

TECHNICAL SPECIFICATION
FOR
ALKALINE MANGANESE DIOXIDE BUTTON CELL
TYPE: LR721H

Document No.	TMMQ/GPTD-BPS103	Effective date	2021-6-15
Version	A00	Pages	Total 5 pages
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1. Scope

This specification is applicable to the Alkaline Manganese Dioxide Button Cell LR721H supplied by Guangdong TIANQIU Electronics Technology Co. Ltd.

2. Designations

2.1 Defining

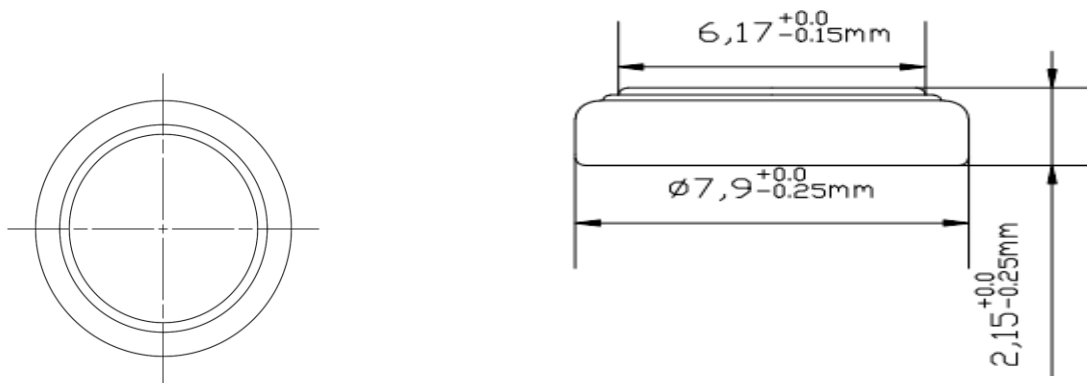
Continuously discharge at $20 \pm 2^\circ\text{C}$ under $6.5\text{k}\Omega$ to 0.9V

3. Designations and Dimensions

3.1 Designations:

LR721H Alkaline Zinc-Manganese Dioxide Button Cell

3.2 Dimensions



4. Technical Specifications

Item	Characteristic
Nominal capacity	17mAh
Nominal voltage	1.5V
End point voltage	0.9V
Storage humidity	$60 \pm 15\%RH$ (no condensate)
Dimensions	maximum height: 2.1mm maximum diameter: $\phi 7.9\text{mm}$
Approximate weight	0.40g (only for reference)

5. Performance

5.1 Test conditions

Unless otherwise specified, the test conditions shall be, as a general rule, at the temperature of $20 \pm 2^\circ\text{C}$ and the relative humidity of $60 \pm 15\%$.

5.2 Electrical characteristics

NO.	Item	Test condition	Requirement
5.2.1	storage characteristics	Sampling plan: MIL-STD-105E, General Inspection Lever II, Single Sampling, AQL=0.4 Remark: Load voltage test method: 47KΩ/0.3S, The initial samples shall be tested within 30 days after delivery	Open Circuit Voltage(V) load voltage(V) Initial: ≥1.52 ≥1.50
5.2.2	Service output	Load resistance:47kΩ; Discharge method:24h/d continuously discharge; End point voltage 1.2V Remark: The initial samples shall be tested within 30 days after delivery.	Initial≥450hrs 12 months @ RT≥405hrs
		Load resistance:6.5kΩ; Discharge method:24h/d continuously discharge; End point voltage 0.9V Remark: The initial samples shall be tested within 30 days after delivery.	Initial≥80hrs 12 months @ RT≥64hrs
5.2.3	Short circuit test	The battery short circuit test in 20±2℃ environment, discharge for 24hrs	No explosion N=5, Ac=0, Re=1.

5.2.2&5.2.3 Acceptance test:

- 1) 9 pieces of battery will be tested for each discharging method.
- 2) The average discharging time from each discharging method shall be equal to or greater than the specified figure, and no more than one battery has a service output less than 80% of the specified figure.
- 3) One retest is allowed to confirm the results if the first test didn't meet the requirements.

5.3 Shelf life

One year after delivery under normal storage conditions. 90% of the initial capacity will be maintained after one year storage.

6. Packing and Marking

Any specific design and packing requirements will be accommodated as required. But as a general, the following markings will be printed, stamped or impressed on the body of the battery:

6.1 Marking

- 1) Designation: LR721H.
- 2) Manufacturer's logo "  " and/or its name "TIANQIU".
- 3) Polarity Marking: " BUTTON CELL + " on the cathode can.

7. Caution for Use

- 1) Since the battery is not designed to be charged, 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 “-” polarity in correct position, otherwise may cause the battery to be charged or over-discharged.
- 3) Short-circuiting, heating, disposing of in fire and disassembling the battery are prohibited.
- 4) Battery cannot be forced discharge, which lead to excess internal gas generation and, may result in bulging, leakage and explosion.
- 5) New and used batteries cannot be mix used at the same time, when replaced batteries, it is recommend to replace all and with the same brand type.
- 6) Exhausted batteries should be removed from compartment to prevent over-discharge, which cause leakage and damage to the device.
- 7) Direct soldering is not allowed, which will damage the battery.
- 8) Keep the battery out of the reach of children to prevent swallow, in case of accident should contact physician at once.
- 9) The battery should not be dismantled and deformed.

caution:

- » If a battery is leakage and materials contact eyes, flush immediately with running water for at least 15 minutes. Consult an ophthalmologist at once.
- » If battery emits an odor, fever, discoloration, deformation or any abnormal phenomena appeared in the process of use/storage, removed the battery immediately from the device and dispose of the battery.

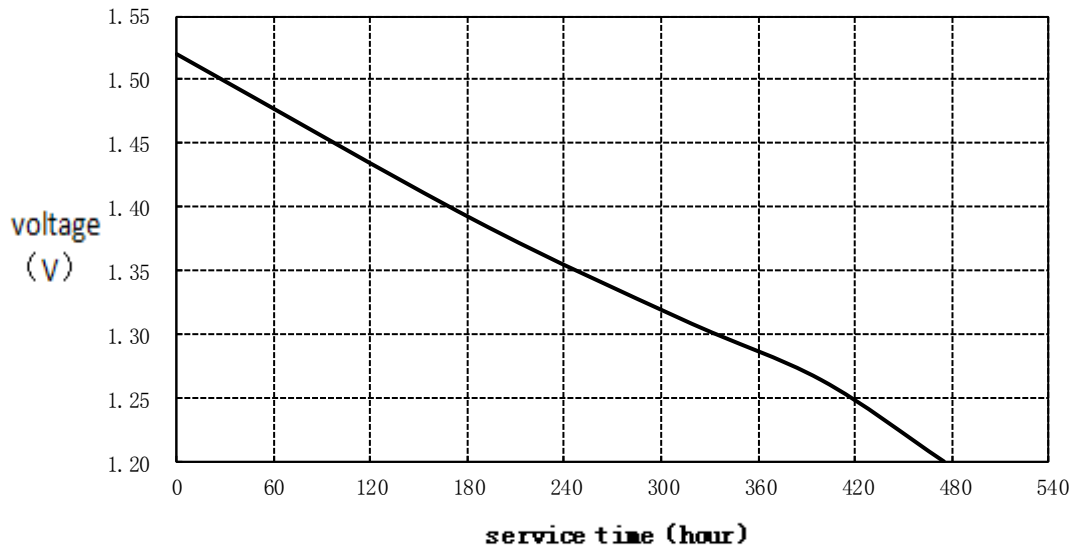
8. Referenced Standards

IEC 60086-1:2015 –Primary Batteries –Part 1: General

IEC 60086-2:2015 –Primary Batteries –Part 2: Physical and electrical specifications

IEC 60086-3:2016 –Primary Batteries –Part 3: Watch batteries

IEC 60086-5:2016 –Primary Batteries –Part 5: Safety of batteries with aqueous electrolyte

9. Discharge Curves

Discharge method: 47kΩ, 24hours/day, E.V. 1.2V

Temperature: 20±2°C



Discharge method: 6.5kΩ, 24hours/day, E.V. 0.9V

Temperature: 20±2°C