

Specification

规格书

Customer 客户名称	JAMECO ELECTRONICS
Brand 品 牌	Ljcell
Product 产 品	3.0V Lithium button cell battery with wire 带线的 3.0V 扣式锂-二氧化锰电池
Model 型 号	CR2032
Made 制 作	Li wei 李微
Checked 审 批	Liu jun 刘军
Date 日 期	2022-11-11

1. Scope 【范围】

The Specification will be applied to 3V Lithium Button Cell Battery CR2032 with wire, which is manufactured by Shenzhen Ljcell Co., Ltd

本规格书的各种技术参数仅适用于带线 3V 锂锰扣式电池 CR2032, 该电池由深圳市罗珈电子有限公司生产。

2. Specification 【技术参数】

Form 1 表一:

Terms 项目		Unit 单位	Value NO 数值	Condition 条件
Nominal Voltage 公称电压		V	3.0	Off-load 无负载
Nominal Capacity 公称容量		mAH	220	Normal Discharge current 正常放电的情况下
Short circuit current 瞬时短路电流		mA	≥ 250	Time ≤ 0.5 second 时间 ≤ 0.5 秒
Open Voltage 开路电压		V	≥ 3.25	Off-load 无负载
Shelf life 保质期		year	3	Room temperature 室温
Storage temperature 储存温度		$^{\circ}\text{C}$	-10~50	Room temperature 室温
Nominal weight 标准重量		g	3.0	Per battery 每只电池
Discharge time 放电时间	Original value 初始值	Nominal 标准值	1000 h	In the load Ω 15 K, 20 ~ 25 $^{\circ}\text{C}$ temperature, termination voltage of 2.0 V lasts discharge time 在负载 15K Ω 、20~25 $^{\circ}\text{C}$ 的温度、终止电压为 2.0V 的情况下持续放电时间
		Min 最小值	900 h	
	After 1 year in store 经 12 个月贮存后的数值	Nominal 标准值	950 h	
		Min 最小值	850 h	

Form 2 表二:

Storage condition 保存条件	Condition 条件	Character value 特性值	
Discharge time of storage in high temperature 高温贮存后放电时间	Storage in $60 \pm 3^{\circ}\text{C}$, after 20 days, in $20 \sim 25^{\circ}\text{C}$ 15 K Ω load continuous discharge to the termination voltage 2.0 V $60 \pm 3^{\circ}\text{C}$ 贮存 20 天后在 $20 \sim 25^{\circ}\text{C}$ 下以 15K Ω 负载连续放电至终止电压 2.0V	Nominal 标准值	935 h
		Min 最小值	748 h
Self discharge 自放电率	Storage 12 months in normal temperature 常温常湿条件下贮存 12 个月	Less than 5% 不大于 5%	

3. Product Specification and Test method 【产品规格和测试方法】

Unless otherwise specified, all the tests were in the following normal conditions: the environment temperature: $20 \sim 25^{\circ}\text{C}$ environment humidity: $65 \pm 20\%$. See table 3

除非特别说明,所有的测试都在下列常温条件下进行: 环境温度: $20 \sim 25^{\circ}\text{C}$ 环境湿度: $65 \pm 20\%$ 。见表三

4. Notes 【使用注意事项】

4.1 Install and use of battery in the correct way , to prevent short and equipped wrong are aligned.

4.2 check the battery extreme and the instruments and its contact before install to ensure clean and conductive, USES the instruments can't cause a short circuit.

4.3 don't use new batteries and used batteries in same time ,

Over discharge different type, level and varieties of battery don't mix, to avoid increasing the possibility of leakage.

4.4 Don't heat, charge or use via other ays after the batteries be used, in order to avoid being explosion, damaged and leakage.

4.5 Don't put battery into the fire , do not remove battery, to avoid produce risk.

4.6 keep the tiny battery properly in case by children swallow

4.7 Must pay attention to the provisions of the battery storage period.

- 4.1 正确安装和使用电池,防止短路和装错正负极。
 4.2 安装前要检查电池极端和所用器具及其接点,以保证清洁和导电,所用器具不能造成短路。
 4.3 新电池不要与使用过的电池混用,不同牌号、等级和品种的电池不要混用,以免增加漏液的可能性。
 4.4 电池使用后不得加热,充电或其它的手段反复使用,以免发生爆炸、破损和漏液。
 4.5 不得将电池投入火中,也不要拆卸电池,以免发生危险。
 4.6 妥善保管微型电池,以防幼儿误吞。
 4.7 要注意电池的规定贮存期限。

Form 3 表三:

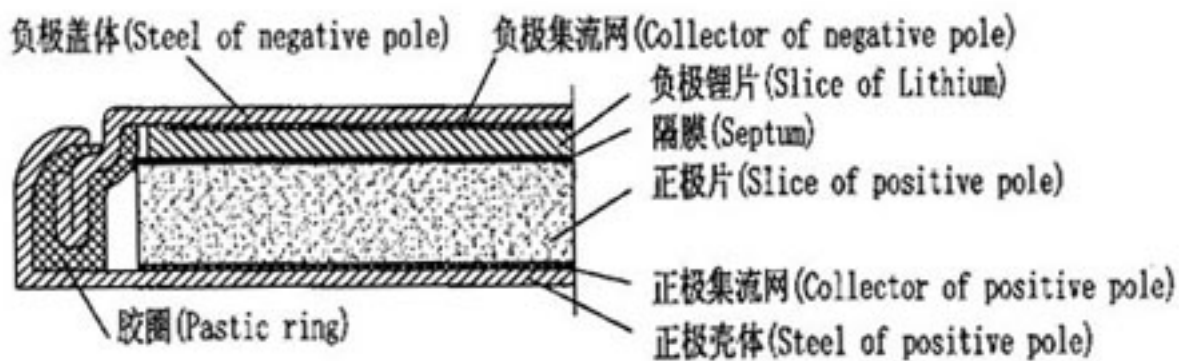
N O 序号	Test term 测试 项目	Test method 测试方法	Standard 标 准	
1	Dimension 外形尺寸	When use accuracy over 0.02mm caliper to text,in order to avoid battery being short-circuit, caliper one end should be put on insulating material. 用精确度大于 0.02mm 的游标卡尺测试时,为防止电池短路,卡尺的一端卡头上应贴上一层绝缘材料	Dimension 直径	20.0(-0.2) mm
			Height 高度	3.2(-0.2) mm
2	Open circuit voltage 开路电压	Multimeter accuracy is not less than 0.25%, Inner-resistance > 1MΩ。 万用表的精确度不低于 0.25%,内阻大于 1MΩ	≥3.25 V	
3	Instantaneous short-circuit	When test it use multimeter, Don't use time over 0.5s/time,to	≥250 mA	

	current 瞬时 短路 电 流	avoid repeating text. The next text should be after half hour. 用万用表测试时，每次时间不超过 0.5 秒，避免重复测试，若需再次测试时，时间间隔应在半小时以上	
4	Facade 外 观	Visual test 目测	Flat,clean ,no rust 外观平整、光洁、无锈迹
5	Discharge capacity 放电容量	The capacity of put the battery lasting over 8 hours at 20-25℃ and 65±20H ,the over-load is 15K Ω，end voltage is 2.0V. 在 20~25℃ 的温度和 65±20% 的湿度的条件下放置 8 小时以上，在负载 15K Ω，终止电压为 2.0V 的情况下持续放电时间时所测容量(新电：生产后三个月内)	≥1000 h
6	Vibration test 振摔测试	Put the standard samples on the vibration machine, open machine and the vibration is 10-15times/min,lastning 1 hour. 将合格样品放在振动机的振台上，启动振动机，振动频率为 10-15 次/分钟，持续振动一小时	Steady 电池性能稳定
7	High resistance to liquid leakage testing 高 温 耐漏液测试	Storage 30days in 45℃ 在 45℃ 的条件下贮存 30 天	Load rate 漏液比率≤1%
8	Discharge leakage resistance test 过 放 电 耐漏液测试	After the end voltage up to 2.0v ,discharge will last five hours 在电池终止电压达到 2.0V 后，持续放电 5 小时	Off-load 无漏液

5. The drawing of 3.0V Li-MnO₂ battery 【3.0V 扣式锂-二氧化锰电池剖面图】
(详见第 3 页)

3.0V扣式锂-锰电池剖面图

Bench Section of 3.0V Lithium Manganese Dioxide Button Cell



6. 【放电图】（详见第 4 页）

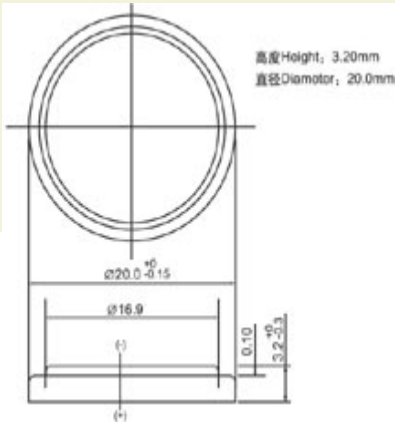
6. 【DISCHARGE CHARACTERISTICS】

■ 规格 Specifications

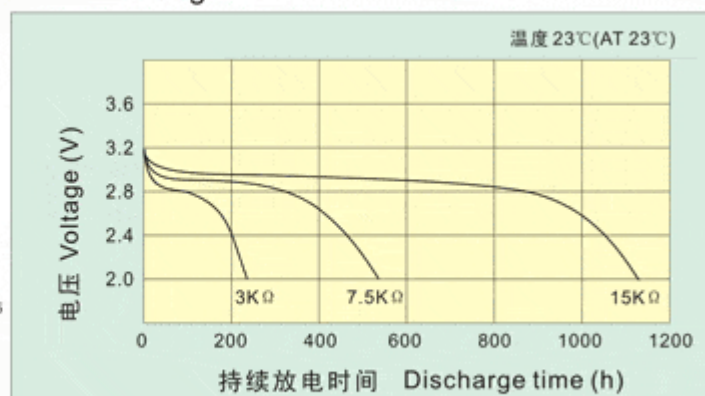
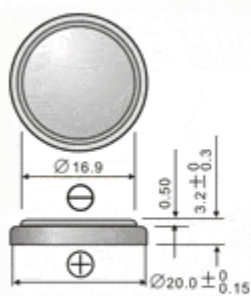
Nominal Voltage 公称电压	3V
Nominal Capacity 公称容量(2.0V 终止)	220mAh
Suggest using current value (standard) 建议使用电流值(标准)	0.2mA
Suggest using current value (interrupt) 建议使用电流值(间断)	15mA
Nominal Weight 标准重量	3.1g
Application:应用领域 • Electronic toys, gifts ,PC 电子玩具、 礼品 PC • Watch, small memory 电子表，小型 存储器 • vest-pocket calculator 袖珍计数器 • All kinds of storage backup power 各种存储器后备电源 • Camera data storage 摄像机数据储存	

■ 外型尺寸 Dimensions

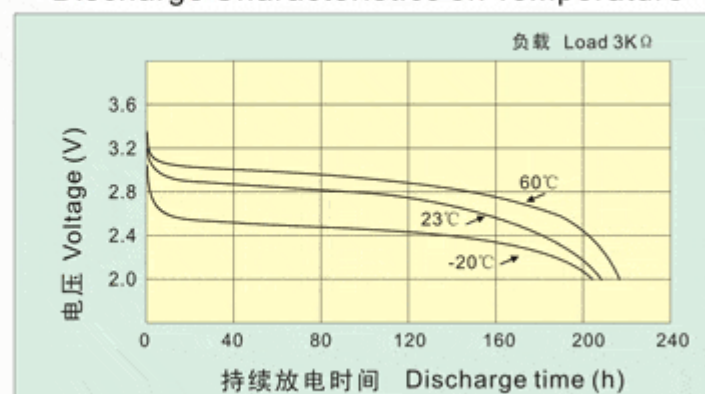
(mm)



负载放电特性 Discharge Characteristics on Load

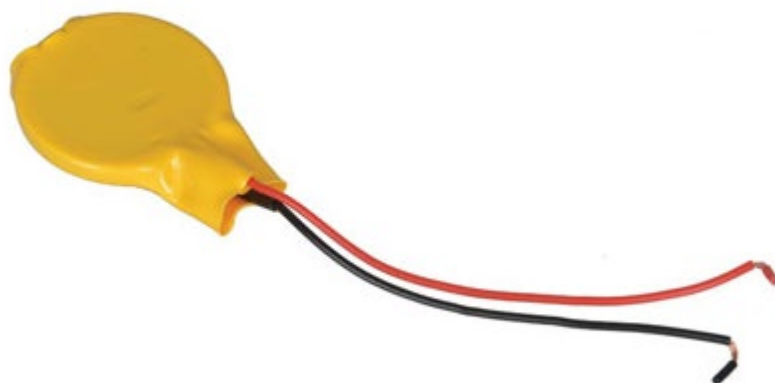


温度放电特性 Discharge Characteristics on Temperature



7. 【产品图】

7. 【Product pictures】



7. 【产品电线参数】

7. 【Product wire parameters】

1. CR2032 battery extension wire length: 60mm.
2. Wire No.: AWG28.
3. Soldering part at the wire end: 5mm (cut the wire at 5mm), so as to ensure that the wire length that can be soldered can reach 5mm after peeling off.
4. A black sleeve shall be added at the bottom of one of the wires.

PVC DATASHEET

1. Scope

This standard is applicable to 85 °C and 105 °C series PVC heat shrinkable sleeve

2. Technical parameters

2.1 shrinkage

Calculation formula: $S = [(l_0 - l) / l_0] \times 100\%$

$$\Delta S = (\max - L_{\min} / l_0) \times 100\%$$

Where: s --- shrinkage, including longitudinal and transverse shrinkage

Δs --- shrinkage tolerance

l_0 --- length or bending diameter before heat shrinkage

L is the length or bending diameter after heat shrinkage

$L_{\max}$ -- the maximum length or bending diameter of the sample after heat shrinkage

$L_{\min}$ --- the minimum length or bending diameter of the sample after heat shrinkage

2.2 electrical properties

Volume resistance coefficient $10^{15} \Omega / \text{cm}^3$

breakdown voltage

thickness	breakdown voltage
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7	Φ4. 0	7. 1+0. 5	0. 09± 0. 015	12±3	7±3	48±5	0. 16	0. 17
8	Φ4. 5	8. 0+0. 5					0. 19	0. 2
9	Φ5. 0	8. 7+0. 4					0. 2	0. 22
		9. 0+0. 4					0. 21	0. 23
		9. 3+0. 4					0. 22	0. 24
10	Φ6. 0	10. 5+0. 5					0. 24	0. 27
		10. 8+0. 5						
		11. 1+0. 5						
11	Φ7. 0	12. 0+1. 0					0. 25	0. 28
12	Φ8. 0	13. 5+0. 5					0. 26	0. 29
		13. 8+0. 5					0. 28	0. 31
		14. 1+0. 5					0. 31	0. 35
							0. 32	0. 36
13	Φ9. 0	15. 0+1. 0	0. 33	0. 37				
14	Φ10	16. 5+0. 5	0. 35	0. 39				
		16. 8+0. 5	0. 47					
		17. 1+0. 5						
15	Φ11	18. 0+1. 0		0. 48				
16	Φ12	20. 0+1. 0	0. 49					
17	Φ12. 5	21. 0+1. 0	0. 52					
18	Φ13	21. 5+1. 0	0. 58					
19	Φ13. 5	22. 5+1. 0	0. 6					
20	Φ14	23. 5+1. 0	0. 62					
21	Φ14. 5	24. 0+1. 0	0. 65					
22	Φ15	24. 5+1. 0	0. 68					
23	Φ16	26. 5+1. 0	0. 7					
		27. 0+0. 5	0. 71					
24	Φ16. 5	27. 0+1. 0	0. 75					
			0. 76					
			0. 77					

25	Φ17	28. 0+1. 0							0. 79		
26	Φ18	29. 0+1. 0	0. 10± 0. 02	0. 12± 0. 02					0. 82	0. 98	
27	Φ19	31. 0+0. 6							0. 87	1. 04	
		31. 4+0. 6							0. 88	1. 06	
28	Φ20	32. 5+1. 0	0. 12±0. 02						1. 11		
29	Φ21	34. 0+1. 0							1. 16		
30	Φ22	35. 5+1. 0							1. 22		
31	Φ23	36. 5+1. 0							1. 28		
32	Φ24	39. 0+1. 0							1. 32		
33	Φ25	41. 0+1. 5							1. 44		
34	Φ25. 4	41. 5+1. 0							1. 45		
35	Φ26	43. 5+1. 5							1. 48		
36	Φ27	45. 0+1. 5							1. 52		
37	Φ28	46. 5+1. 5							1. 58		
38	Φ29	48. 5+1. 5	0. 15±0. 025						2. 07		
39	Φ30	50. 0+1. 5							2. 13		
40	Φ33	52. 0+1. 5							2. 22		
41	Φ34	56. 5+1. 5							2. 42		
42	Φ35	58. 0+1. 5							2. 48		
43	Φ36	59. 5+1. 5							2. 54		
44	Φ38	63. 5+1. 5				2. 71					
45	Φ40	65. 0+2. 0	0. 15± 0. 03	0. 18± 0. 03	15±3	10±3	2. 77	3. 32			
46	Φ41	67. 0+2. 0					2. 86	3. 43			
47	Φ42	69. 0+2. 0					2. 95	3. 54			
48	Φ45	72. 5+2. 0					3. 1	3. 72			
49	Φ46	74. 0+2. 0					3. 2	3. 84			
50	Φ48	77. 5+2. 0					3. 36	4. 03			
51	Φ50	82. 0+2. 0					3. 58	4. 23			
52	Φ55	90. 0+2. 0					3. 88	5. 65			
53	Φ60	97. 0+2. 0	0. 20±0. 035				5. 5				
54	Φ65	106. 0+2. 0					6				
55	Φ70	112. 0+2. 0	0. 20±0. 04				6. 35				
56	Φ75	122. 0+2. 0					6. 92				

57	Φ80	131.0±2.0					7.54
58	Φ85	135.0±2.0					7.76
59	Φ93	143.0±2.0					8.22
60	Φ98	150.0±3.0					8.63
61	Φ103	160.0±3.0					9.15
62	Φ108	170±2.0					9.6
63	Φ109	167.0±3.0					9.51
64	Φ110	175±2.0					10
65	Φ116	178.0±3.0					10.2
66	Φ130	198.0±2.0				48±5	11.3
67	Φ142	218.0±2.0					12.4
68	Φ154	238.0±2.0					13.4
69	Φ161	248.0±2.0					14
70	Φ167	258.0±2.0					14.6
71	Φ180	278.0±2.0					15.7
72	Φ200	314±4.0					17.8
73	Φ210	330±5.0					18.7
74	Φ230	360±5.0				48±5	20.5
75	Φ260	408±5.0					23.2
76	Φ338	530±5.0					30

Note:

1. There are four specifications of Φ 5, Φ 6, Φ 8, and Φ 10, which are divided into three different folding diameters: large, medium and small. The diameter of Φ 16 is divided into big and small.
2. In the specification column, Φ 2.0 ~ Φ 80 is the shell size of the package, and above Φ 85 is the inner diameter of the sizing sleeve.
3. Long conversion value is for reference only. Customers have special specifications, sizes and technical requirements, which can be negotiated by both parties.