

GREAT POWER BATTERY CO., LTD.

1. Preface

This specification is suitable for the performance of the **GREAT POWER** Ni-CD button rechargeable battery.

2. Model

PH450K-450

3. Appearance

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

4. Nominal specification

Description		Specification	
Model		PH450K-450	
Size		PH450K	
Dimensions	Length (mm)	24.0 ± 0.3	
	Width (mm)	34.5 ± 0.4	
	Height (mm)	6 ± 0.6	
	Weight(g)	Approx 15.5g	
Nominal Voltage(V)		1.2V	
Nominal capacity (mAh)		450	
Discharge Cut-off Voltage		1.0V	
Ambient temperature	Charge	standard	0 to 40
		quick	10 to 40
	Discharge		-10 to 50
	Storage	< 1 year	-10 to 30
		< 3 months	-10 to 40

5.Characteristics

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

- Ambient Temperature 20 ± 5

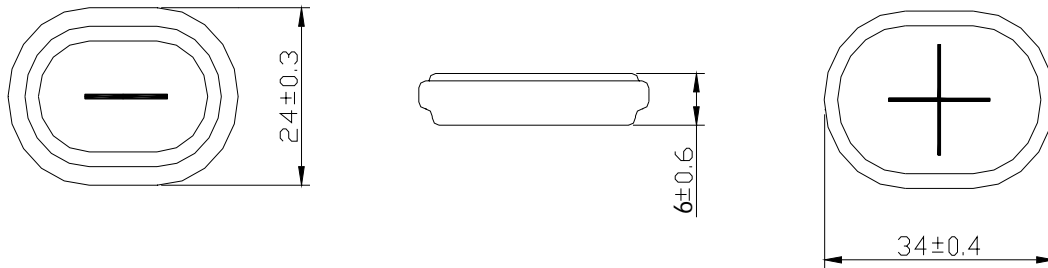
- Relative Humidity $65 \pm 20\%$

- Atmospheric Pressure $960 \pm 100\text{mbar}$

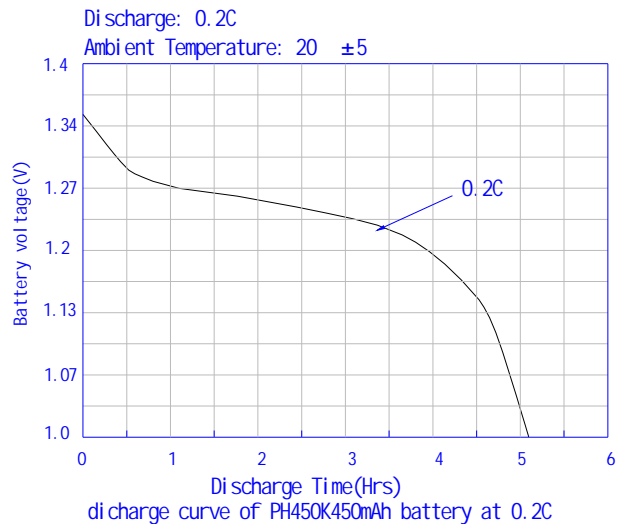
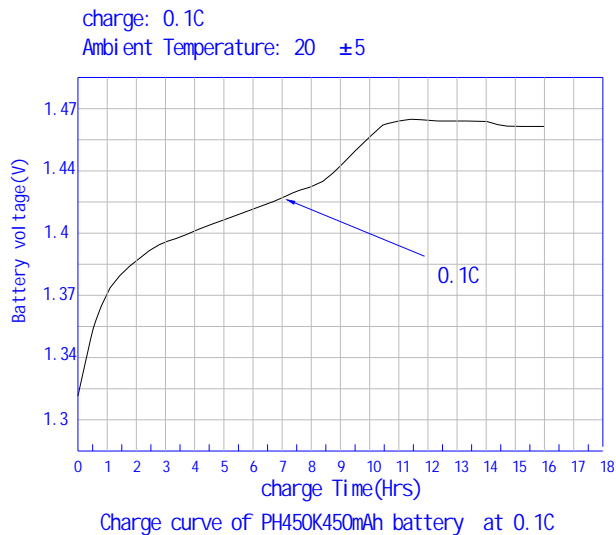
- Voltmeters and ammeters to be used in test shall be of grade 0.5 over

Test Item		Condition	Specification
1. Charge	standard	Charge at $0.1C_5$ for 16 hours	
	quick	Charge at $0.2C_5$ for 7 hours	
2. Standard Discharge		Discharge At $0.2C_5$ to 1.0V/cell	
3. Discharge Cut-off Voltage			1.0V
4. Capacity	Nominal	Standard Charge/Discharge	450mAh
	Typical	Standard Charge/Discharge	460mAh
5. Cycle life		Standard by IEC	Capacity Retention 65% After 500 cycles
6. Self-Discharge		The charged battery is stored for 28 days at 20 ± 5 . And the discharge time is measured at standard discharge	180minutes
7. High Temperature Test		Store at 50 for 2 hours then at $0.2C$ Discharge, first, charge at $0.1C$ for 16h at 20 ± 5 .	270minutes
8. Low Temperature Test		Store at 0 for 2 hours then at $0.2C$ Discharge, charge at $0.1C$ 16h at 20 ± 5 first.	No leakage
9. Short Circuit Test		Short circuit after fully charge	No explode
10. Drop Test		Free fall on the concrete from 1 meter using to 3 axis after fully charged	No leakage No short-circuit No crack of sleeve

6、 Physical:



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 explosion.

8.2 Do not discharge battery to the condition of lower voltage than 1.0V. Overdischarge may decrease the cycle life and may cause battery deformation, leak or explosion.