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SENER Power Product

Document Type : Specification
 Product Type : Lithium/Manganese Dioxide (LiMnO₂) Coin Cell
 Ordering Code : SCR3032
 Part Number : CR3032
 UL Number : MH20926

A1 - New issue created by Holmes, Poon on 24 Jul., 2009		
A2 - update section 4 & 6 by Holmes, Poon on 16 Nov., 2011		

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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

Ø30mm Lithium/Manganese Dioxide (LiMnO₂) 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	: 6.8g
4.1.5.	Materials of Positive Terminal	: SUS430+Ni-plated
4.1.6.	Materials of Negative Terminal	: SUS430+Ni-plated

4.2 Electrical Requirement

4.2.1.	Nominal Voltage	: 3V
4.2.2.	Nominal Capacity (under Load 7.5kΩ Load and 2.0V End-voltage)	: 500mAh
4.2.3.	Load Resistance	: 7.5KΩ
4.2.4.	Standard Discharge Current	: 0.2mA

4.3 Standard Characteristics

4.3.1. Discharge Characteristics

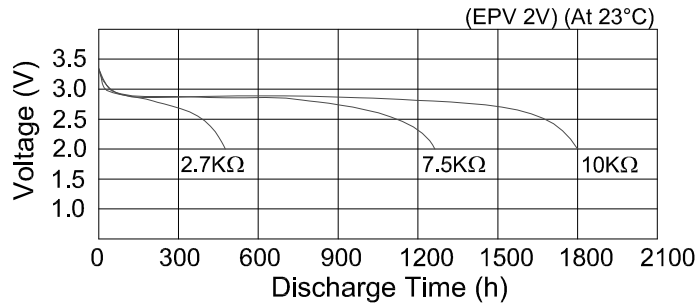


Figure 1. Discharge Characteristics

4.3.2. Load-Operating voltage

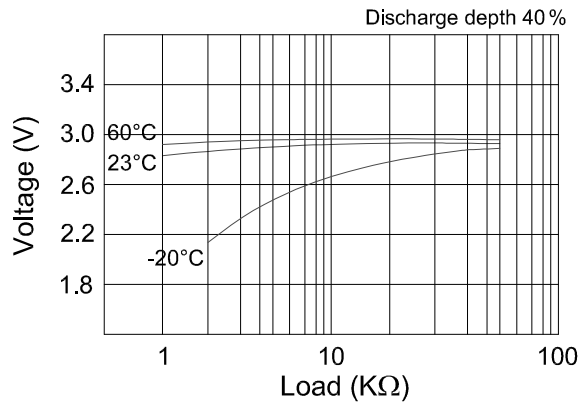


Figure 2. Load-Operating voltage

4.3.3. Pulse Discharge Characteristics

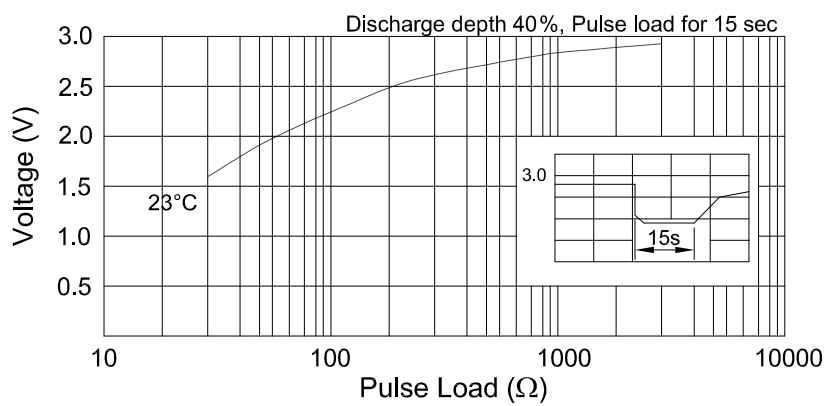


Figure 3. Pules Discharge Characteristics

4.3.4. Temperature Characteristics

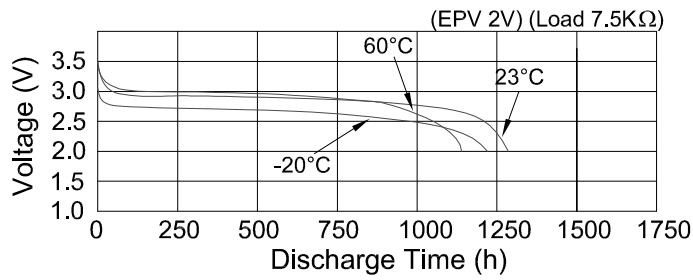


Figure 4. Temperature Characteristics

4.3.5. Load-Capacity

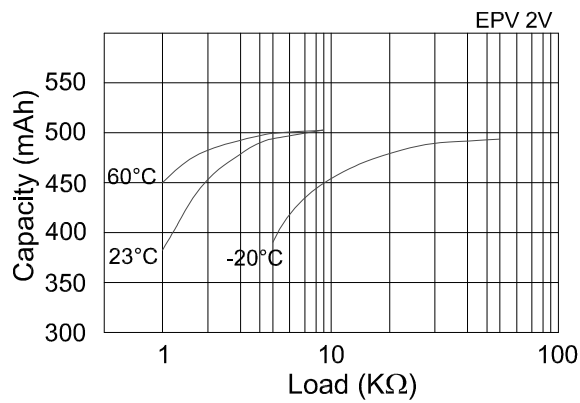


Figure 5. Load-Capacity

4.3.6. Storage Characteristics

(Storage at 60°C for 30 days equivalent to storage at room temperature for 18 months)

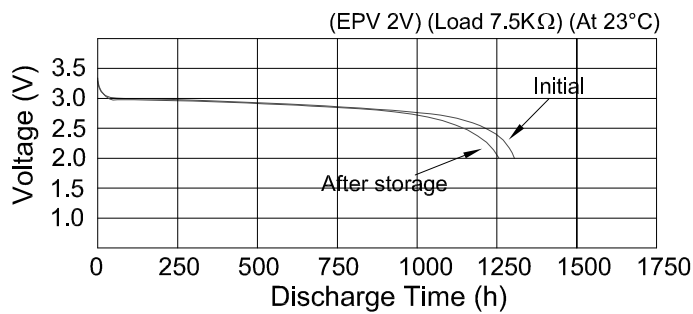


Figure 6. Storage Characteristics

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)

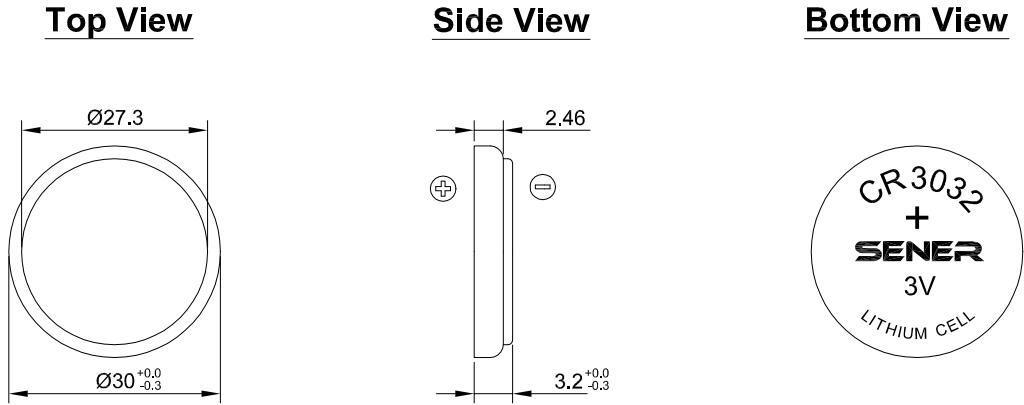


Figure 7. SCR3032 Mechanical Layout