

## Alkaline Manganese Button Cell L1142F

### 1、Scope

The specification is applicable to the “Vinnic” brand Alkaline Manganese Button Cell L1142F (Mercury free) supplied by CHUNG PAK BATTERY WORKS LTD.

### 2、Kind of Products Specified

Name (Designation) : L1142F

IEC (Designation) : LR43

### 3、Technical Specification

3.1 Dimension :

|              |      |                                |    |
|--------------|------|--------------------------------|----|
| Height (H)   | 4.20 | <sup>+0</sup> <sub>-0.4</sub>  | mm |
| Diameter (Φ) | 11.6 | <sup>+0</sup> <sub>-0.25</sub> | mm |

3.2 Average Weight : 1.52 g

3.3 Nominal Voltage : 1.5 V

3.4 Nominal Capacity : 115 mAh (Discharge at 5KΩ to 0.9V )

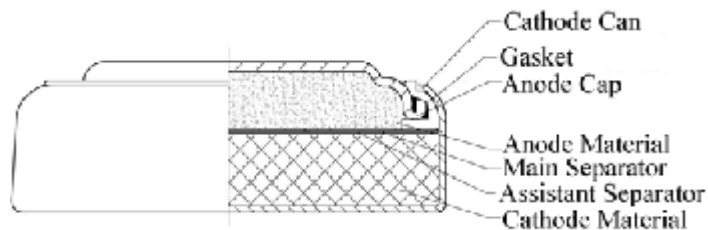
3.5 Typical Discharge Duration : 76 hrs (Discharge at 1KΩ to 0.9V )

440 hrs (Discharge at 5KΩ to 0.9V )

650 hrs (Discharge at 10KΩ to 1.2V )

880 hrs (Discharge at 10KΩ to 0.9V )

3.6 The Drawing of The Finished Battery :

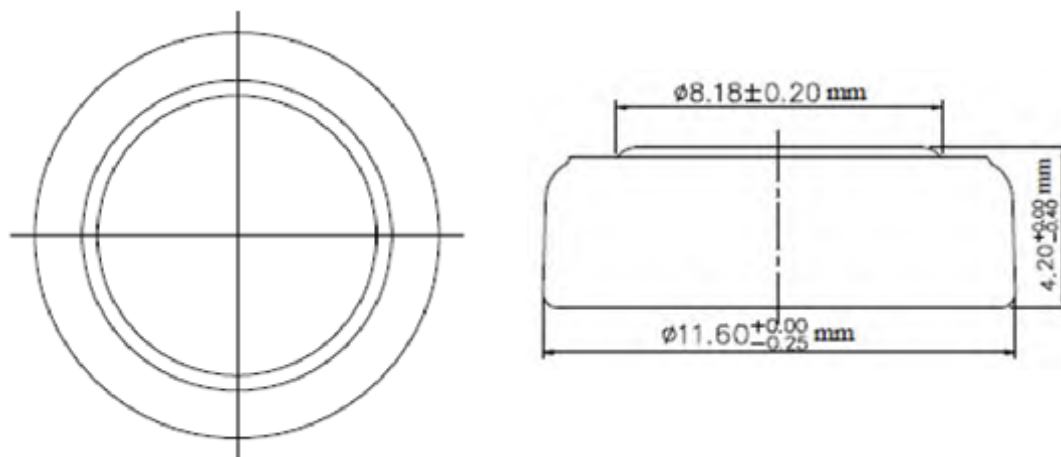


Remark: There is deviation between part shape of “The Finished Battery Drawing” and actual product.

The Drawing of Finished Battery is for reference only.

## Alkaline Manganese Button Cell L1142F

### 3.7 Outside Shape Dimensions and Terminals :



## 4 · Performance

### 4.1 Open-circuit Voltage :

|                         |               |
|-------------------------|---------------|
| Initial                 | 1.55 – 1.65 V |
| After 12 Months Storage | 1.51 – 1.60 V |

### 4.2 Service Out-put :

| Load Resistance                            | 1 KΩ         | 5 KΩ         | 10 KΩ        |         |
|--|--------------|--------------|--------------|---------|
| Discharge Method                           | Continuously | Continuously | Continuously |         |
| End-point Voltage                          | 0.9 V        | 0.9 V        | 1.2 V        | 0.9 V   |
| Minimum Duration (Initial)                 | 72 Hrs       | 400 Hrs      | 590 Hrs      | 800 Hrs |
| Minimum Duration (After 12 Months Storage) | 65 Hrs       | 360 Hrs      | 535 Hrs      | 720 Hrs |

Remark : The word “ initial ” is applicable to the products elapsed three months or less after production.

### 4.3 Comparison Table For Different resistance Discharge Capacity

| Discharge Resistance | Discharge Method | End Voltage | Capacity |
|----------------------|------------------|-------------|----------|
| 1KΩ                  | Continuously     | 0.9V        | 100 mAh  |
| 5KΩ                  | Continuously     | 0.9V        | 115 mAh  |
| 10KΩ                 | Continuously     | 0.9V        | 118 mAh  |

### 4.4 High Temperature Electrolyte Leakage Resistance :

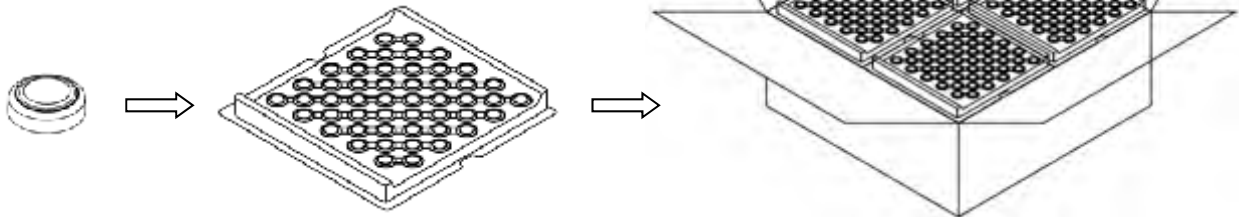
No deformation and no external electrolyte leakage shall be observed.

### 4.5 Expiry period : One year.

## Alkaline Manganese Button Cell L1142F

### 5 · Brand and packaging

#### 5.1 Appendix 1: Standard and Packaging



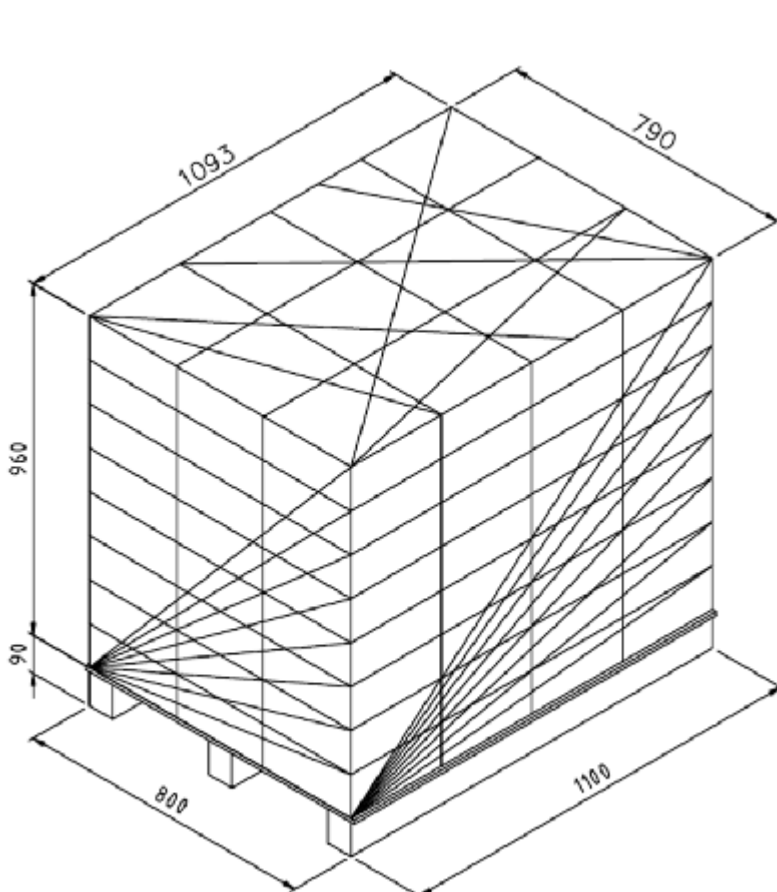
Alkaline Manganese 50PCS Per Display Pallet

4400 PCS Per Display Carton

Button Cell L1142F

White Insulating Pallet Measure : 130X123.5X11 mm

Carton Measure : 270X260X115 mm



#### Goods Dimension:

Height : 960mm

Length : 1093mm

Width : 790mm

#### Wooden Pallet:

Pallet Height : 90mm

Pallet Measure : 1100X800mm

#### Weight :

Pallet Weight : 16.7 kgs

Net Weight : 624.0 kgs

Gross Weight With Pallet : 710.4 kgs

#### Quantity :

1 Layer = 12 Cartons

8 Layers X 12 Cartons =

96 Cartons / Pallet

5.2 Any specific design and packing requirements will be accommodated as required.

## Alkaline Manganese Button Cell L1142F

### 6 · Safety instructions

| Warning   | Danger  |
|---|---|
| ① Don't throw the batteries into fire or heat the batteries.  | This may cause the batteries to disrupt or ignite.  |
| ② Don't directly solder the batteries.  | This may damage their insulating tapes and protective installation.   |
| ③ Don't insert and use batteries with the $\oplus$ & $\ominus$ electrode inverse.   | This can damage the batteries for being force charged, even may cause leakage, heat generation , disrupt, explosion or ignition.  |
| ④ Don't short-circuit the positive and negative terminals of a battery.   | This may cause heat generation, leakage, explosion, fire and personal injury.   |
| ⑤ Don't expose the batteries to water.  | This can cause heat generation or rust.   |
| ⑥ Don't charge and force discharge batteries.   | This may cause leakage, heat generation, even explosion and ignition.   |
| ⑦ Don't disassemble or damage the external tubes of the batteries or modify the batteries(stack-up batteries) etc.  | This easily results in short-circuit, leakage, even ignition.   |
| ⑧ Store unused batteries in their original packaging away from metal objects.   | This can cause battery short-circuiting which may result in venting, leakage, and explosion and personal injury.  |
| ⑨ Don't crush, puncture, or otherwise mutilate to deform batteries.   | This may cause venting, leakage, explosion and personal injury.   |
| ⑩ Immediately stop using the batteries if leakage, discolor or etc. with them are detected.   | This may cause accidents to occur.  |
| ⑪ Don't drop or strongly strike the batteries.  | This may result in leakage, heat generation, disrupt, even ignition.  |
| ⑫ To avoid using at high temperature and high humidity ambient.   | This may cause batteries early damage.  |
| ⑬ a. Be sure to use the batteries within a temperature range from 0°C to 40°C.<br><br>b. Be sure to storage the batteries within a temperature range at 20±5°C. | a. Use the batteries beyond the temperature range may cause leakage, heat generation, impaired performance, and shortening of service life of the batteries.<br>b. Storage the batteries beyond the temperature range may cause heat generation, impaired performance, and shortening of service life of the batteries. |
| ⑭ Don't use old batteries with new ones.  | Some batteries may be over-discharged. This can result in venting, leakage, explosion and personal injury.  |
| ⑮ Don't use our batteries with any other type or brand of batteries.  | Mixed-matching of batteries may result in heat generation, leakage or explosion.  |
| ⑯ Remove batteries from equipment if it is not to be used for an extended period of time.   | When batteries beyond expiry period, electrolyte leakage may occur causing damage to the equipment.   |
| ⑰ Exhausted batteries should be immediately removed from equipment.   | When discharged batteries are kept in the equipment for a long time, electrolyte leakage may occur causing damage to the appliance and/or personal injury.  |
| ⑱ Keep the batteries out of the reach of children.  | To avoid being swallowed. If swallowed, Please see doctor immediately.  |
| ⑲ Don't allow children to replace batteries without adult supervision.  | This may cause wrong operation, even may occur accident.  |
| ⑳ Please use batteries within expiry period.  | When batteries beyond expiry period, electrolyte leakage may occur causing damage to the equipment. And may impair batteries performance.   |
| ㉑ Don't take batteries by hand directly. Please wear finger cots.   | This may cause rust.  |
| ㉒ Don't take batteries with iron tweezer. Please use plastic tweezer.   | This can cause battery short-circuiting which may result in heat generation , leakage, and explosion.   |

## Alkaline Manganese Button Cell L1142F

### Appendix 1 : Test

#### 1. Storage and Test Conditions for Samples

Unless otherwise specified, the storage conditions for samples shall be, as a general rule, at the temperature of  $20\pm 2^{\circ}\text{C}$  and the humidity of  $55\pm 20\%$ .

#### 2. Measuring Instruments

2.1 Voltmeter : The accuracy of the measuring equipment shall be  $\leq 0.25\%$  and the precision shall be  $\leq 50\%$  of the value of the last significant digit. The internal resistance of the measuring instrument shall be  $\geq 1\text{M}\Omega$ .

2.2 Load Resistance : The load resistance shall include all of the external circuit, and its allowance shall be within  $\pm 0.5\%$ .

2.3 Caliper : The caliper shall be the one having precision of 0.02 millimeters or the one having the same or superior precision to this.

#### 3. Test Method

3.1 Dimensions : Measurements shall be made by use of the calipers.

3.2 Appearance : Examination shall be carried out by visual inspection .

3.3 Open-circuit Voltage : Measurements shall be carried out before the start of discharge of the sample by use of the voltmeter .

##### 3.4 Service Out-put

Discharge Start Time : After leaving in an atmosphere at a temperature of  $20\pm 2^{\circ}\text{C}$  for at least 8 hours or more .

Discharge Method : As defined in 4.2 , page 2 .

Discharge End-point : The instant when the closed-circuit voltage has reached below the end-point voltage(as defined in 4.2, page 2).

##### 3.5 High Temperature Electrolyte Leakage Resistance

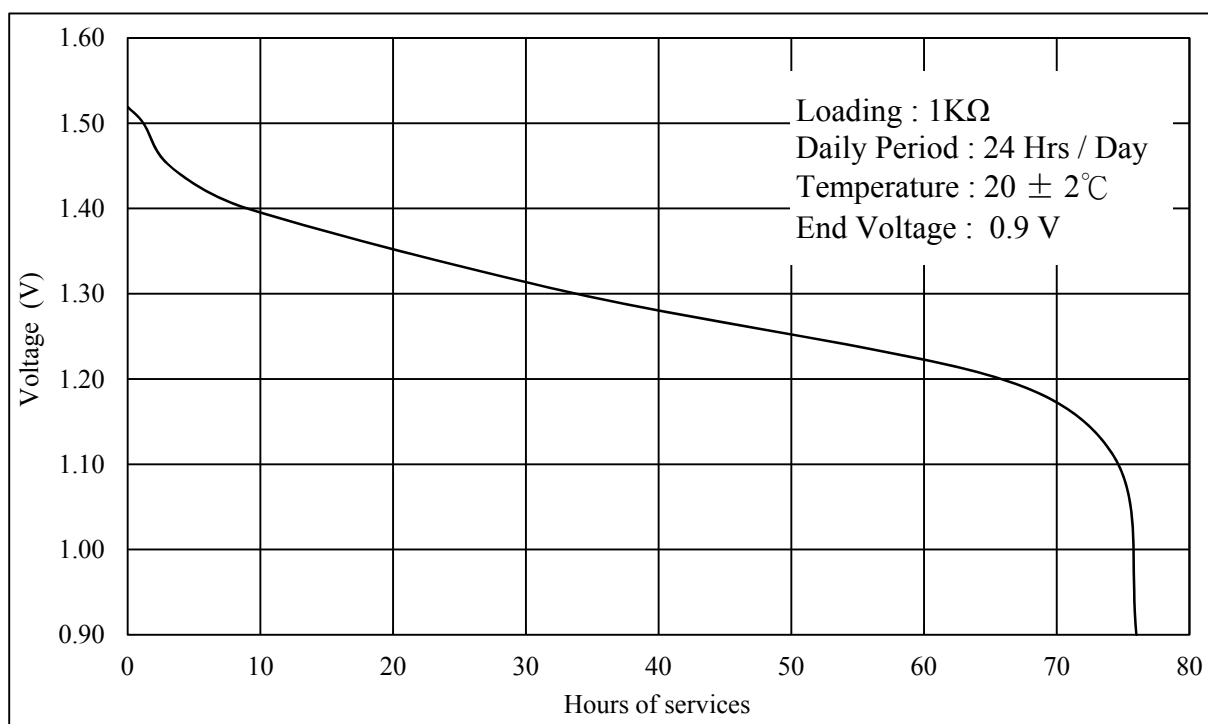
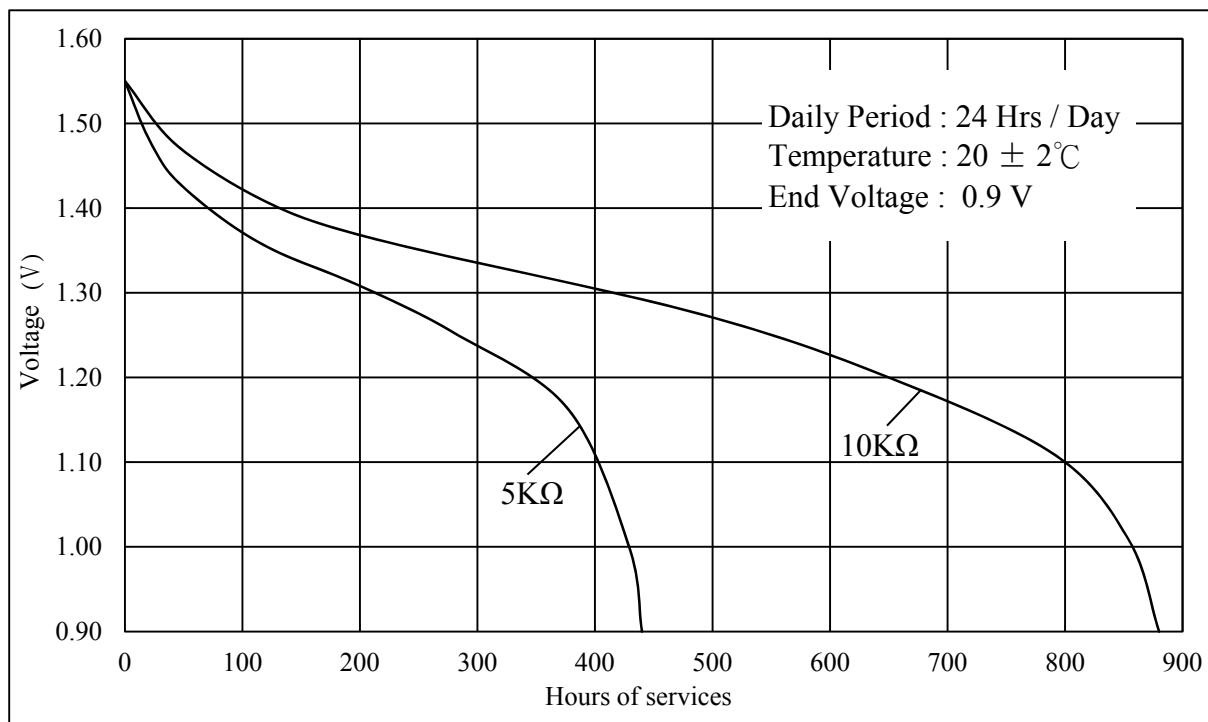
The following conditions shall be adopted for the test :

- (1) Test temperature and humidity :  $45\pm 2^{\circ}\text{C}$ , below 70%RH .
- (2) Test period : Leave to stand still 30 days .

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### Appendix 2 : Discharge Characteristics

Standard Discharge Curve :



## Alkaline Manganese Button Cell L1142F

Temperature Characteristic :

