TECHNICAL SPECIFICATION
FOR
MANGANESE DIOXIDE LITHIUM BATTERY
TYPE:CR2032

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1. ***Scope***

This specification is applicable to the Manganese Dioxide Lithium Battery CR2032 supplied by Guangdong TIANQIU Electronics Technology Co., Ltd.

2. Designations

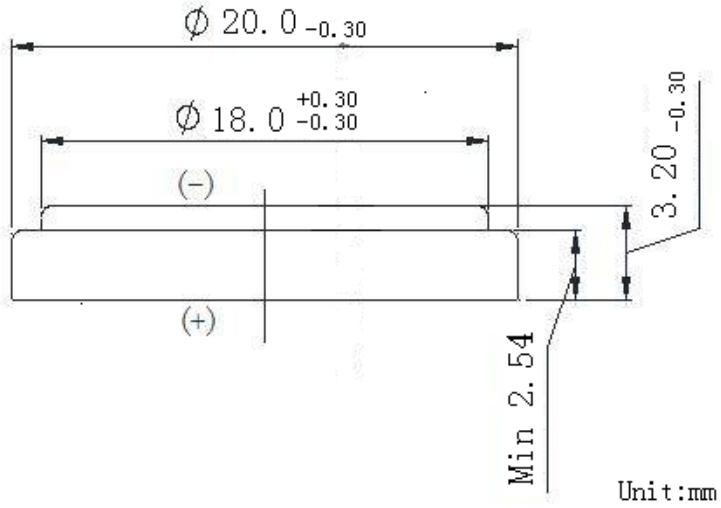
2.1Defining

At the temperature of 20±2℃, loading at15kΩ continuous discharge, till the voltage down to 2.0V

3. *Designations and Dimensions*

3.1 Designations：

Manganese Dioxide Lithium Battery CR2032



4. *Product characteristic*

Item	Characteristic
Nominal capacity	210mAh /0.63Wh
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℃～35℃
Storage humidity	45% ~ 75 % RH (no condensate)
Dimensions	maximum height:3.2mm Maximum diameter: Φ20mm

Average weight	Appx.2.9g (only for reference)

5. ***Technical requirements***

5.1 Test conditions

Unless otherwise specified, the test conditions shall be, as a general rule, at the temperature of 20±2℃ and the relative humidity of 60±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: 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≥1050hrs 12 months @ RT≥980hrs
5.2.3	Temperature characteristics	Load resistance:15kΩ; Discharge method:24 hrs/d continuously discharge; End point voltage 2.0V Remark: Load voltage test method: 15K Ω /1s, The initial samples shall be tested within 30 days after delivery.	0±2℃≥850hrs 60±2℃≥980hrs
5.2.4	Over-discharge	Continuously discharge: 15KΩ, 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 ℃ environment, When the battery shell after the temperature dropped to 55 ℃ 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.

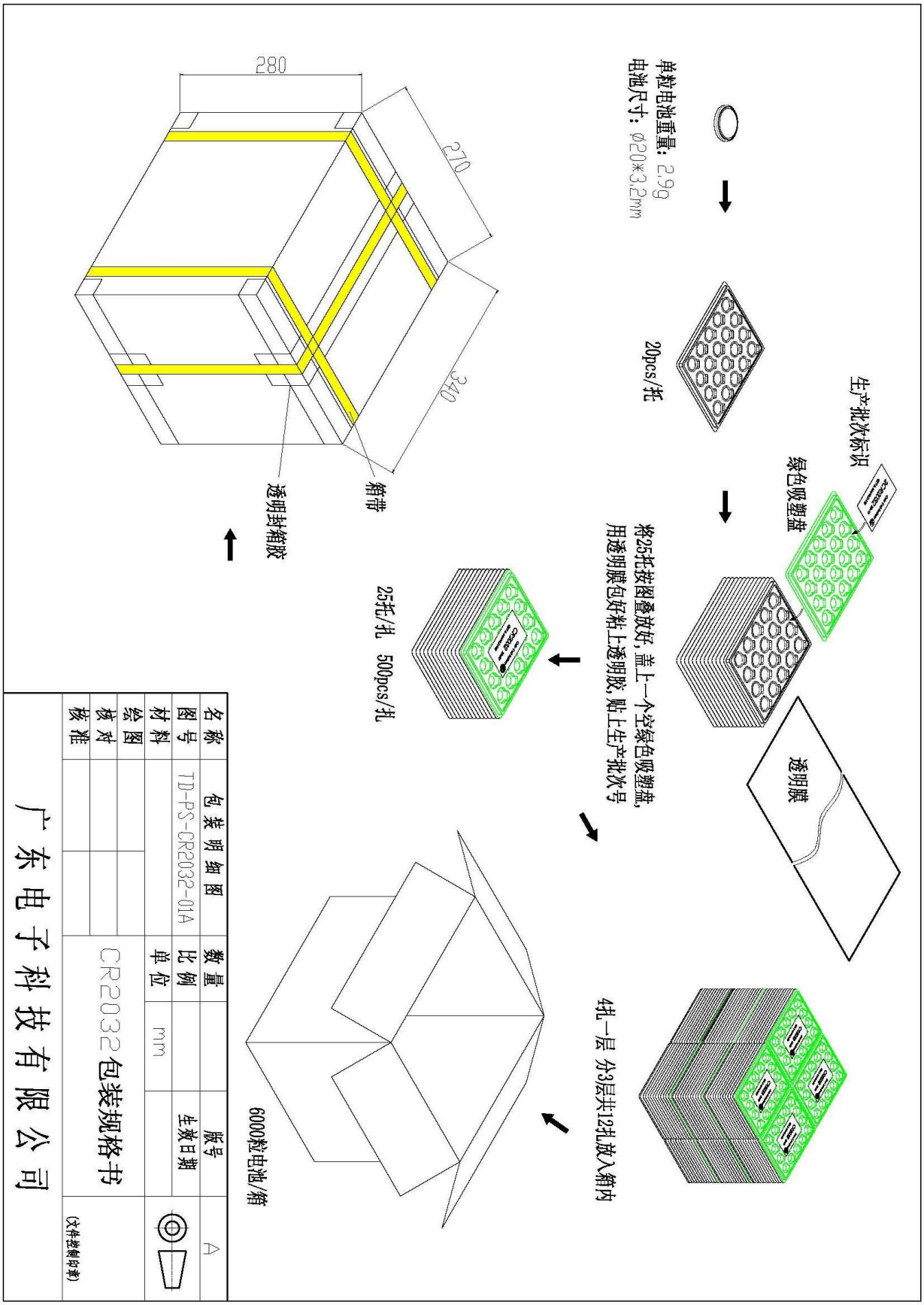
5.3 Expiration date

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

6. *Battery marking*

6.1 Battery Marking Design

6.2 Packing


单粒电池重量：2.9g
电池尺寸：Ø20*3.2mm
20pcs/托
生产批次标识
绿色吸塑盘
透明膜
4扎一层 分3层共12扎放入箱内
6000粒电池/箱
将25托按图叠放好，盖上一个空绿色吸塑盘，
用透明膜包好粘上透明胶，贴上生产批次号
25托/扎 500pcs/扎
280
270
340
箱带
透明封箱胶
广东电子科技有限公司
CR2032包装规格书
名称
包装明细图
图号
TD-PS-CR2032-01A
材料
绘图
核对
核准
数量
比例
单位
mm
版号
A
生效日期

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.

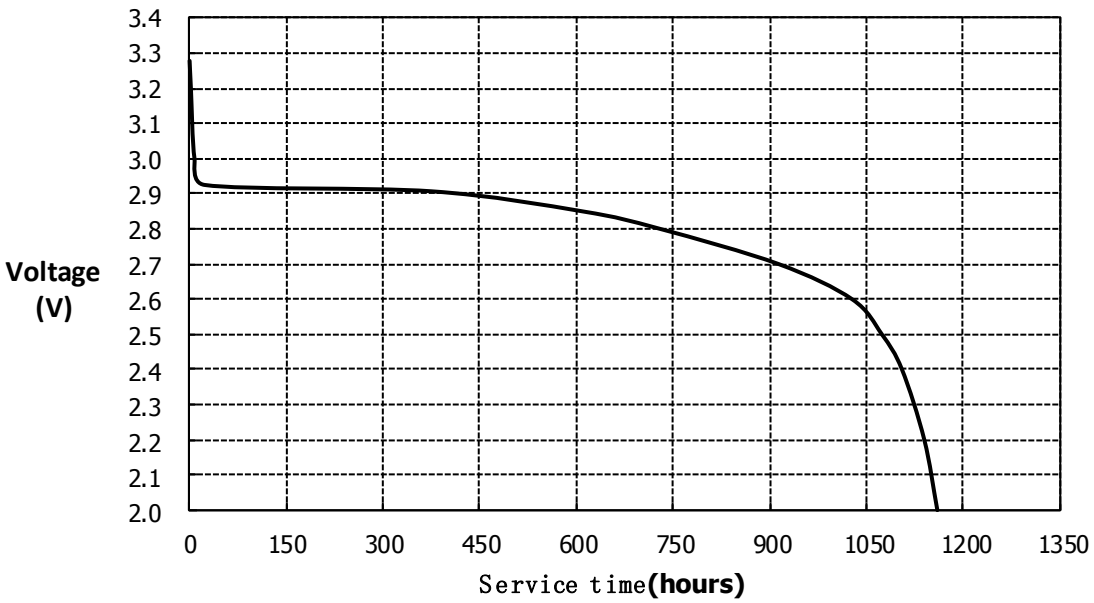
caution:

- 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*

GB/T 8897.1-2013 Primary Batteries –Part 1: General
GB/T 8897.2-2013 Primary Batteries –Part 2: Physical and electrical specifications
GB/T 8897.4 2008 Primary Batteries –Part 4: Safety of lithium batteries

9. *Discharge Curves*



Discharge method:15KΩ, 24 hours/day EV 2.0V
temperature of 20±2℃

10 .Revised

Serial Number 序列号	Change item 修改项目	Change Content 修改内容	修改人 PIC	修改日期 Date