



Alkaline Zinc-Manganese Dry Battery

Specification

Model: 6LR61 9V

Drafted	Checked	Approved
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Customer Confirmation	Corporate Name	
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Note: If manufacturer want to modify the product technology specification, we won't inform you additionally.



1 Scope

This specification defines the technical requirements for 6LR61 Alkaline cells distributed by HJBP power. If not otherwise specified, the technical requirements and dimensions for cells should meet or exceed the requirements of GB/T8897.1(2)(5)-2013, IEC/EN60086-1(2)(5):2011.

2 Reference documents

GB8897.1-2013(IEC/EN60086-1:2011,MOD) Primary batteries-Part 1:General

GB8897.2-2013(IEC/EN60086-2:2011,MOD) Primary batteries-Part 2:Physical and technological specifications

GB8897.5-2013(IEC/EN60086-5:2011,IDT)Primary batteries-Part 5:Safety of batteries with aqueous electrolyte

The battery meets the standard of EU battery directive 2006/66/EC.

3 Chemical systems, voltages and designation

3.1 Chemical systems:

Alkaline manganese battery

Zinc-Manganese dioxide (Alkali metal hydroxide)

Chemical System: Zn/KOH-H₂O/MnO₂

3.2 Nominal voltage: 9.0V

3.3 Designation

IEC&GB(China): 6LR61, 9V

ANSI Number: 6LR61;

JIS Number:

Brand : HJBP, NX, OEM,

Jacket: Foil Label

Heavy Metal Contents

Metal name	Hg	Cd	Pb
Limited contents	<1 ppm	<10 ppm	<10 ppm
Contents	without	without	without

4 Battery Weight and Service output

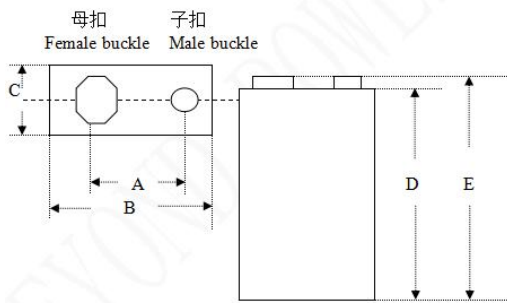
4.1 Battery Weight: 43.0~45.0g(Average)

4.2 Service output: 600mAh(S.T. 25mA constant-current discharge to 4.8 V)

(Test conditions: 20±2°C,RH60±15%,270Ω,24h/d,EPV=5.4V),EPV(end-pointed voltage)

5 Battery Dimensions

The batteries meet dimensions of the attached drawing



Model	6LR61
Measure No.	Size (Unit:mm)
A	12.45-12.95
B	24.5-26.5
C	15.5-17.5
D	46.4max
E	46.5-48.5

6 Voltage and Short current

Item	OCV(V)	CCV(V)	SCC (A)	Sample voltage
Initial (less 3 months)	$9.48 \leq \text{OCV} \leq 9.90$	≥ 8.70	≥ 5.0	GB/T2828.1-2012, One sampling AQL=1.0 MIL-STD-105E, Class II, Double Sampling, AQL=0.4
12 Months Storage	≥ 9.40	≥ 8.50	≥ 3.0	

O.C.V measurement: The inner resistance of Voltage Metre is above 1MΩ.

C.C.V measurement: After 0.3 ± 0.01 sec by R:270Ω.

S.C.C. measurement: $\pm 0.5\%$

7 Service output

Standard	Discharge conditions			Requirement of IEC/EN60086-2:2011 GB8897.2-2013	MAD Delayed discharge performance	
	Load	Discharge method	EPV		Initial	After 12months
GB	180 Ω	1h/d	4.8V		≥ 900 min	≥ 800 min
IEC	180 Ω	24h/d	4.8V		≥ 900 min	≥ 800 min
EN	270 Ω	1h/d	5.4V		≥ 21.5 h	≥ 20.5 h
REF	270 Ω	24h/d	5.4V		≥ 22 h	≥ 21 h
	620 Ω	2h/d	5.4V		≥ 51 h	≥ 48 h

Initial: 60 days after production

Test condition: $20^\circ\text{C} \pm 2^\circ\text{C}$ and $60 \pm 15\% \text{RH}$



8 Leakage Resistance

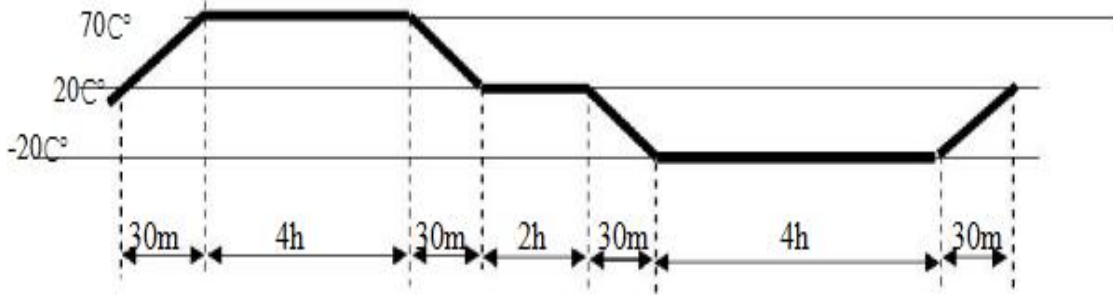
Item	Test conditions	Sample quantity	Requirements	Acceptance
Feature of over-discharge	Temperature:20°C±2°C Humidity:65±20RH on-load:180Ω, 3.6V, Uninterrupted discharge for 3.6V	N=9pcs	Deformation is less than 0.2mm and no visual leakage	N=50, AC=0, Re=1
feature of storage	Temperature 60°C±2°C Humidity: ≤90%RH, ≥30%RH, ≥30 days	N=20pcs		N=50,AC=1, Re=2
Acute short circuit	In the circuit connection resistance should be no more than 0.1 Ω, 24h	N=20pcs	Non explosive	N=10,AC=0, Re=0

9 Safety Requirement

Item	Test conditions	Sample quantity	Requirements IEC/EN60086-5:2011 GB8897.5-2013	Acceptance
Partial use	Stored at 45°C±2°C for 30days after undischarged batteries were test discharged 3.9Ω 24h/d EPV=1.0V	N=5pcs	No leakage, no explosion	Ac=0,Re=1
Thermal shock	See the following note 1. Total 10 cycles	N=5pcs	No explosion	Ac=0,Re=1
Incorrect installation	Place three undischarged and unconditioned batteries in a series with one test sample battery reversed, Complete the circuit until vent activation or until the temperature of the reversed battery returns to ambient.	N=5pcs	No explosion	Ac=0,Re=1
Free fall	Drop each undischarged battery two times, oriented in each of three mutually perpendicular face(six total) from a height 1 meter, onto a concrete surface, see the note 2. 1,6,2,32,1h.	N=5pcs	No explosion	Ac=0,Re=1
Over discharge	Discharge one test sample battery(C1) with 43Ω resistance load until EPV is 3.6V, Connect three undischarged batteries and the sample battery in series with a 7.5Ω resistance load(R1) as shown in note 3, Maintain the circuit until the CCV of the series string reaches 2.4V.	N=5pcs	No explosion	Ac=0,Re=1

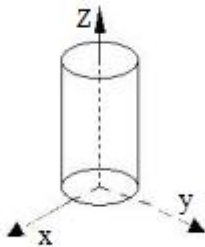


Note1: Thermal shock-



Note 2: Free fall

Note 3: Over discharge



10 Inspection rules

Deliver inspection: Depending on GB/T2828.1-2012

Item	Test	Item	IL	AQL
1	Dimension	5	S-2	0.4
2	Appearance	--	II	1.0
3	Discharge capacity	7	--	--
4	Open-circuit voltage	6	II	1.0

Routine inspection: Depending on GB2829 and QB/T2389

11 Inspection for service output :

11.1 9 samples shall be tested for service output.

11.2 If the average value is equal to or more than the value of table 1, and if the number of batteries showing a value less than 80% of the value of table 1 is 1 or less. The batteries are considered to conform to the requirement.

11.3 If the average value is less than the value of table 1, or if the number of batteries showing a value less than 80% is 2 or more, the test shall be repeated with other 9 pieces. At the second test, if the average value is equal to or more than the value of table 1, and if the number of batteries showing a value less than 80% of the value of table 1 is 1 or less, these batteries are considered to conform to the requirement.

11.4 At above second test, if the average value is less than the value of table 1, or if the number of batteries showing a value less than 80% of the value of table 1 is 2 or more, the batteries are considered not to conform to the requirement. third test shall not be performed.



12 Instructions for use

- 12.1 Always select correct size and grade of battery most suitable for intended use.
- 12.2 Replace all batteries of a set at the same time.
- 12.3 Clean the battery contacts and also those of the equipment prior to battery installation.
- 12.4 Ensure that batteries are installed correctly with regard polarity(+ and -).
- 12.5 Remove batteries from equipment which is not be used for an extend period of time.
- 12.6 Remove exhausted batteries promptly.

13 Display and storage

- 13.1 Batteries shall be stored in well-ventilated dry and cool conditions .
- 13.2 Battery cartons should not be piled up in several layers,or should not exceed a specified height.
- 13.3 Batteries should not be exposed to direct sun ray for a long time or placed in areas where they get wet by rain.
- 13.4 Do not mix unpacked batteries so as to avoid mechanical damage and/or short circuit among each other.

14 Storage life

Storage life of batteries are three years long at 20°C±2°C and RH 60±15%.

15 Marks

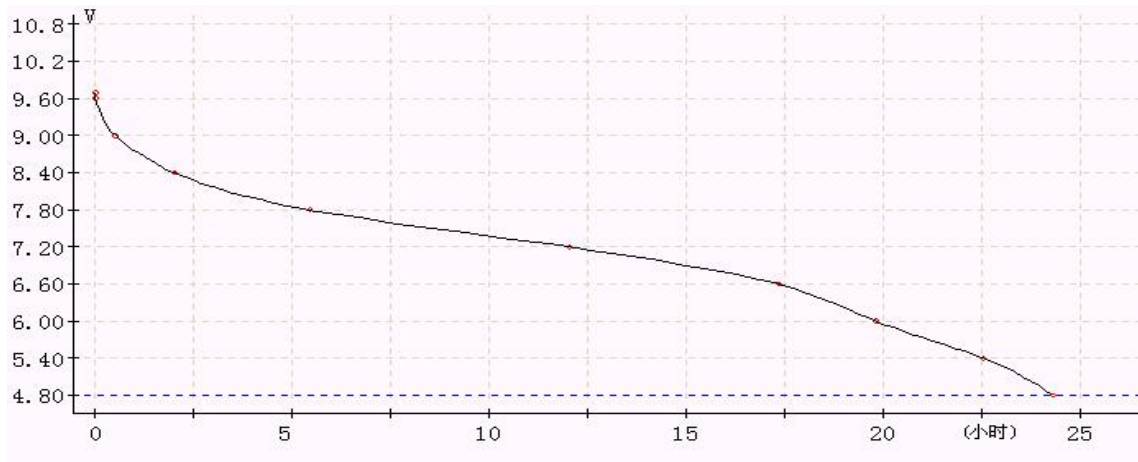
- 15.1 Designation: 6LR61 9V ALKALINE
- 15.2 Year and month of manufacture,which maybe in code, or the expiration of a guarantee period in clear.
- 15.3 Polarity of terminals: “+” “-”
- 15.4 Nominal voltage: 9V
- 15.5 Mercury content: No Mercury & Cadmium Added or 0% Mercury&Cadmium
- 15.6 Name or trade mark, manufacturer or supplier: HJBP/NX/YOUR BRAND/YOUR PRIVATE LABEL
- 15.7 Cautionary advice
Do not dispose of in fire, recharge, put in backwards, mix with used or other battery types-may explode or leak and cause personal injury.
- 15.8 Marking of separate collection.





16 Typical Discharge Characteristics Marks

270ohm,1h/d continuous, EPV=4.8V(discharge condition 20°C±2°C and RH 60±15%) .



Note:

Thank you in advance for your reading.

1. With the progress of product technology, technical parameters, the specification will be updated too, Please contact HJBP power for latest specification.
2. If you need make battery pack or other battery or OEM your brand, your private label, Please contact us.