

# Coin Cells

## Introduction

Since 1982, when RENATA launched the industrial production of lithium batteries, the range of applications has grown continuously. In addition to the wide spectrum of memory backup power sources, RENATA lithium batteries are used for different applications in the computer and automotive industries, telecommunications, medical industry and in an increasing number of portable devices (measuring equipment, payment systems, toys etc.).

RENATA lithium batteries meet the highest quality standards and offer excellent reliability.

### **Advantages**

- Nominal voltage of 3V, approx. twice the voltage level of alkaline button cells
- Wide operating temperature range depending on battery model
- Low self discharge of less than 1% per year at 23°C
- Best practical capacity/volume ratio
- Superior leakage resistance
- Excellent storage characteristics, up to 10 years storage with minimum deterioration
- Safe products: all Renata and MFR coin cells are UL-recognized products (File No. MH14002)
- Environmental-friendly, do not contain toxic substances
- No air transport restrictions (non hazardous)
- Available in a wide range of solder contact configurations or in combination with our battery holders

# Coin Cells

## Standard bare coin cells

### General characteristics

- Self-discharge: less than 1% per year at 23°C
- Shelf life: up to 10 years at max. 23°C
- Stable voltage during shelf life
- High reliability of operation, including leakage resistance
- Contains no heavy metals



### Dimensions and weights

| Model      | Max. Dimensions (mm) |      |           |          | approx Weight (g) | Part.No.* |
|------------|----------------------|------|-----------|----------|-------------------|-----------|
|            | A                    | B    | C         | D        |                   |           |
| CR1025     | 10.00                | 2.50 | Ref. 6.0  | min 0.08 | 0.6               | 700263    |
| CR1216 MFR | 12.50                | 1.60 | Ref. 10.2 | min 0.05 | 0.7               | 100551    |
| CR1220 MFR | 12.50                | 2.00 | Ref. 10.3 | min 0.10 | 0.8               | 100552    |
| CR1225     | 12.50                | 2.50 | Ref. 9.0  | min 0.08 | 0.9               | 700281    |
| CR1616     | 16.00                | 1.60 | Ref. 12.0 | min 0.02 | 1.1               | 700287    |
| CR1620     | 16.00                | 2.00 | Ref. 12.0 | min 0.06 | 1.2               | 700291    |
| CR1632     | 16.00                | 3.20 | Ref. 12.0 | min 0.08 | 1.8               | 700296    |
| CR2016 MFR | 20.00                | 1.60 | Ref. 18.0 | min 0.05 | 1.7               | 100270    |
| CR2025 MFR | 20.00                | 2.50 | Ref. 17.0 | min 0.05 | 2.5               | 100271    |
| CR2032 MFR | 20.00                | 3.20 | Ref. 17.0 | min 0.05 | 2.8               | 100272    |
| CR2320     | 23.00                | 2.00 | Ref. 18.0 | min 0.06 | 2.7               | 700344    |
| CR2325     | 23.00                | 2.50 | Ref. 19.0 | min 0.08 | 3.0               | 700348    |
| CR2430 MFR | 24.50                | 3.00 | Ref. 20.0 | min 0.08 | 4.3               | 100350    |
| CR2430     | 24.50                | 3.00 | Ref. 20.0 | min 0.08 | 4.1               | 700359    |
| CR2450N    | 24.50                | 5.00 | Ref. 22.3 | min 2.50 | 5.9               | 700377    |
| CR2477N    | 24.50                | 7.70 | Ref. 22.4 | min 5.30 | 8.3               | 700391    |

\*Packaging: Industrial Bulk (IB-Trays)



### Electrical characteristics

| Model      | Nominal capacity (mAh) | Standard discharge current (mA) <sup>1)</sup> | Max. continuous discharge current (mA) <sup>2)</sup> | Operating Temperature (C) <sup>3)</sup> |
|------------|------------------------|---|--|---|
| CR1025     | 30                     | 0.05  | 0.40   | -40/+85°                                |
| CR1216 MFR | 30                     | 0.10  | 1.00   | -30/+70°                                |
| CR1220 MFR | 40                     | 0.10  | 1.00   | -30/+70°                                |
| CR1225     | 48                     | 0.10  | 1.00   | -40/+85°                                |
| CR1616     | 50                     | 0.10  | 1.00   | -40/+85°                                |
| CR1620     | 68                     | 0.10  | 1.00   | -40/+85°                                |
| CR1632     | 125                    | 0.20  | 1.50   | -40/+85°                                |
| CR2016 MFR | 90                     | 0.20  | 3.00   | -30/+70°                                |
| CR2025 MFR | 165                    | 0.30  | 3.00   | -30/+70°                                |
| CR2032 MFR | 225                    | 0.40  | 3.00   | -30/+70°                                |
| CR2320     | 150                    | 0.20  | 3.00   | -40/+85°                                |
| CR2325     | 190                    | 0.30  | 3.00   | -40/+85°                                |
| CR2430 MFR | 300                    | 0.50  | 4.00   | -30/+70°                                |
| CR2430     | 285                    | 0.50  | 4.00   | -40/+85°                                |
| CR2450N    | 540                    | 0.80  | 3.00   | -40/+85°                                |
| CR2477N    | 950                    | 1.00  | 2.50   | -40/+85°                                |

1) Standard discharge current: 100% of nominal capacity is obtained by discharging the cells at this current rates.

2) The maximum current is determined for a yield of 70% of the nominal capacity with a cut-off voltage of 2.0V, at 23°C. For currents exceeding those given above or pulsed current, please contact Renata.

3) In applications where the battery is exposed to temperatures above 70°C, please contact Renata for consultancy.

# Coin Cells

Standard bare coin cells



**CR1025**  Rated capacity: 30 mAh  
Average weight: 0.6 g



Discharge performance at 23°C



Discharge performance at 23°C



Temperature performance Load 47 kΩ



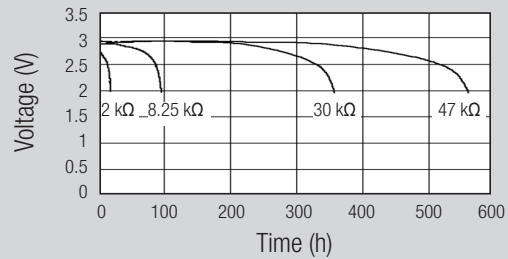
Cell capacity at various loads



**CR1216 MFR**  Rated capacity: 30 mAh  
Average weight: 0.7 g



Discharge performance at 23°C



Discharge performance at 23°C



Temperature performance Load 47 kΩ



Cell capacity at various loads





**CR1220 MFR**  Rated capacity: 40 mAh  
Average weight: 0.8 g

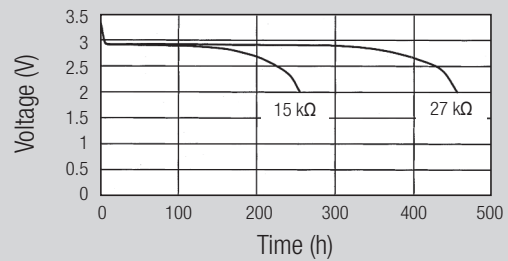
**CR1225**  Rated capacity: 48 mAh  
Average weight: 0.9 g



Discharge performance at 23°C



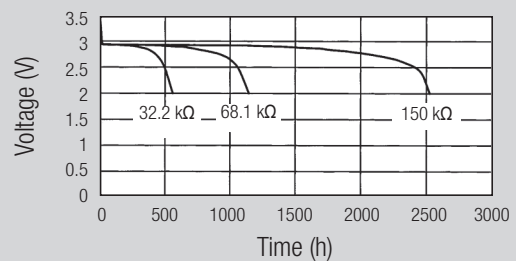
Discharge performance at 23°C



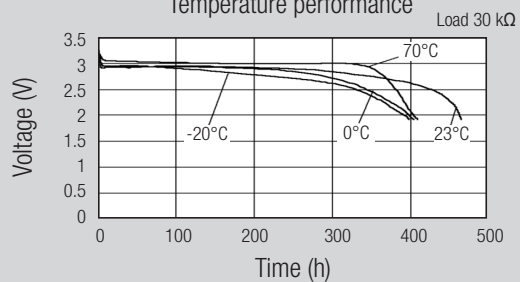
Discharge performance at 23°C



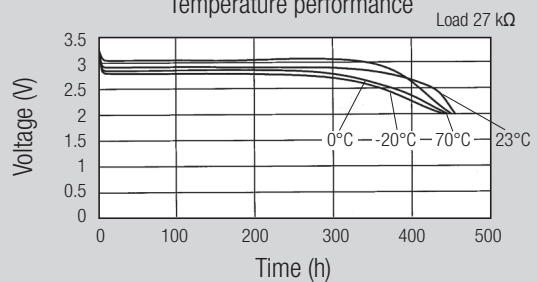
Discharge performance at 23°C



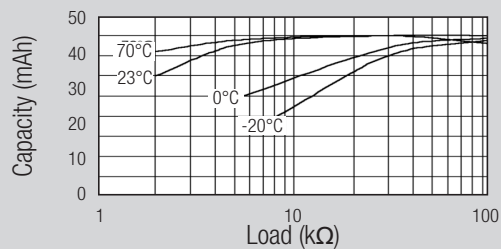
Temperature performance



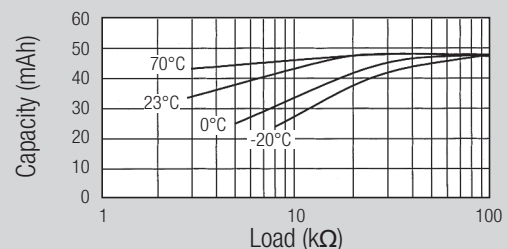
Temperature performance



Cell capacity at various loads



Cell capacity at various loads



# Coin Cells

Standard bare coin cells

**CR1616**  Rated capacity: 50 mAh  
Average weight: 1.1 g



Discharge performance at 23°C



Discharge performance at 23°C



Temperature performance Load 27 kΩ



Cell capacity at various loads



**CR1620**  Rated capacity: 68 mAh  
Average weight: 1.2 g



Discharge performance at 23°C



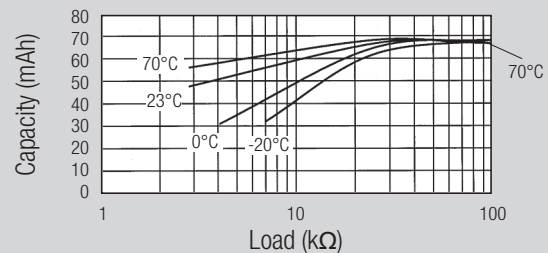
Discharge performance at 23°C



Temperature performance Load 25.5 kΩ



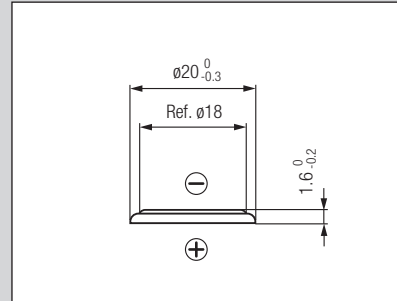
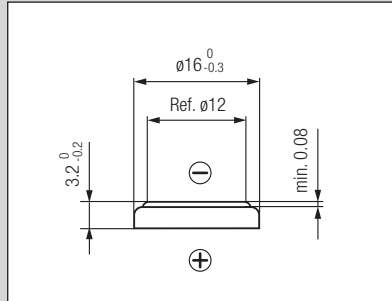
Cell capacity at various loads





**CR1632**  Rated capacity: 125 mAh  
Average weight: 1.8 g

**CR2016 MFR**  Rated capacity: 90 mAh  
Average weight: 1.7 g



Discharge performance at 23°C



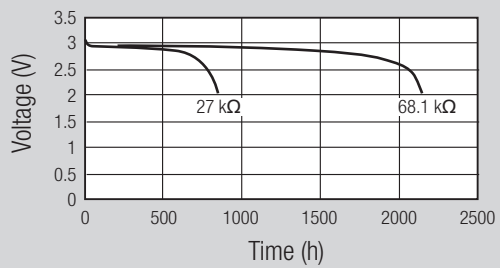
Discharge performance at 23°C



Discharge performance at 23°C



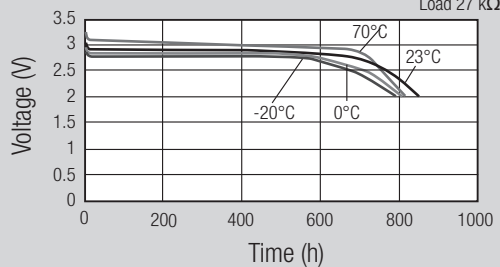
Discharge performance at 23°C



Temperature performance Load 16.2 kΩ



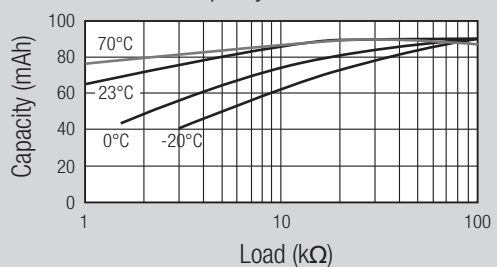
Temperature performance Load 27 kΩ



Cell capacity at various loads



Cell capacity at various loads



# Coin Cells

Standard bare coin cells



**CR2025 MFR**  Rated capacity: 165 mAh  
Average weight: 2.5 g

**CR2032 MFR**  Rated capacity: 225 mAh  
Average weight: 2.8 g



Discharge performance at 23°C



Discharge performance at 23°C



Discharge performance at 23°C



Discharge performance at 23°C



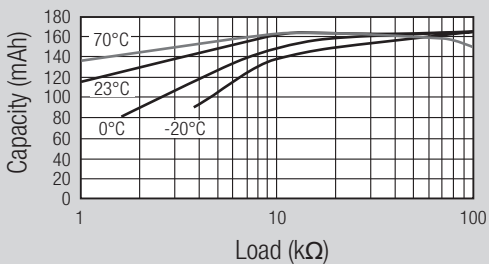
Temperature performance



Temperature performance



Cell capacity at various loads




Cell capacity at various loads

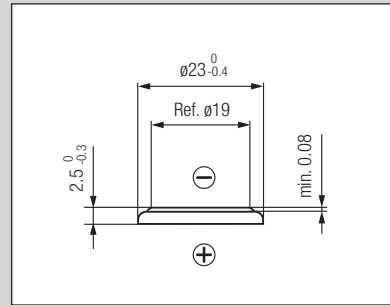
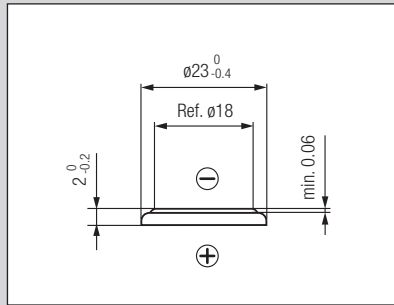






**CR2320**  Rated capacity: 150 mAh  
Average weight: 2.7 g

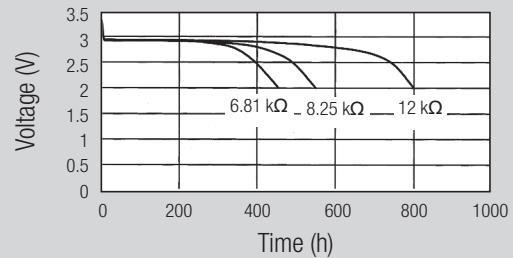
**CR2325**  Rated capacity: 190 mAh  
Average weight: 3.0 g



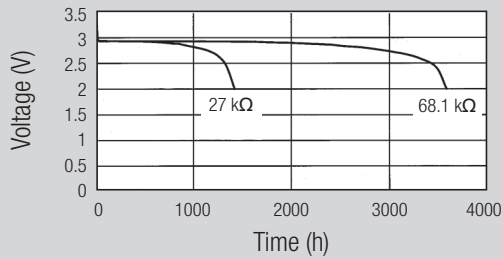
Discharge performance at 23°C



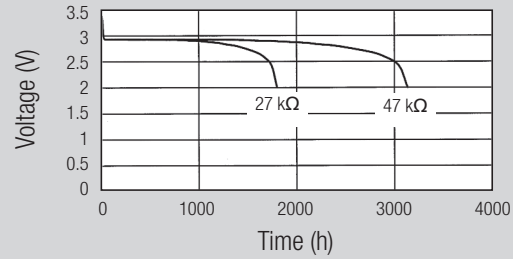
Discharge performance at 23°C



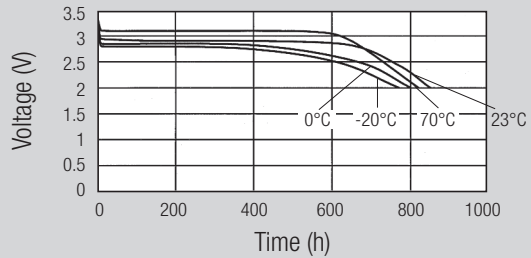
Discharge performance at 23°C



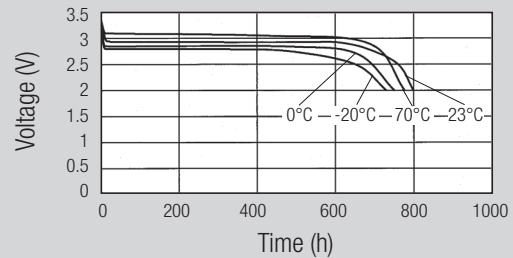
Discharge performance at 23°C



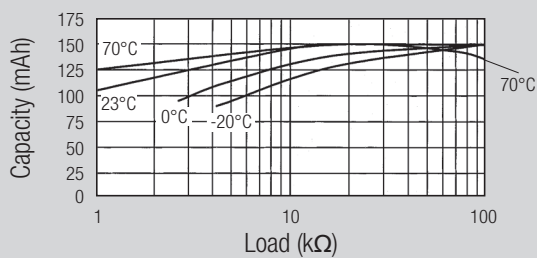
Temperature performance Load 16.2 kΩ



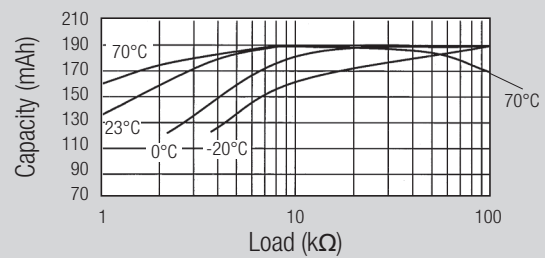
Temperature performance Load 12 kΩ



Cell capacity at various loads



Cell capacity at various loads



# Coin Cells

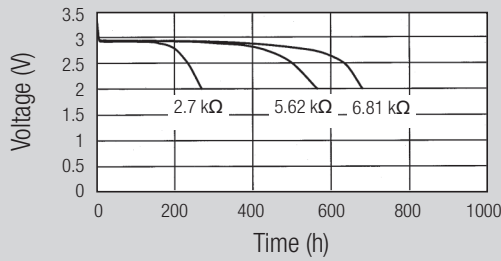
## Standard bare coin cells



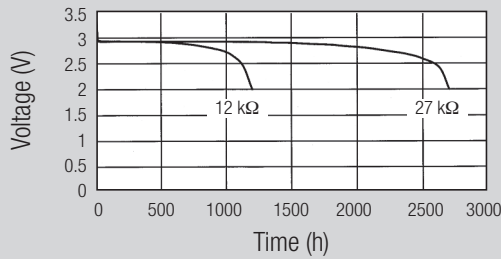
**CR2430**  Rated capacity: 285 mAh  
Average weight: 4.1 g



Discharge performance at 23°C



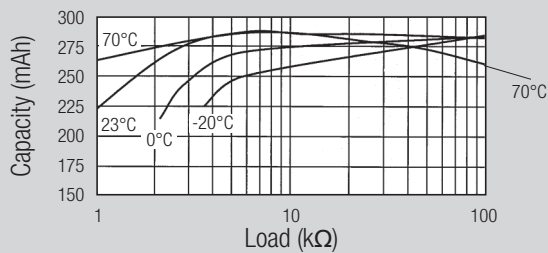
Discharge performance at 23°C



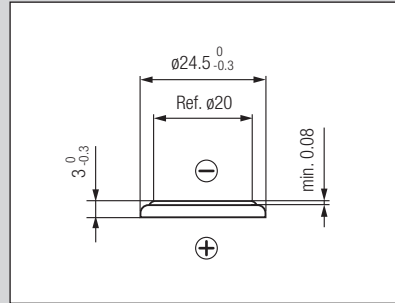
Temperature performance Load 12 kΩ



Cell capacity at various loads



**CR2430 MFR**  Rated capacity: 300 mAh  
Average weight: 4.3 g



Discharge performance at 23°C



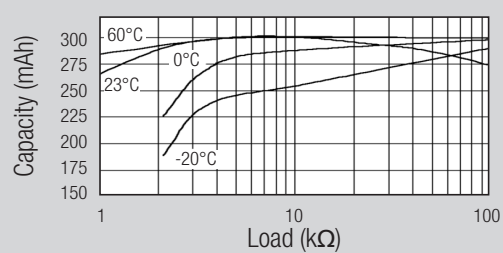
Discharge performance at 23°C




Temperature performance Load 12 kΩ



Cell capacity at various loads





**CR2450N**  Rated capacity: 540 mAh  
Average weight: 5.9 g

**CR2477N** \* Rated capacity: 950 mAh  
Average weight: 8.2 g



Discharge performance at 23°C



Discharge performance at 23°C



Discharge performance at 23°C



Discharge performance at 23°C



Temperature performance Load 6.81 kΩ



Temperature performance Load 4.7 kΩ



Cell capacity at various loads



Cell capacity at various loads



\* Battery is not user replaceable