

1. Preface

This specification is suitable for the performance of the **TYSONIC** Ni-CD 9V rechargeable battery pack.

2. Model

TY-9V-120

3. Appearance

There shall be no such defects as discoloration, electrolyte leakage or no voltage.

4. Nominal specification

Description			Specification
Model			TY-9V-120
Size			TY-9V
Dimensions	Length (mm)	With sleeve	26.5max
	Width (mm)		17.5max
	Height (mm)		48.5max
	Weight(g)		Approx45g
Nominal Voltage(V)			8.4 V
Internal Impedance(Ω)			≤ 2
Discharge Cut-off Voltage			7.0V
Ambient temperature	Charge	standard	0°C to 40°C
		quick	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

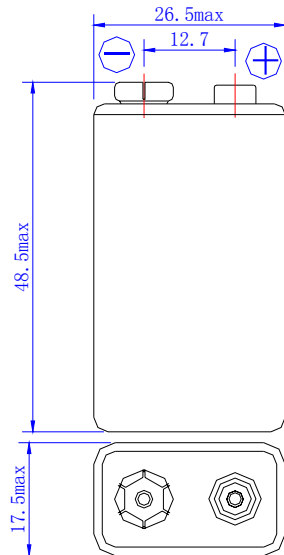
5.Characteristics

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

- Ambient Temperature $20 \pm 5^{\circ}\text{C}$
- Relative Humidity $65 \pm 20\%$
- Atmospheric Pressure $960 \pm 100\text{mbar}$
- Voltmeters and ammeters to be used in test shall be of grade 0.5 over

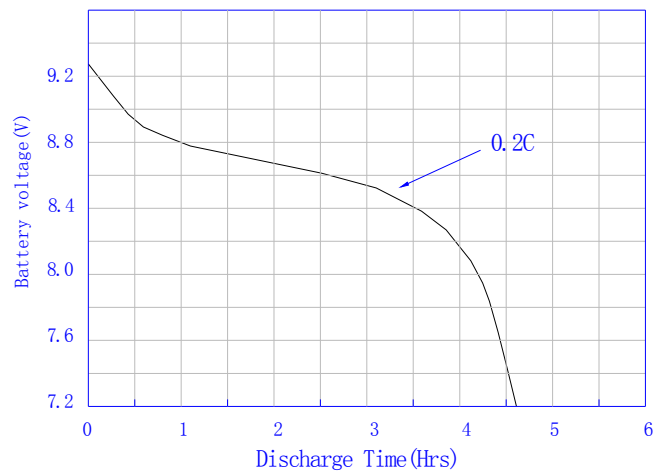
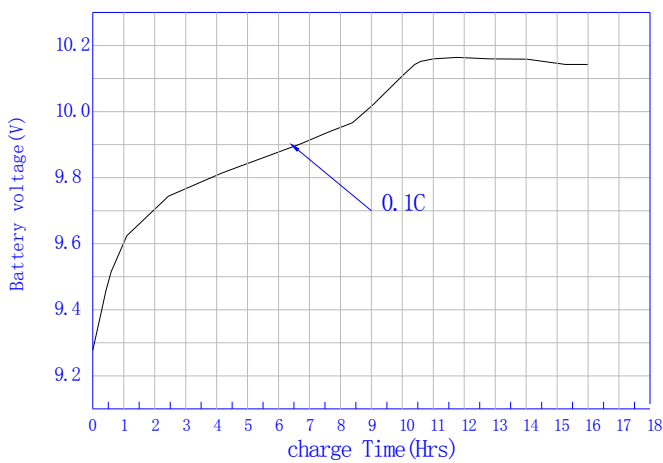
Test Item		Condition	Specification
1. Charge	Standard	Charge at $0.1C_5$ for 16 hours	
	quick	Charge at $0.2C_5$ for 6-7 hours	
2. Standard Discharge		At $0.2C_5$ to 7.0V	$\geq 5\text{h}$
3. Discharge Cut-off Voltage			7.0V
4. Capacity	Nominal	Standard Charge/Discharge	120mAh
5. Internal resistance		After charge at $0.2C_5$ to for 2.5 hours, rest 5 hours, measured at 1000Hz	$\leq 2\Omega$
6. Cycle life		By IEC standard: Charge ($0.25C_5$) for 3h 15min, discharge ($0.25C_5$) for 2h 30 min	Capacity Retention $\geq 65\%$ After 500 cycles
7. Self-Discharge		The charged battery is stored for 28 days at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$. And the discharge time is measured at Nominal discharge	$\geq 180\text{minutes}$
8. High Temperature Test		Store at 40°C 、 50°C 、 60°C for 2 hours then Charge/Discharge	No leakage
9. Low Temperature Test		Store at 0°C for 2 hours then charge/discharge	No leakage
10. Short Circuit Test		Short circuit after fully charge	No explode
11. Drop Test		Free fall on the concrete from 1 meter using to 3 axis after fully charged	No Break No short-circuit

6、mechanics



with sleeve

7、 charge/discharge curve (Charge at 0.1C, discharge at 0.2C)



8、 Caution :

8.1 Please charge battery follow the instruction of item 5.1, charge current cannot be more than the limit of item 5.1 and overcharge with high current is harmful. It may cause battery deformation, leak or even open the cover.

8.2 Do not discharge battery to the condition of lower voltage than 7.0V. Over-discharge may decrease the cycle life and may cause battery deformation, leak or open the cover.