

GP Batteries

Product Specifications

Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 1 of 7

Specifications for GN24A 1.5V LR03 AAA size

Alkaline Battery

Revision History

Revision No.	Justification	Issue Date
0	New released	Oct 27, 2009
1	Revised Section 6 & 7 note 1	Sep 14, 2011.
2	Revised Section 4, 5, 6 & drawing 1	Jun 8, 2020
3	Revised Section 4 & 5	Apr 14,2022
4	Revised Section 4.2	Jul 04, 2022

GP Batteries

Product Specifications

Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 2 of 7

1. APPLICABILITY

This specification is applicable to GP Super Alkaline Cell, GN24A(No mercury added).

2. GENERAL

- 2.1 Type designation : LR03 (IEC/JIS), 24A (ANSI)
- 2.2 Nominal voltage : 1.5V

- 2.3 Shape and dimension : Refer to Drawing 1.
- 2.4 Typical weight : 11.5g

- 2.5 Warranty period : 36 months
- 2.6 Jacket : Foil jacket

3. APPEARANCE

There shall be no dirt, scratch or deformation detrimental to practical service in appearance.

4. Electrical Characteristics

Unless otherwise stated, all measurements are to be performed at a **Standard Environment** of

20 ± 2°C
55 ± 20% RH.

All samples are normalized for 8 hours at least at the above environment prior to measurement.
The digital voltmeter (DCM) is with the precision of 1mV (internal resistance not less than 1 Megohm).
The load resistance of the total circuit is accurate within ±0.5% of the specified value.

4.1 Open circuit voltage and closed circuit voltage(Load resistance 3.9Ω, 0.3S)

/		OCV(V)	CCV(V)	S.S.(A) (reference)
Initial	Min	1.57	1.40	6.0
	Normal	1.60	1.45	8.0
Stored 1 year	Min	1.55	1.37	4.5
	Normal	1.57	1.40	6.0

GP Batteries

Product Specifications

Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 3 of 7

4.2 Service Life

Load	20Ω	5.1Ω	5.1Ω	24Ω	50mA	
Test mode	24h/d	1h/d	4m/h 8h/d	15s/m 8h/d	1h/12h 24h/d	
End voltage	0.9V	0.8V	0.9V	1.0V	0.9V	
Unit	h	m	m	h	h	
Applications	Reference	Toy	Portable lighting	Remote control	Digital audio	
Initial	MAD	17.5	235	220	19.8	21.3
	Normal	18.5	260	240	21.0	22.8
Stored 1 year	MAD	16.4	220	200	19.5	19.3
	Normal	17.5	240	225	20.5	20.8

S: second M: minute H: hour D: day

Remark: 1)The initial discharge test shall commence within 30 days of manufacture. During this period, the cells shall be stored under 20±2°C, RH 55±20% conditions.

2) Lot release service output test is conducted by 20Ω continuous discharging to 0.9volts

- The batteries shall not leak during the service life test before the end voltage reached.

3) MAD: minimum average duration – out guarantee discharge value.

4) Normal: normal data, it's our normal daily value, batteries discharge value are on this as base to be upper or lower.

5. ELECTROLYTE LEAKAGE

	Test Items	Test Conditions	Requirements
5.1	Arrival at warehouse	Within two months after shipping	There shall be no leakage observed with naked eye and no bulging or deformation of batteries in excess of dimensions on shown in the Drawing 1
5.2	Long term storage	Within storing for 12 months at 20 ±15°C, 55±20%RH	
5.3	High Temperature	Store 20 days under 60±2°C, then store 4-24h under standard environment	
5.4	Over-discharge	20±2°C & 55±20%RH, 20Ω continuous discharge 48h	

GP Batteries

Product Specifications

Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 4 of 7

6. QUALITY ASSURANCE

DESCRIPTION	SAMPLING PLAN
Battery dimensions	0.65% (Note 5)
Appearance	1.0% (Note 5)
Off load voltage	0.65% (Note 5)
On load voltage	1.0% (Note 5)
Service output	Note 1 (Note 5)
Leakage 6.1	0.65% (Note 2 & 5)
6.2	Note 3
6.3	Note 4
6.4	Note 4

Note 1 : Acceptance / rejection in accordance with IEC publication 60086-1 (2011), Sub-clause 5.3.

- 1) Test nine batteries.
- 2) Calculate the average without the exclusion of any result.
- 3) If this average is equal to or greater than the specified figure and no more than one battery has a service output of less than 80% of the specified figure, the batteries are considered to conform for service output.
- 4) If this average is less than the specified figure and/or more than one battery has a service output of less than 80% of the specified figure, repeat the test on another sample of nine batteries and calculate the average as previously.
- 5) If the average of this second test is equal to or greater than the specified figure and no more than one battery has a service output of less than 80% of the specified figure, the batteries are considered to conform for service output.
- 6) If the average of second test is less than the specified figure and/or more than one battery has a service output of less than 80% of the specified figure, the batteries are considered not to conform and no further testing is permitted.

Note 2: Leakage on arrival at warehouse is within two months after shipping.

Note 3: Sample size : n=20, Judgement : Ac=1 Re=2

Note 4: Sample size :n=20, Judgement :Ac=0, Re=1

Note 5: AQL General Inspection level II, single sampling plan.

GP Batteries

Product Specifications

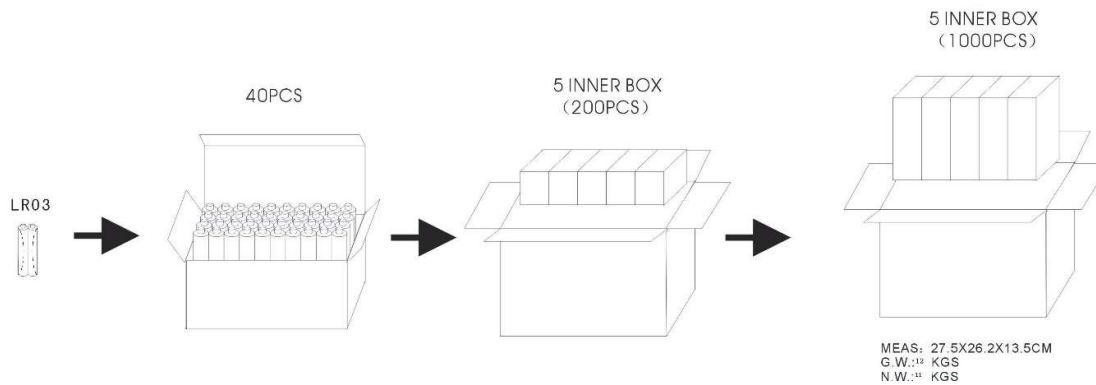
Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 5 of 7

7. NORMAL PACKAGING (REFERENCE ONLY)



*Special packaging shall be a form agreed by both parties.

GP Batteries

Product Specifications

Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 6 of 7

Precaution & Handling

1. Do not attempt to take batteries apart or subject them to pressure or impact. Heat may be generated or fire may result. The alkaline electrolyte is harmful to eyes and skin, and it may damage clothing upon contact.
2. Keep away from children. If swallowed, contact a physician at once.
3. Do not mix GP batteries with other battery brands or batteries of a different chemistry such as alkaline and zinc carbon.
4. Do not short circuit batteries, permanent damage to batteries may result.
5. Do not incinerate or mutilate batteries, may burst or release toxic material.
6. Do not solder directly to cells or batteries.
7. Store batteries in a cool dry place.
8. If find any noise, excessive temperature or leakage from a battery, please stop its use.
9. When not using a battery, disconnect it from the device.
10. Do not mix new batteries in use with semi-used batteries.
11. When find battery power down during use, please switch off the device and take batteries out.
12. Never put a battery into water or seawater.
13. Do not recharge batteries.

Storage

1. Store in a cool, dry place before use.
2. Do not keep batteries at temperature above 30°C.
3. Do not keep batteries at relative humidity above 75%.

GP Batteries

Product Specifications

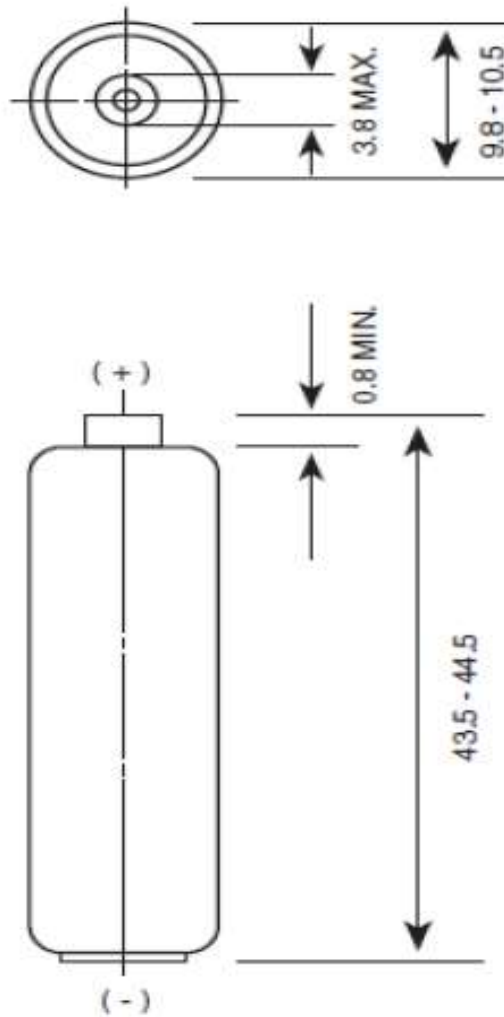
Model No.:GN24A

Document Number: GNA004N

Revision:04

Page 7 of 7

Drawing 1



Unit: mm