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SENER Power Product

Document Type : Specification
 Product Type : Lithium/Manganese Dioxide (LiMnO₂) Coin Cell
 Ordering Code : SCR1620VE01S
 Battery Part Number : CR1620
 UL Number : MH20926

A1 - New issue created by Holmes, Poon on 21 Dec., 2010		
A2 - Updated section 6 by Holmes, Poon on 4 Jan., 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

Ø16.2 x 2 mm Lithium/Manganese Dioxide (LiMnO₂) coin cell with pins, 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	: 1.3g
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 30kΩ Load and 2.0V End-voltage)	: 70mAh
4.2.3.	Load Resistance	: 30KΩ
4.2.4.	Standard discharge current	: 0.2mA

4.3 Standard Characteristics

4.3.1. Discharge Characteristics

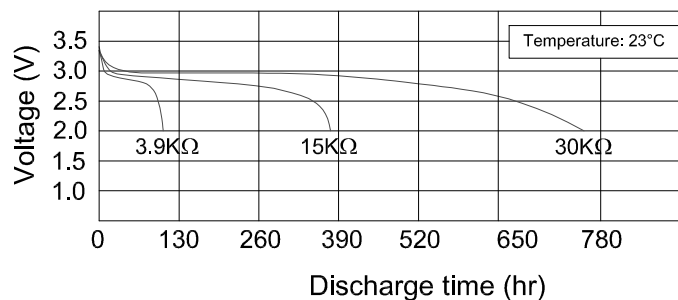


Figure 1. Discharge Characteristics

4.3.2. Load-Capacity

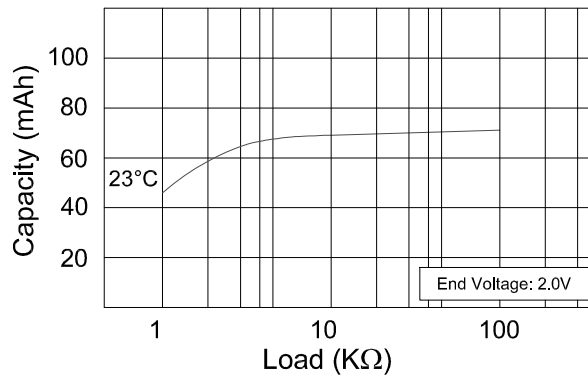


Figure 2. Load-Capacity

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

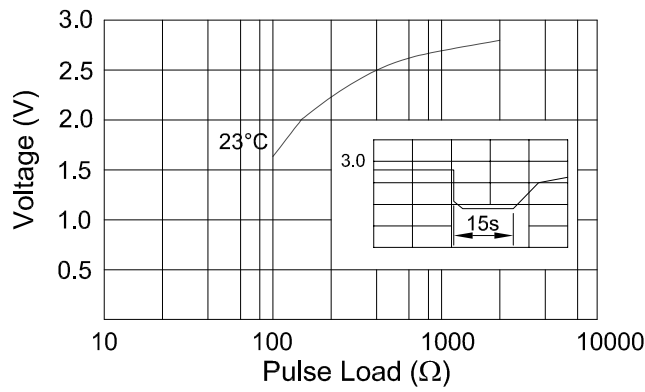


Figure 3. Pules Discharge Characteristics

4.3.4. Temperature Characteristics

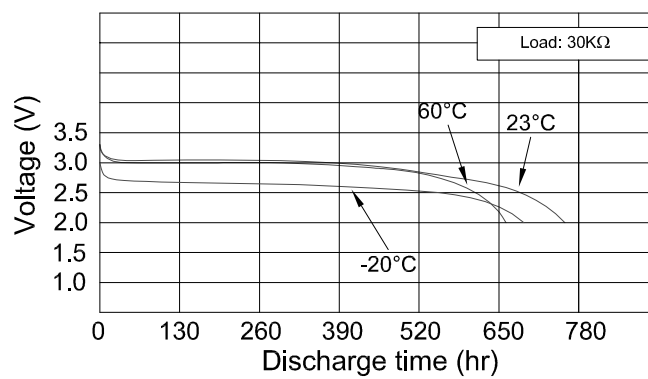


Figure 4. Temperature Characteristics

4.3.5. Load-Operating voltage

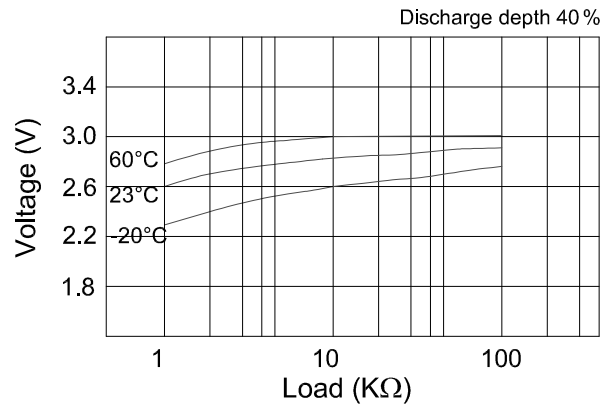


Figure 5. Load-Operating voltage

4.3.6. Storage Characteristics

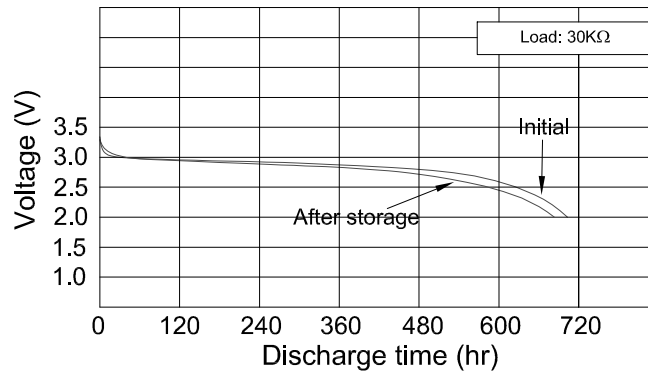


Figure 6. Storage Characteristics

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 30kΩ 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 30kΩ. 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 30kΩ. 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 $65\% \pm 5\%$ 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)

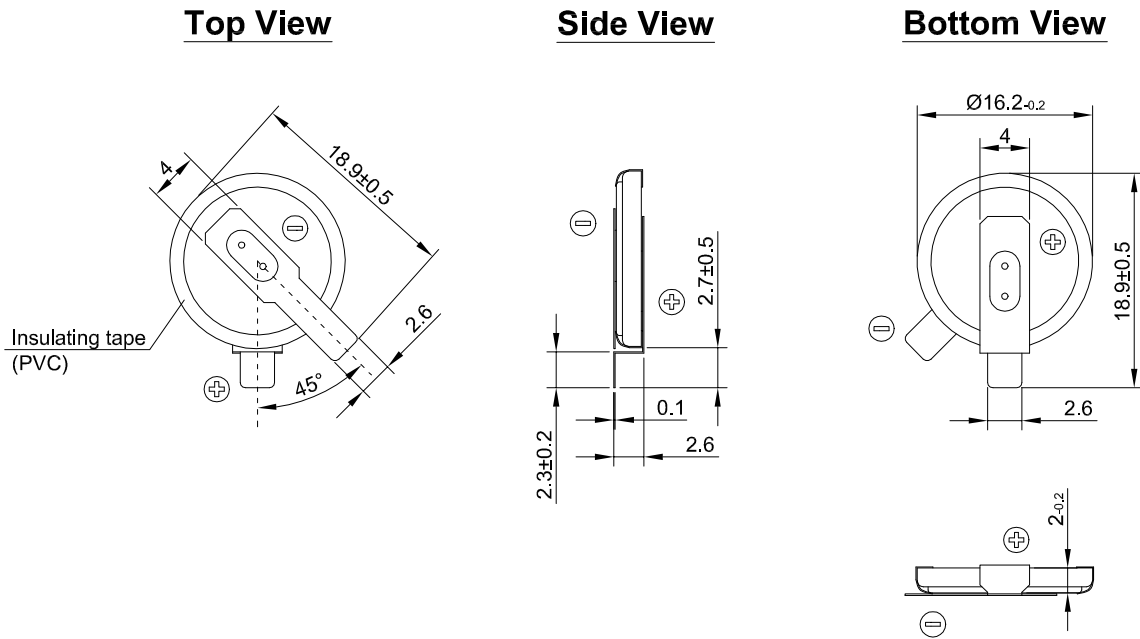


Figure 7. SCR1620VE01S Mechanical Layout