Technical Specification
For
ZINC CARBON Battery

Model: PP-CZ-AAA
(R03)

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1. Scope

This specification defines the technical requirements for PP-CZ-AAA ZINC CARBON Battery.

Cross References:

IEC	ANSI	JIS	GB
R03	AAA	SUM4	R03

2. Purpose

To assure that any PP-CZ-AAA battery manufactured or procured by GPB will meet or exceed our customers' expectations

3. Reference Document

IEC 60086-1:2000 ……. Primary Batteries-Part1 : General

IEC 60086-2:2000 ……. Primary Batteries-Part2 : Physical and Electrical Specification

GB/T 7112-1998 ……. ZINC CARBON Dry Batteries of R03, R1, R6 and R20; Alkaline ZINC CARBON Dry Batteries of LR03, LR1, LR6, LR14 and LR20.

4. Chemical System

ZINC CARBON (Zinc Chloride Electrolyte),

Mercury: Less than 1 ppm.

5. Nominal Voltage : 1.5 Volt

6. Weight : Approximate 9.0g

7. Jacket : PVC

8. Nominal Capacity : 160mAh (Conditions: 3.9Ωdischarge 24hours per day at 20±2℃, end point voltage 0.9v)

9. Electrical Characteristics :

	Off-load Voltage	On-load Voltage	Short Circuit Current	Acceptance Standard
Initial within 30 days	1.60V	1.45V	3.5	GB2828 commonly Ⅰ sampling AQL=0.4
After 12 months	1.50V	1.40V	2.5	
Conditions: 3.9Ω ±0.5% load resistance, measuring time 0.3 seconds, temperature at 20±2℃, the hairspring type ampere meter with ±0.5% accuracy (0.5 level) shall be used.				

10. Service Time : (Condition: test temp. 20±2℃, tested within 30 days after delivery)

Discharge Condition				Average Minimum Discharge Time	
Discharge Load	Daily Discharge Time	End Point Voltage	IEC Standard	Initial within 30 days	After 12mth at 20±2℃
75Ω	4h	0.9V	20h	24h	22h
5.1Ω	4m/h-8h/d	0.9V	45min	86min	78min
10Ω	1h	0.9V	1.4h	2.5h	2.3h
3.6Ω	15sec/min	0.9V	120cycles	190cycles	168cycles
3.9Ω	24h	0.9V	/	36m	/
Satisfaction Standard : 9 pieces of battery will be tested for each discharging standard. The result of the average discharging time from each discharging standard shall be equal to or more than the average minimum time requirement.					

11. Electrolyte Leakage Proof Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Over-discharge characteristics	3.9Ω continuous discharge at temp. 20±2℃, Relative Humidity:60±15%RH	E.P.V. ＝0.35V	There shall be no deformation exceeding the specified dimensions, nor leakage recognized by human eye.	N=9 Ac=0 Re=1
Storage characteristics	At temp. 45±2℃, Relative Humidity: Less than 65% RH	90 days		N=40 Ac=1 Re=2
	At room temp.	12 months		

12. Safety Characteristics

Item	Condition	Period	Characteristics	Acceptance Standard
Short circuit characteristics	Temp.: 20±2℃	24h.	There shall be no explosion * of battery	N=5 Ac=0 Re=1
Abusive characteristics	At temp. 20±2℃, short circuit 4 pieces of battery in series, one of the 4 battery has to be connected with its polarity reversed.	24h.		N=20 Ac=0 Re=1

* An instantaneous release wherein solid matter from any part of the battery is propelled to a distance greater than 25 cm away from the battery.

13. Caution for Use

(1) Since the battery is not manufactured for recharging, there are risks of electrolyte leakage or causing damage to the device if the battery is charged. (2) The battery shall be installed with its "＋"and "－" in correct position.

(3) Short-circuiting, heating, disposing of into fire and disassembling the battery are prohibited.

(4) Avoid using old and new batteries together.

14. Shelf Life

2 years after delivery under proper storage condition.

15. Discharge Curves

a. 3.9Ω-24h/d 10Ω-1h/d -- (**Page 3**)

b. 75Ω-4h/d 5.1Ω-4m/h-8h/d -- (**Page 4**)

16. Expiry Period Marking:

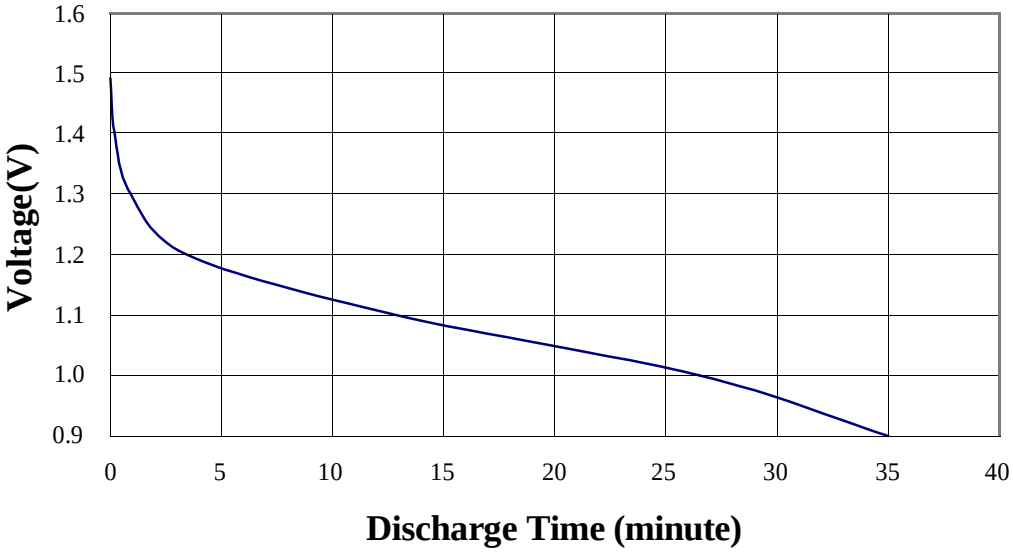
a. Production date and shelf life 2 years marked on the finished cell.

b. For private, can mark according to customer's requirements.

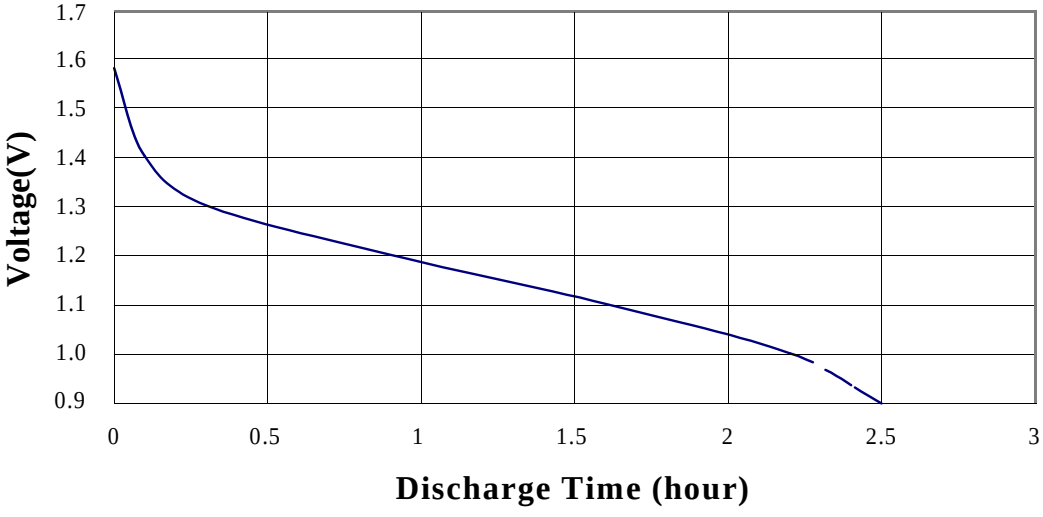
17. Battery Dimension (mm) -- Page 5

18. Battery Structure -- Page 5

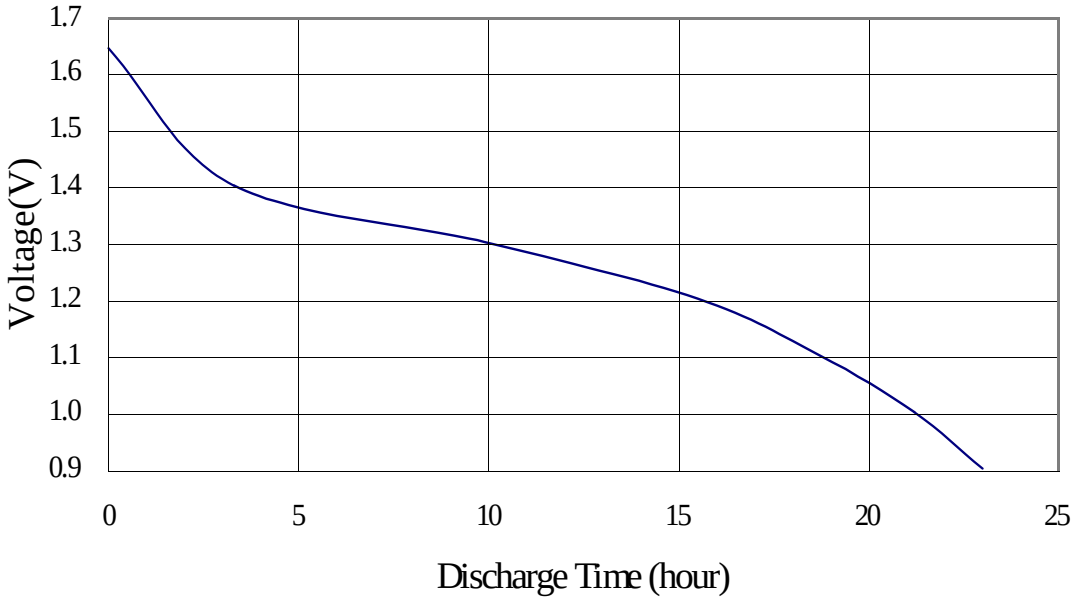
3.9Ω Continuous Discharge Curve



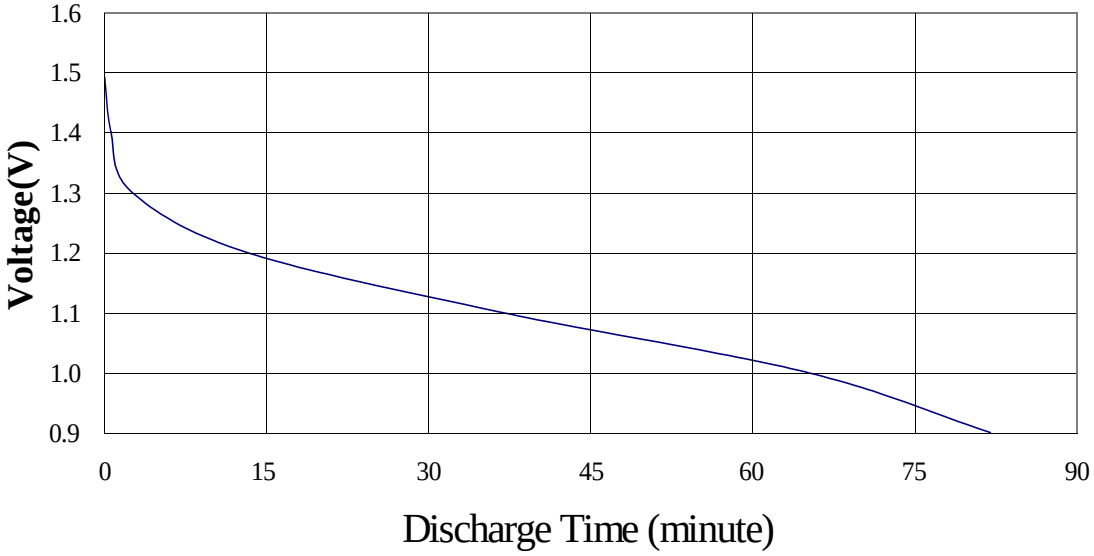
10Ω 1hour/day Discharge Curve



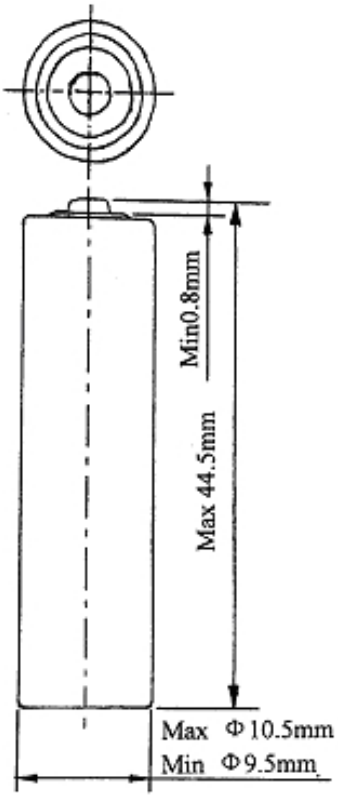
75Ω 4hour/day Discharge Curve

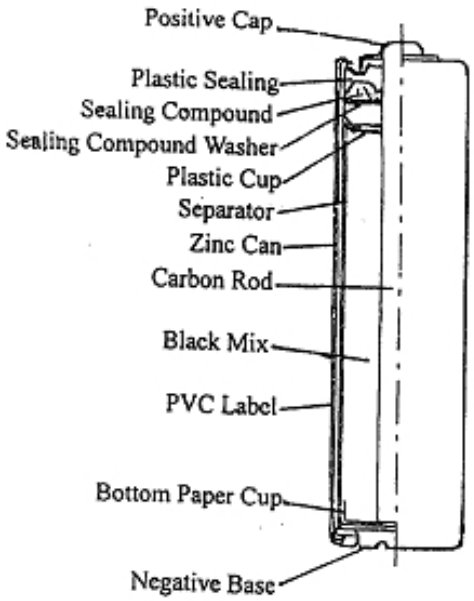


5.1Ω 4m/h-8h/d Discharge Curve



BATTERY DIMENSION





BATTERY STRUCTURE