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SENER Brand Power Product

www.jlsener.com

Document Type : Specification
 Product Type : Lithium/Manganese Dioxide (LiMnO₂) Coin Cell
 Ordering Code : SCR2016/726
 Cell Part Number : CR2016
 Cell UL Number : MH20926

A1 - New issue created by Ting Lok, Ngan on 27 Oct., 2010		
A2 - Updated section 4 and 6 by Loki, Lo on 24 Apr., 2013		
A3 - Updated section 4 by Loki, Lo on 15 Dec., 2017		
A4 - Updated section 3, 4 and 6 by Loki, Lo on 25 Oct., 2018		

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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 (LiMnO₂) coin cell high drain version, RoHS compliant.

3. Application

Computers and Peripherals, Portable Equipment, etc.

4. Component Requirement

4.1. General Requirement

4.1.1. Operating Temperature Range : -30°C to +65°C

4.1.2. Storage Temperature Range : 0°C to +30°C

4.1.3. Storage Humidity : 40 ~ 75%

4.1.4. Weight : Approx. 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 : 85mAh
(under Load 30kΩ Load and 2.0V End-voltage)

4.2.3. Load Resistance : 30KΩ

4.2.4. Standard Discharge Current : 0.1mA

4.2.5. Maximum Continuous Current : 6mA

4.2.6. Maximum Pulse Current : 20mA

4.3. Standard Characteristics

4.3.1. Discharge Characteristics (End Voltage: 2V, Temperature: 23°C)

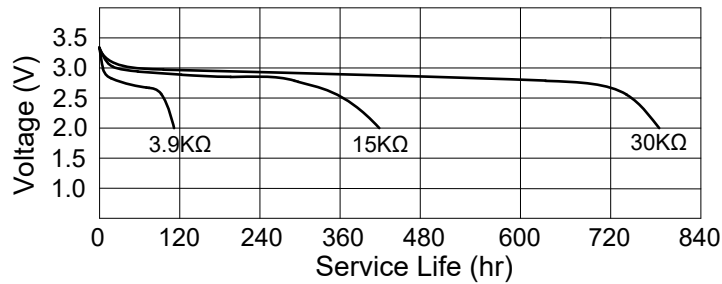


Figure 1. Discharge Characteristics

4.3.2. Load-Capacity (End Voltage: 2V, Temperature: 23°C)

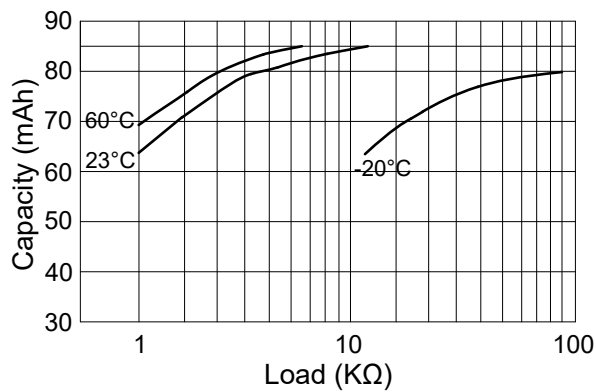


Figure 2. Load-Capacity

4.3.3. Pulse Discharge Characteristics (Discharge depth 40%, pulse load for 15 sec)

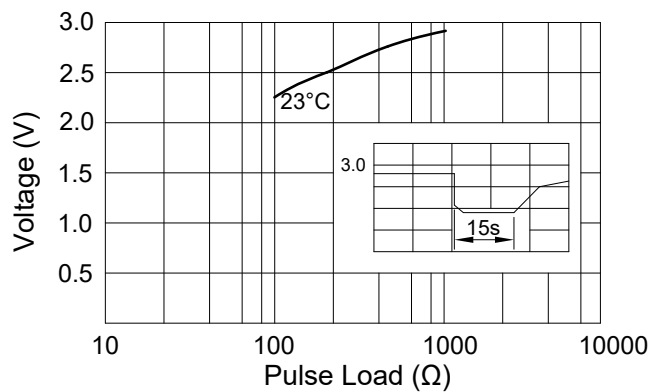


Figure 3. Pules Discharge Characteristics

4.3.4. Temperature Characteristics (End Voltage: 2V, Load: 15KΩ)

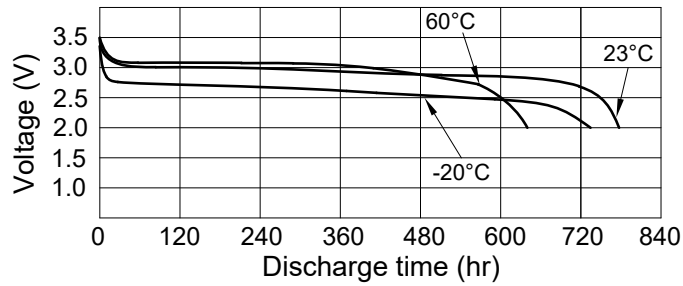


Figure 4. Temperature Characteristics

4.3.5. Load-Operating voltage (Discharge depth: 40%)

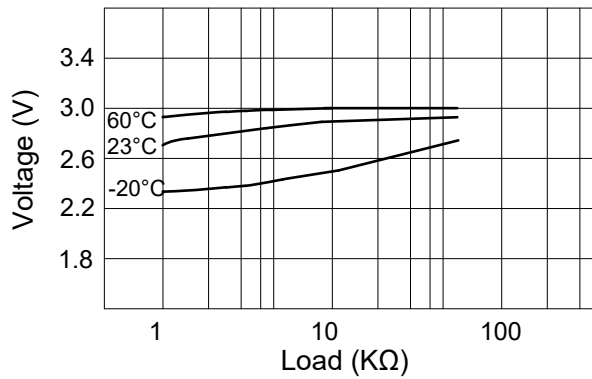


Figure 5. Load-Operating voltage

**4.3.6. Storage Characteristics (End Voltage: 2V, Temperature: 23°C, Load: 15KΩ)
(Storage at 60°C after 30 days equivalent to storage at room temperature for 18 months)**

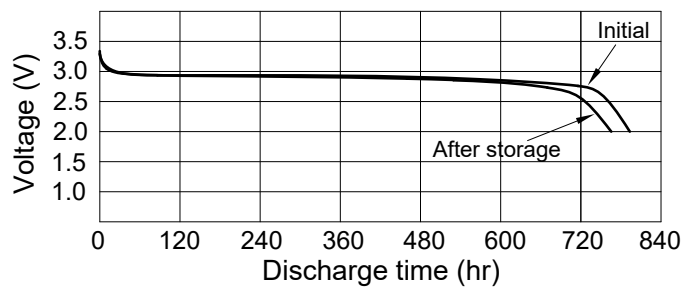


Figure 6. Storage Characteristics

5. Reliability Test

- 5.1. Open-circuit Voltage** : Subject samples to $+20 \pm 2$ °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. Short-circuit Voltage** : Subject samples to $+20 \pm 2$ °C and 0 ± 2 °C for 8 hours or longer. Then measure the voltage between both terminals with voltmeter while the 7.5K Ω 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 7.5k Ω . 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 $+60 \pm 2$ °C for 20 days. Then subject samples to $+20 \pm 2$ °C and ordinary humidity $65\% \pm 20\%$ for 12 hours or longer and continuously discharge through 7.5K Ω . Discharge until the voltage falls below the discharge 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 $+20 \pm 2$ °C and ordinary humidity $75\% \pm 5\%$ after being stored at 45 ± 2 °C and 75% relative humidity for 30 days.
- 5.6. Self-discharge** : Store samples for 12 months at $+20 \pm 2$ °C and $65\% \pm 5\%$ relative humidity and tested for service life in accordance with the method specified in 5.3. Self-discharge shall be determined as follows:

$$\text{Self-discharge rate (\%)} = (Y1-Y2)/Y1 \times 100\%$$

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)

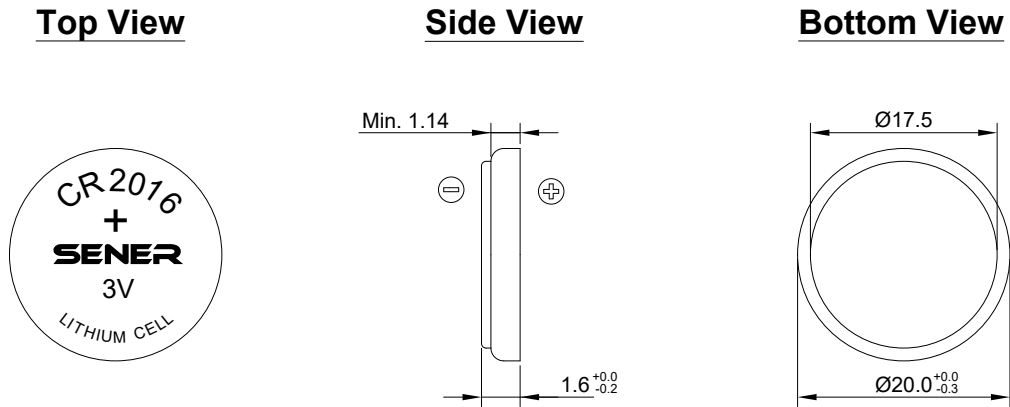


Figure 7. SCR2016/726 Mechanical Layout