



WAMA ELECTRONICS TECH CO.,LTD

1. Preface

This specification is suitable for the performance of the WAMA Ni-MH rechargeable battery.

2. Model

NIMH-D 9500mah

3. Appearance

There shall be no such defects as deformation, flaw, stain, discoloration or electrolyte leakage.

4. Nominal specification

Description		Specification	
Model		NIMH-D9500	
Size		D	
Dimensions	Diameter(mm)	33.0+0/-1.0	
	Height(mm)	60.0+0/-2.0	
	Weight(g)	Approx.145g	
Nominal Voltage(V)		1.2	
Nominal capacity(mAh)		9500	
Internal Impedance(mΩ)		≤25	
Discharge Cut-off Voltage		1.0V	
Ambient temperature	Charge	standard	0°C to 40°C
		fast	10°C to 40°C
	Discharge		-10°C to 50°C
	Storage	<1 year	-10°C to 30°C
		<3 months	-10°C to 40°C
The relative humidity should keep with in 65±20%			

5. Characteristics

Unless otherwise specified, the standard range of atmospheric conditions for test as follows:

Ambient temperature 20±5°C

Relative humidity 65±20%

Atmospheric pressure 960±100mbar

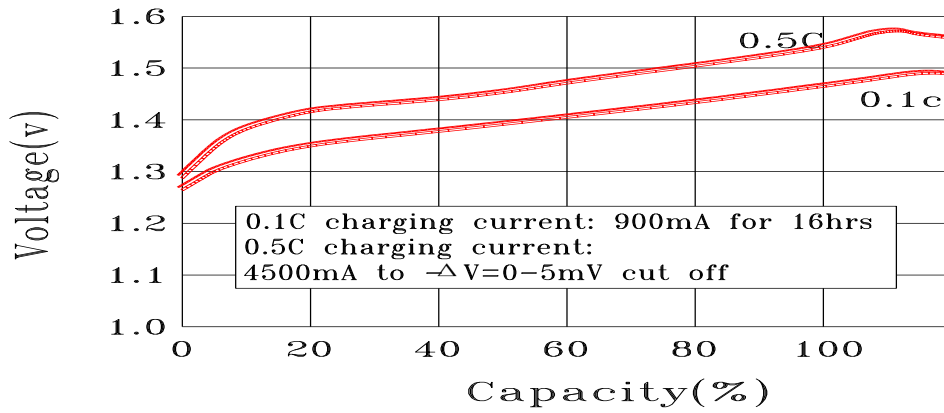
Accuracy of voltmeters and amperometers to be used in testing shall be equal to or better than the grade 0.5.



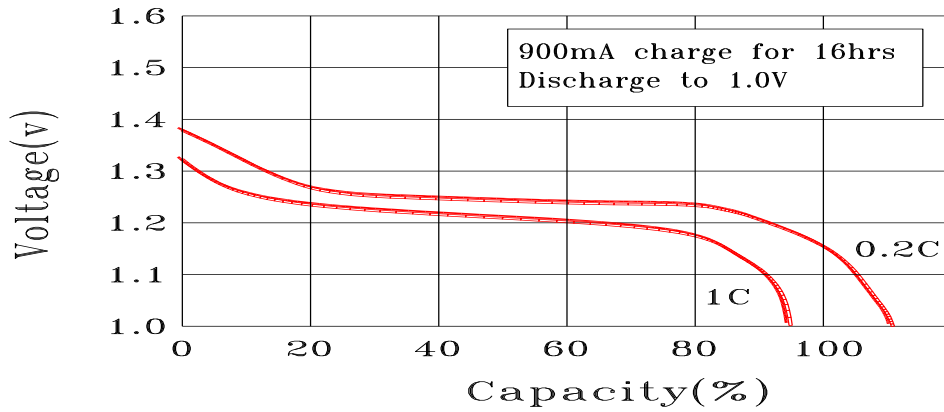
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Test item		Condition		Specification
1. Charge	Standard	Charge at 0.1C for 16 hours		
	Fast	Charge at 0.5C to $-\Delta V=0-5mV$		
2. Discharge cut-off voltage		At 0.2C		1.0V
3.Capacity (mAh)	Minimum	Standard charge/discharge		8500
	Typical	Standard charge/discharge		9000
4. Internal resistance		After fully charge,rest 1 hour, measured at 1000Hz		$\leq 25m\Omega$
5. Self-Discharge		The charged battery is stored for 28 days at $20^{\circ}C \pm 5^{\circ}C$. And the discharge time is measured at standard discharge		≥ 180 minutes
6. High temperature test		Store at $40^{\circ}C$ 、 $50^{\circ}C$ 、 $60^{\circ}C$ for 2 hours then charge/discharge		No leakage
7. Low temperature test		Store at $0^{\circ}C$ for 2 hours then charge/discharge		No leakage
8. Short circuit test		Short circuit after fully charge		No explode
9. Drop test		Free fall on the concrete from 1 meters after fully charged		No leakage No short-circuit
10.Cycle life	Charge	Rest	Discharge	Capacity retention $\geq 60\%$ after 500cycles
1	0.1C for 16h	0	0.25C for 2h20min	
2~48	0.25C for 3h10min	0	0.25C for 2h20min	
49	0.25C for 3h10min	0	0.2C to 1.0V	
50	0.1C for 16h	1~4h	0.2C to 1.0V	

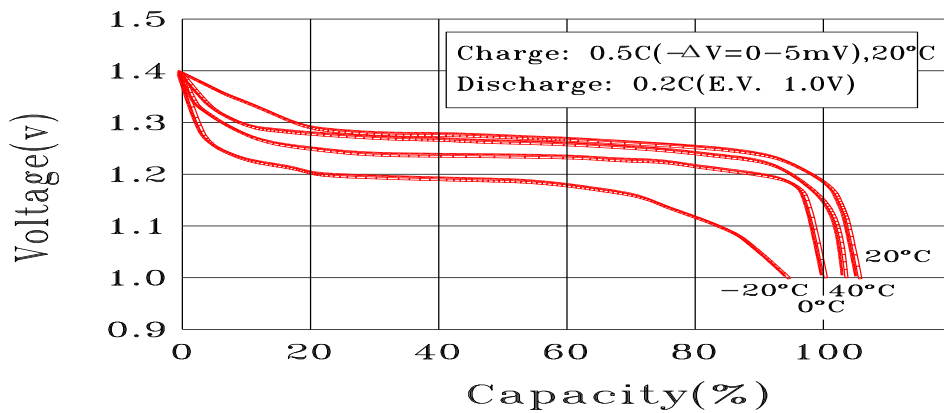
CHARGE CHARACTERISTICS



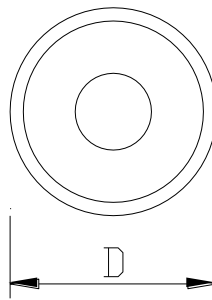
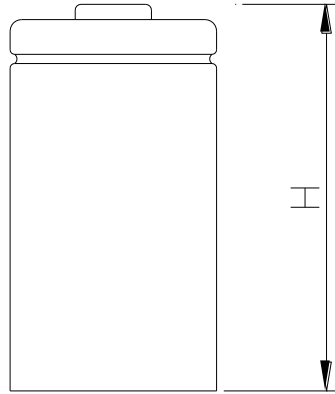
DISCHARGE CHARACTERISTICS



DISCHARGE CHARACTERISTICS AT DIFFERENT TEMPERATURE



7. Drawing:



Items	Description	Dimension
D	Diameter	33.0+0/-1.0 mm
H	Height	60.0+0/-2.0mm



8. Cautions in use

To ensure proper use of the battery please read the manual carefully before using it.

Handling

Do not expose to, dispose of the battery in fire.

Do not put the battery in a charger or equipment with wrong terminals connected.

Avoid shorting the battery.

Avoid excessive physical shock or vibration.

Do not disassemble or deform the battery.

Do not immerse in water.

Do not use the battery mixed with other different make, type, or model batteries.

Keep out of the reach of children.

Storage

Store the battery in a cool, dry and well-ventilated area.

Disposal

Regulations vary for different countries.

Dispose of in accordance with local regulations.

9. Note

Any other items which are not covered in this specification shall be agreed by both parties.