

TECHNICAL SPECIFICATION FOR MANGANESE DIOXIDE LITHIUM BATTERY TYPE:CR2025

Document No.	TMMQ/GPTD-BPS409	Effective date	2019-11-2
Edition	A00	Pages	Total 7 pages
Compiled		Revision	
Auditing		Approved	

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1. Scope

This specification is applicable to the Manganese Dioxide Lithium Battery CR2025 supplied by Guangdong TIANQIU Electronics Technology Co. Ltd.

2. Designations

2.1Defining

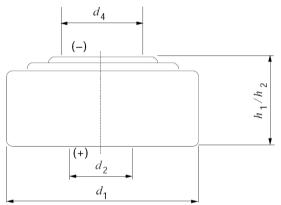
At the temperature of $20\pm2\,^{\circ}\mathrm{C}$, loading at $15k\Omega$ continuous discharge, till the voltage down to 2.0V

3. Designations and Dimensions

3.1 Designations:

Manganese Dioxide Lithium Battery CR2025

3.2 Dimensions



SPEC code	specification standard(mm)		
01 20 00dc	MAX	MIN	
h1/h2	2.5	2.2	
d1	20.0	19.7	
d2	-	-	
d4	-	8.0	

Note: h1

- battery maximum total height
- h2 battery positive and negative minimum distance between contacting surfaces
- d1 Maximum and minimum diameter of the battery
- d2 minimum diameter of the anode contact area
- d4 minimum diameter of the cathode surface

4. Product characteristic

ltem	Characteristic	
Nominal capacity	150mAh /0.45Wh	
Nominal voltage	3.0V	
Discharge Voltage	2.0 V	
Suggested continuously discharge	0.2mA	
Suggested maximum pulse curren	15mA	
Service temperature	-20~60 ℃	
Storage Temperature	0°C∼35°C	
Storage humidity	45% ~ 75 % RH (no condensate)	
Dimensions	maximum height:2.5mm Maximum diameter: Φ20mm	
Average weight	2.3g	



5. Technical requirements

5.1 Test conditions

Unless otherwise specified, the test conditions shall be, as a general rule, at the temperature of $20\pm2^{\circ}$ C and the relative humidity of $60\pm15\%$.

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: 15KΩ/1S, The initial samples shall be tested within 30 days after delivery	Open Circuit Voltage(V) load voltage(V) Initial: 3.10-3.50 3.0-3.40 12 months @ RT: 3.0-3.40 3.0-3.40
5.2.2	Service output	Load resistance:15kΩ; Discharge method:24h/d continuously discharge; End point voltage 2.0V Remark: The initial samples shall be tested within 30 days after delivery.	Initial≥750hrs 12 months @ RT≥720hrs
5.2.3	Temperature characteristics	Load resistance:15kΩ; Discharge method:24 hrs/d continuously discharge; End point voltage 2.0V	0±2°C≥650hrs 60±2°C≥735hrs
5.2.4	Over- discharge	Continuously discharge: $15K\Omega$, End point voltage 1.2V	No leakage, No deformation; N=9, Ac=0, Re=1
5.2.5	High temp. storage	60℃, RH below 70% for 30days	No leakage; N=40, Ac=0, Re=1
5.2.6	Short circuit test	The battery short circuit in 55 °C environment, When the battery shell after the temperature dropped to 55 °C continue to short circuit at least 1 hrs	No explosion No fire ; N=5, Ac=0, Re=1.

5.2.2&5.2.3 acceptance standard:

- 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 Expiration date

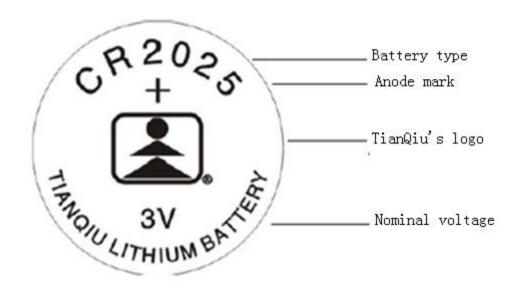
1 year storage in the conditions of GB/T 8897.1-2013, appendix E part



6. Packing and marking

6.1Marking Design

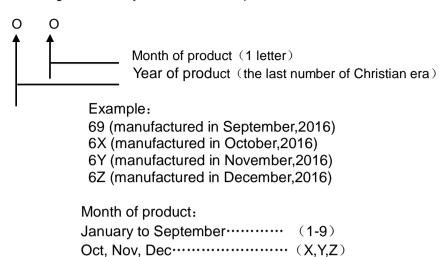
Any specific design and packing requirements will be accommodated as required. But as a general, the following markings will be printed, stamped or impressed on the body of the battery:





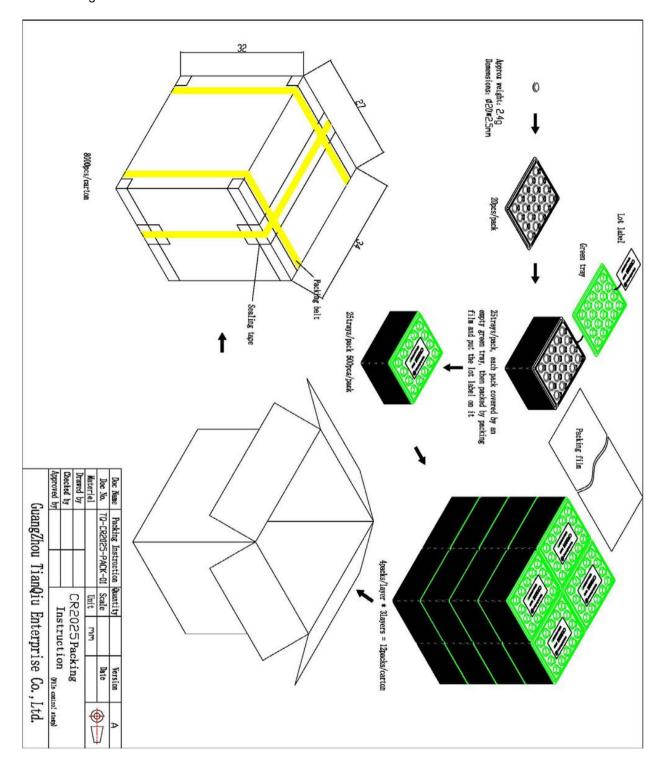
6.2 date code

Manufacturing marks: the year and month of product shall be marked on the negative (-) terminal side.





6.3 Packing Picture





7. Caution for Use

- 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.
- 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.

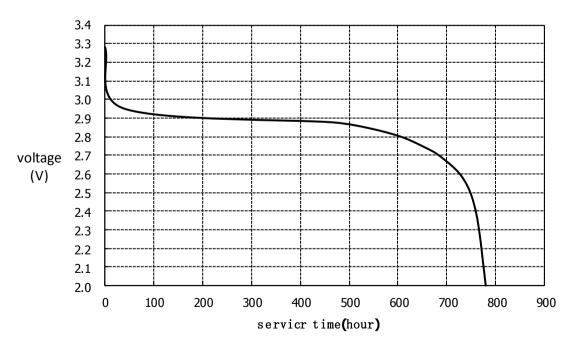
8. Referenced Standards

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

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

IEC 60086-4:2019 - Primary Batteries - Part 4: Safety of lithium batteries

9. Discharge Curves



Discharge method:15KΩ, 24 hours/day EV 2.0V temperature of 20±2 $^{\circ}$ C