Specification Approval Sheet

Name: Nickel Metal hydride

Model: 10405

SPEC: AAA 1.2V

Approved By	Checkup	Make

Customer Confirmation	Signature	Date
	Company Name：	
	Stamp：	

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1.BATTERY MODEL: 10405

2.NOMINAL SPECIFICATION

2.1.Nominal voltage	1.2V
2.2.Nominal capacity*	1000mAh
2.3.Minimum capacity*	900mAh
2.4.Charging**	
Standard charging	90mA for 16 hours
Quick charging	450mA for 2.4hours, –ΔV=5mV
Rapid charging	900mA for 1.2hours, –ΔV=5mV
2.5.End voltage of discharge	1.0V
2.6.Temperature (recommended)	
Standard charge	0~40℃
Quick charge	10~40℃
Rapid charge	10~30℃
Discharge:	-10~50℃
Storage :	
Less than 30 days	-20~50℃
Less than 90 days	-20~40℃
Less than 1 year	-20~30℃
2.7.Relative humidity	45~85%
2.8.Weight	Approx. 12.5g
2.9.Dimensions	shown in the last page

Note *:Discharge capacity when the battery unit is discharged at 180mA after being standard charged. Five cycles are permitted for this test .The test shall be terminated at the end of the first cycle which meets the requirement.

**: Unless otherwise stated in these specifications, the battery unit should be discharged to 1.0V end voltage with 180mA before charging.

3. APPEARANCE

4.ELECTRICAL CHARACTERISTICS

Testing conditions

The battery shall be evaluated within 1 month from the arrival date.

Unless otherwise stated in these specifications, the following test shall be carried out in an ambient temperature of 20±5℃, relative humidity of 65±20%.

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Characteristics

Test Items	Test Conditions	Requirements	Remark
4.1 Open-circuit Voltage (OCV)	Voltage between the battery terminals shall be measured within 14 days after standard charge	≥1.25V	
4.2 Capacity	After standard charge, rest for 1 hour before discharge to 1.0V at 180mA current	Discharge Capacity: ≥900 mAh	Up to 5 cycles are allowed
4.3 High-rate discharge(0.5C)	After standard charge, rest for 1 hour before discharge to 1.0V at 450mA current	≥110 minutes	Up to 5 cycles are allowed
4.4 High-rate discharge (1C)	After standard charge, rest for 1 hour before discharge to 0.9V at 900mA current See Remark 1	≥52 minutes	Up to 5 cycles are allowed
4.5 Low temperature discharge	Within 1 hour after standard charged at 20℃, discharged at a current of 180mA to 1.0V at 0℃	≥240 minutes	
4.6 High temperature discharge	Within 1 hour after standard charged at 20℃, discharged at a current of 180mA to 1.0V at 40℃	≥240 minutes	
4.7 Internal impedance (Ri)	Upon fully charge (1KHz)	Max.45mΩ	
4.8 IEC cycle life	IEC61951-2 (2011) 7.5.1.2 See Remark 2	≥500 Cycles	
4.9 Charge retention	Standard charged ,stored for 28 days at 20±2℃ , discharged at a current of 180mA to 1.0V	≥180 Minutes	

Test Items	Test Conditions	Requirements	Remark
4.10 Over-charge	Within 1 hour after being charged at a current of 90mA for 48 hours, the battery unit shall be discharged at 20℃, at a current of 180mA to 1.0V end voltage	≥300 Minutes	
4.11 Continuous low-rate charging	After standard charged battery unit is charged at 27mA~45mA for 28 days	No fire , nor explosion	
4.12 Forced discharge	The discharged battery unit is subjected to a reverse charge at 900mA for 90 minutes	No fire , nor explosion	
4.13 Vibration	IEC62133 (2002) 4.2.2 See Remark 3	No leakage, nor fire , nor explosion	

***REMARK**

1.Decreased capacity

Capacity A which discharged at 900mA after standard charged

Capacity B which discharged at 900mA after 1C charged

Decreased capacity is (A-B/A)*100%. decreased capacity may be more than 8%

2. Cycle life: IEC61951-2(2011) 7.5.1.2

Cycles	Charge	rest	Discharge
1	0.1C×16hrs	0	0.25C×2hrs 20mins
2~48	0.25C×3hrs 10mins	0	0.25C×2hrs 20mins
49	0.25C×3hrs 10mins	0	0.25C to 1.0V/cell
50	0.1C×16hrs	1~4hrs	0.20C to 1.0V/cell
Cycle 1 to 50 shall be repeated until the discharge duration on any 50th cycle become less than 3hrs			

3. Vibration: IEC62133 (2002) 4.2.2

Frequency	10~55Hz
Amplitude	0.76mm
Rate of frequency variety	1 Hz/minute
Duration	90 minutes /axis (axis: X、Y、Z) 270 minutes in all

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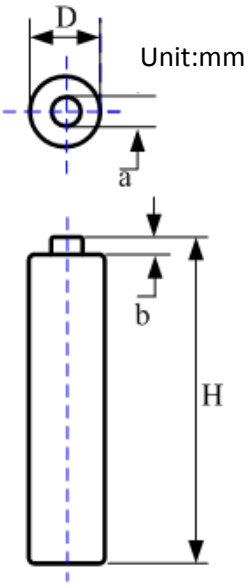
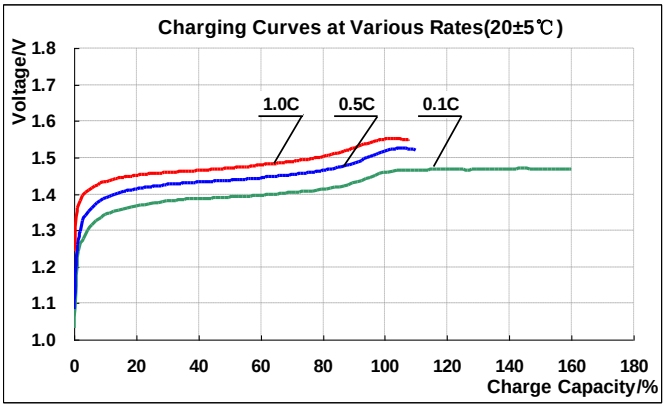
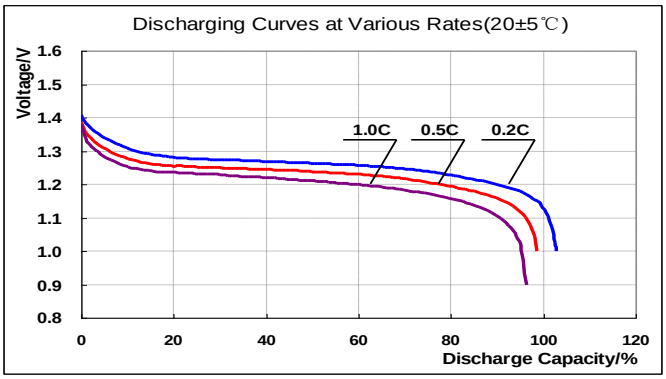
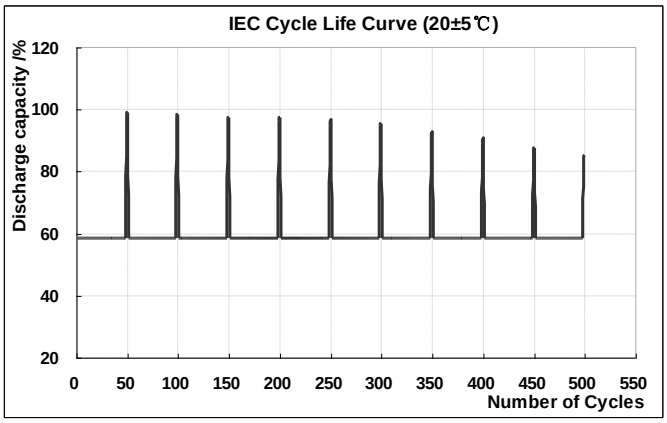
Data Sheet *Battery Model：10405*

Nominal voltage（V）			1.2
Capacity*（mAh）	Nominal		1000
	Minimum		900
Charging**	Standard		90mA×16hours
	Quick		450mA×2.4hours -ΔV=5mV
	Rapid		900mA×1.2hours -ΔV=5mV
Temperature recommended（℃）	Standard charge		0~40
	Quick charge		10~40
	Rapid charge		10~30
	Discharge		-10~50
	Storage		-20~30
Internal resistance			≤45mΩ
End voltage of discharge			1.0V
Charge (capacity) retention (20℃ 28days 180mA discharge to 1.0V)			≥180 minutes
Weight			Approx. 12.5g
Dimensions With tube	D	Diameter	$10.5^{+0}_{-0.7}$
	H	Height	$44.5^{+0}_{-1.0}$
	a	Top diameter	$3.7^{+0.1}_{-0.1}$
	b	Top height	0.8(Minimum)
Drawing			









Note：
*:The cycle life curve describes battery unit. Please discharge to the 1.0V end voltage with 180mA before charging the battery unit.
The data sheet is for reference only and should not be used as a basis for product described guarantee or warranty.