



**BeStar Technologies Inc.**

Address: 761 N. 17th Street Unit 4, St. Charles, IL 60174

Tel : 847-261-2850 E-mail : sales@bestartech.com Web : www.bestartech.com

Document Number : 0404-17  
 Revision : A4  
 Total Pages : 5  
 Prepare by : Loki, Lo  
 Date : 4 January, 2013

**SENER** Brand Power Product

www.jlsener.com

Document Type : Specification  
 Product Type : Lithium Manganese Dioxide (LiMnO<sub>2</sub>) Cylindrical Battery  
 Ordering Code : SCR1/3N  
 Cell Part Number : CR1/3N

A1 - New issue created by Leo, sin on 20 Jul., 2004		
A2 - Updated format & layout by Holmes, Poon on 24 Apr., 2012		
A3 - Updated section 4 by Holmes, Poon on 7 May, 2012		
A4 - Updated section 4 ~ 7 by Loki, Lo on 4 Jan., 2013		

This material is the property of BeStar Technologies Inc.  
 Unauthorized copying or use of this material is prohibited.

## 1. Purpose and Scope

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

## 2. Description

Ø11.7 x 10.9 mm Lithium Manganese Dioxide (LiMnO<sub>2</sub>) cylindrical battery, RoHS compliant.

## 3. Application

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

## 4. Component Requirement

### 4.1 General Requirement

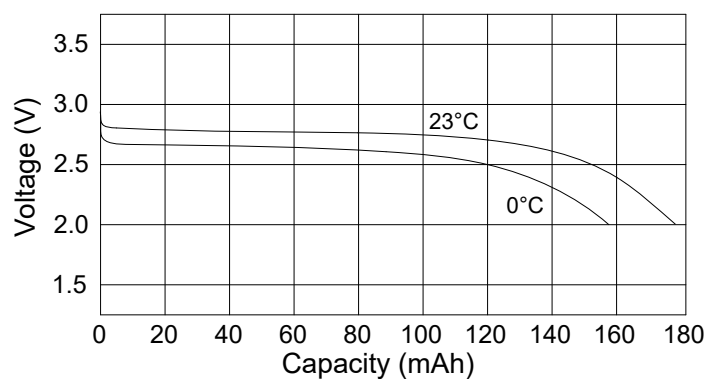
4.1.1.	Cell Size	: Ø11.7 x 10.9 mm
4.1.2.	Weight	: Approx. 3g
4.1.3.	Operating Temperature	: -40°C to +60°C
4.1.4.	Storage Temperature	: -40°C to +60°C

### 4.2 Electrical Requirement

4.2.1.	Nominal Voltage	: 3V
4.2.2.	Nominal Capacity	: 170mAh
4.2.3.	Standard Discharge Current	: 3mA
4.2.4.	Maximum Continuous Discharge Current	: 60mA
4.2.5.	Maximum Pulse Discharge Current	: 140mA

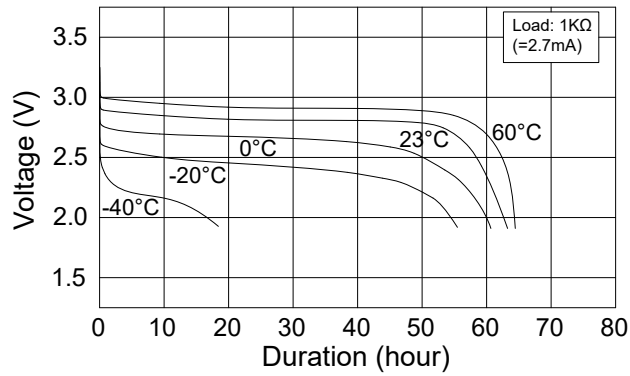
### 4.3 Standard Characteristics

#### 4.3.1. Temperature Characteristics (Load: 3mA)



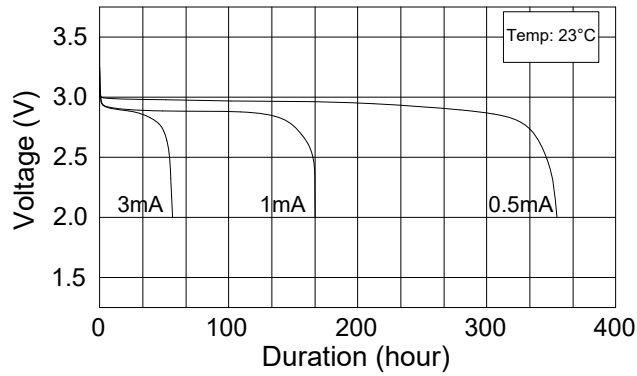
**Figure 1. Temperature Characteristics (Load: 3mA)**

**4.3.2. Temperature Characteristics (Load: 1KΩ)**



**Figure 2. Temperature Characteristics (Load: 1KΩ)**

**4.3.3. Discharge Characteristics at Various Currents**



**Figure 3. Discharge Characteristics at Various Currents**

## 5. Test and Measurement

- 5.1. **Outer Dimensions** : Samples are measured by caliper with tolerance <0.25%.
- 5.2. **Weight** : Samples are measured by balance with sensitivity > 100mg.
- 5.3. **Appearance** : No deformation or tarnish should be found by visual inspection.
- 5.4. **Open Circuit Voltage** : Samples are measured by voltmeter with internal impedance >1M $\Omega$  and tolerance <0.25%.
- 5.5. **Operating Duration** : Operating duration is counted from nominal voltage to specific cut-off voltage by standard discharge current.
- 5.6. **Battery Impedance** : Apply 1KHz, 0.1mA sine wave to samples and measure it's impedance value.
- 5.7. **Vibration Resistance** : Secure samples. Vibrated 1000rpm with 2mm peak amplitude in 3 directions (x, y and z). The test duration is 30 minutes per plane.
- 5.8. **Leakage Resistance** : Perform heat cycle test according to MIL-STD-202E-106D standard. No leakage should be found after 10 cycles test.

## 6. Caution

- 6.1. A battery shall not be stored at temperatures in excess of 45°C. Storage at less than 30°C is recommended. Storage at less than -40°C can deform the plastic parts and may cause a leakage. To prevent self-discharge caused by corrosion, or decrease of insulation, humidity during storage shall be less than 70%.
- 6.2. The battery has an explosion resistant construction. But the following cautions should be taken because combustible materials such as lithium metal and organic electrolyte are contained in the battery.
  - \* Do not short circuit.
  - \* Do not dispose in fire.
  - \* Do not charge.
  - \* Do not disassemble.
- 6.3. Keep away from heat source or flame.
- 6.4. The battery should not be washed by ultrasonic wave washer.
- 6.5. Do not mix fresh batteries with used or different battery types.

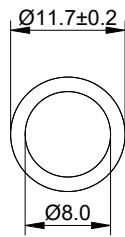
**7. Mechanical Layout**

Unit : mm

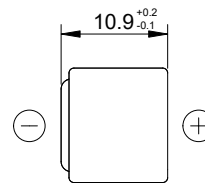
Tolerance : Linear    XX.X    = ±0.3  
                               XX.XX   = ±0.05  
                               Angular   = ±0.25°

(unless otherwise specified)

**Top View**



**Side View**



**Figure 4. SCR1/3N Mechanical Layout**