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SENER Brand Power Product
www.jlsener.com

Document Type : Specification
Product Type : Lithium/Manganese Dioxide ($LiMnO_2$) Coin Cell
Ordering Code : SCR2032
Cell Part Number : CR2032
Cell UL Number : MH20926

| | | |
|---|---|---|
| A2 - Updated format & layout by Leo, Sin on 2 Dec., 2004 | A6 - Updated section 4 ~ 6 by Holmes, Poon on 2 Nov., 2011 | |
| A3 - Updated standard characteristics by Leo, Sin on 14 Jun., 2005 | A7 - Updated section 4 by Stella, Leung on 9 Jul., 2014 | |
| A4 - Updated RoHS version by Leo, Sin on 14 Jun., 2006 | A8 - Updated section 4 by Loki, Lo on 2 Jul., 2014 | |
| A5 - Updated general requirement by Leo, Sin on 12 Oct., 2010 | A9 - Updated section 4 by Loki, Lo on 10 Oct., 2018 | |

## 1. Purpose and Scope

This document contains both general requirements, qualification requirements, and those specific electrical, mechanical requirements for this part.

## 2. Description

Ø20mm Lithium/Manganese Dioxide ($LiMnO_2$) coin cell, RoHS compliant.

## 3. Application

Computers and Peripherals, Portable Equipment, DECT phone, etc.

## 4. Component Requirement

### 4.1. General Requirement

| | | |
|---|---|---|
| **4.1.1.** | Operating Temperature Range | : -20°C to +70°C |
| **4.1.2.** | Storage Temperature Range | : 0°C to +30°C |
| **4.1.3.** | Storage Humidity | : 40 ~ 75% |
| **4.1.4.** | Weight | : Approx. 3.2g |
| **4.1.5.** | Materials of Positive Terminal | : SUS stainless |
| **4.1.6.** | Materials of Negative Terminal | : SUS stainless |

### 4.2. Electrical Requirement

| | | |
|---|---|---|
| **4.2.1.** | Nominal Voltage | : 3V |
| **4.2.2.** | Nominal Capacity<br>(under Load 15kΩ Load and 2.0V End-voltage) | : 220mAh |
| **4.2.3.** | Load Resistance | : 15KΩ |
| **4.2.4.** | Standard Discharge Current | : 0.2mA |

### 4.3. Standard Characteristics

#### 4.3.1. Discharge Characteristics

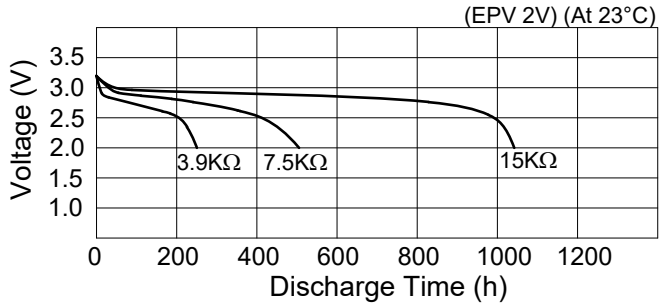


**Figure 1. Discharge Characteristics**

#### 4.3.2. Load-Operating voltage

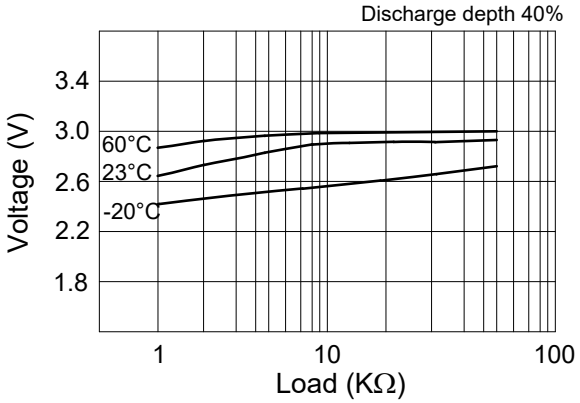


**Figure 2. Load-Operating voltage**

#### 4.3.3. Pulse Discharge Characteristics

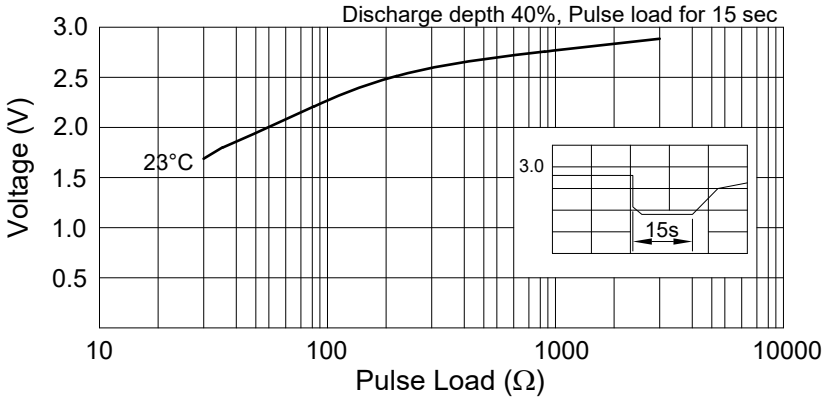


**Figure 3. Pules Discharge Characteristics**

**4.3.4.** Temperature Characteristics

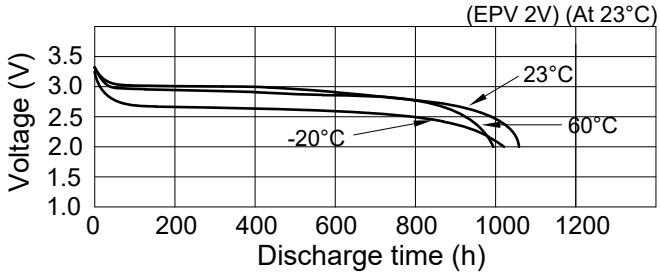


**Figure 4. Temperature Characteristics**

**4.3.5.** Load-Capacity

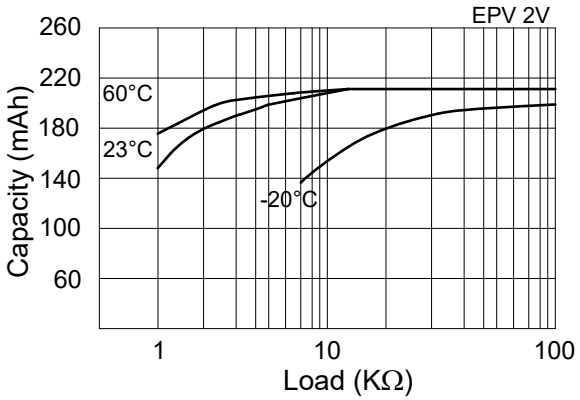


**Figure 5. Load-Capacity**

**4.3.6.** Storage Characteristics

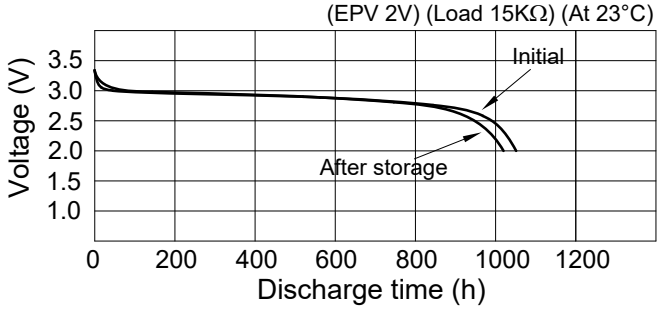


**Figure 6. Storage Characteristics**

## 5. Testing

**5.1. Open-circuit Voltage** : Subject samples to +20 ± 2 °C and 0 ± 2 °C for 8 hours or longer. Then measure the voltage between both terminals at the same ambient temperature with voltmeter.

**5.2. Closed-circuit Voltage** : Subject samples to +20 ± 2 °C and 0 ± 2 °C for 8 hours or longer. Then measure the voltage between both terminals with voltmeter while the 15kΩ is connected between both terminals at the same ambient temperature. Measured value shall be based on meter reading taken 8 seconds after the circuit is closed.

**5.3. Service Life** : Subject samples to 20 ± 2 °C and 0 ± 2 °C for 8 hours or longer. Then continuously discharge at the same ambient temperature and through 15kΩ. Discharge until terminal voltage of the test specimens falls below the discharge end-point voltage of 2.0V, and the time during which the terminal voltage is equal to and above the discharge end-point voltage shall be taken as the service life.

**5.4. Service Life after high temperature storage** : Store samples at +60 ± 2 °C for 20 days. Then subject samples to +20 ± 2 °C and ordinary humidity 65% ± 20% for 12 hours or longer and continuously discharge through 15kΩ. Discharge until the voltage falls below the dicharge end-point voltage of 2.0V, and the time during which the voltage is equal to and above the discharge end-point voltage shall be taken as the service life.

**5.5. Electrolyte Leakage Test** : Samples shall be examined for electrolyte leakage while they are kept at ordinary temperature and humidity after being stored at 45 ± 2 °C and 75% relative humidity for 30 days.

**5.6. Self-discharge :** Store samples for 12 months at +20 ± 2 °C and 65% ± 5% relative humidity and tested for service life in accordance with the method specified in 5.3. Self-discharge shall be determined as follows:

Self-discharge rate (%) = (Y1-Y2)/Y1 x 100%

Y1 : Average initial discharge life of batteries of the same lot
Y2 : Average discharge life after storage

## 6. Mechanical Layout

Unit : mm
Tolerance : Linear XX.X = ±0.3
XX.XX = ±0.05
Angular = ±0.25°
(unless otherwise specified)

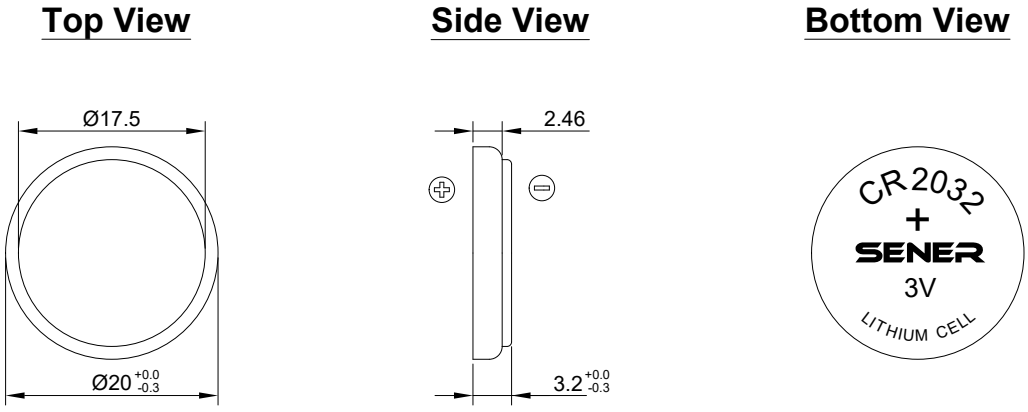


**Figure 7. SCR2032 Mechanical Layout**