrs
Discharge：0.2C to 1.0V/cell

3.2 Test method & performance

Form2:Test method & performance

No	Test	Conditions	Specification
1	Capacity	Standard charge/discharge	≥90% of Nominal capacity(30A discharge)
2	Open circuit voltage(OCV)	Within 1hr after standard charge	≥1.25V

3	Internal impedance (Ri)	Upon fully charge(1000Hz)	≤10mΩ
4	Charge Retention	Standard Charge, Storage：28 days, Standard Discharge	≥60% of NC
5	Cycle Life Test	IEC 61951-2：2003(see below note)	≥500 Cycle

Note：

Form3:IEC 61951-2：2003 Cycle life test

Cycle number	Charge	Rest	Discharge
1	0.1C×16hrs	None	0.25C× 2hrs20mins
2-48	0.25C× 3hrs10mins	None	0.25C×2hrs20mins
49	0.25C× 3hrs10mins	None	0.25C× 1.0V/cell
50	0.1C×16hrs	1-4hr(s)	0.2C×1.0V/cell
Cycles 1 to 50 shall be repeated until the discharge duration on any 50th cycle becomes less than 3hrs			

Form4:Safety test

Test Item	Test Conditions	Requirements
Humidity	Standard charged, stand for 14 days at 33±3℃ and 80±5% of relative humidity	No leakage
External Short Circuit	After standard charge, short-circuit the cell at 20℃±5℃ until the cell temperature returns to ambient temperature.(cross section of the wire or connector should be more than 0.75mm2)	No fire and no explosion
Safety Device Operation	Forced discharge at 0.2C to a final voltage of 0V,then the current be increased to 1C and forced discharge continue for 60 min	No explosion, Leakage of electrolyte and Deformation are acceptable
Free falling(drop)	Charge at 0.1C for 16hrs,and then leave for 24hrs,check battery before / after drop Height: 50 cm Thickness of wooden board: 30mm Direction is not specified Test for 3 times	No fire and no explosion

4 Assembly & dimension

As per attached drawing.

5 External appearance

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

6 Warranty

One year limited warranty against workmanship and material defects.

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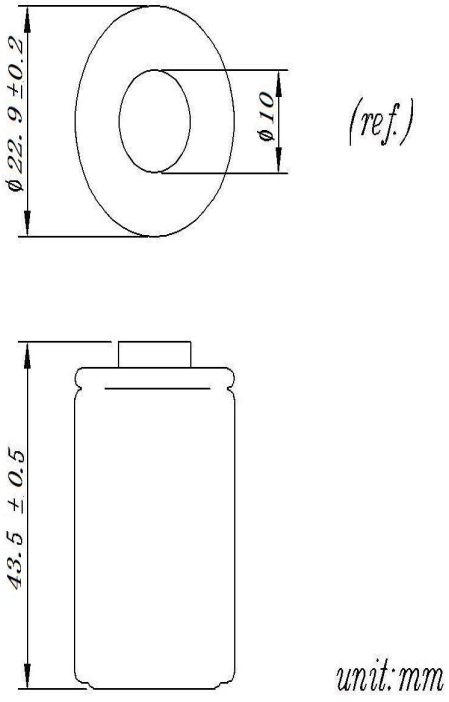
7 Caution

7.1 Reverse charging is not acceptable.
7.2 Charge before use. The cells / batteries are delivered in an uncharged state.
7.3 Do not charge / discharge with more than the specified current.
7.4 Do not short circuit the cell / battery. Permanent damage to the cell / battery may result.
7.5 Do not incinerate or mutilate the cell /battery.
7.6 Do not solder directly to the cell /battery.
7.7 The life expectancy may be reduced if the cell / battery is subjected to adverse conditions like:
extreme temperature , deep cycling , excessive overcharge / overdischarge.
7.8 Store the cell / battery uncharged in a cool dry place. Always discharge batteries before bulk storage or shipment.
7.9 For storage of cells/ batteries over one year, in order to prevent the degrading of the function of cells, cells / batteries should be at least charged and discharged once trimester.
7.10 Keep away from children. If swallowed, contact a physician at once.
7.11 Air ventilation should be provided in the plastic case of batteries, otherwise it may have a risk of accumulating gas (oxygen gas, hydrogen gas) generated inside the cell resulting in explosion triggered by fire sources (motors or switches). Airtight battery compartments are strongly discouraged.

8 Battery drawings

Drawing1:Battery drawings



9 Performance curve