

# **EVE SPC(Super Pulse Capacitor cell)**

### **Model SPC1550**

## 1. scope

This data sheet describes the mechanical design and performance of EVE SPC (Super Pulse Capacitor cell) model SPC-1550 which is used in a EVE-ES battery system.

ES battery system: ER battery + SPC

### 2. Characteristics

2.1 Physical

**2.1.1 Length:**  $50.5 \pm 0.5 \text{ mm}$ .

**2.1.2 Diameter:** 15.0 mm. max.

**2.1.3 Weight:**  $20.0 \pm 0.3 \, \text{gr}$ .

2.2 Electrical

#### 2.2.1 Operating conditions

Nominal Voltage: 3.60V

Cell impedance: <100 mOhm (at RT @ 1kHz)

Operating temperature range:  $-40 \, ^{\circ}\text{C} \sim +85 \, ^{\circ}\text{C}$  (in ES battery system)

#### 2.2.2 discharge

Discharge capacity (at RT):

When charged to 3.67V: 560A\*sec

Discharge end voltage: 2.5V Maximum continuous current: 2 A

Maximum Pulse, 1 sec: 5 A

### **2.2.3** charge

Max. charge voltage: 3.95V Standard charging current: 50mA Max. charging current: 100 mA

#### 2.2.4 Shelf life at different storage temperature to 80% of initial capacity

Temperature	SPC	SPC in ES battery system	
RT	3 years	10 years	
60℃	4 weeks	7 years	
80℃	1 week	at least 1 year	





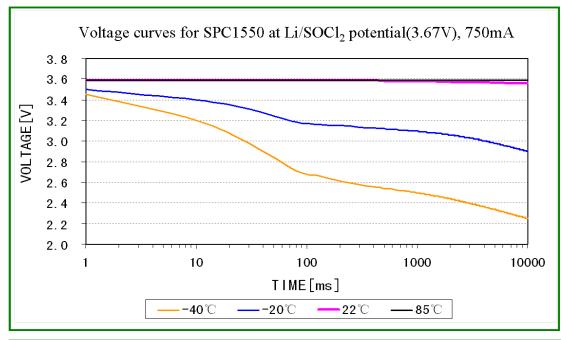
## 2.2.5 Self discharge current in ES battery system

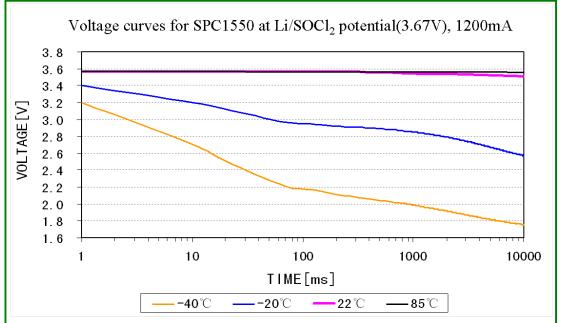
At RT:  $3 \mu A$ At  $80^{\circ}C$ :  $15\mu A$ 

### 2.2.6 Number of charge-discharge cycles to 80% of initial capacity:

	100% DOD	10% DOD	1% DOD
Charged to 3.67V	4000	40000	400000

#### 2.2.7 Performance data







### 2.3 Safety

#### 2.3.1 The SPC successfully passed the following tests:

- Short circuit at RT
- Short circuit at +55 °C
- Impact
- Compression

- Over-charge
- High temperature exposure
- Shock and vibration
- Forced discharge

EVE-SPC performed the tests according to UL 1642 specification for lithium batteries.

**2.3.2** The SPC is not restricted for air transportation.

## 3. Key Features

- Hermetically sealed (glass-to-metal)
- Wide operating temperature range
- Low self discharge
- End of life indication capability
- High reliability
- Lightweight
- Safe design

## 4. Main Applications

- Utility Meters (AMR)
- Asset, Container & Cargo Tracking
- RFID Devices
- Sonar Buoys
- Communication Equipment
- Emergency & Medical Devices

#### Warning:

The SPC1550 is designed for use in a ES battery system or in low charge current as specified only. The SPC1550 may explode or violently vent if over-charge above 4.4V.

- Do not charge the SPC1550 higher than 4.1 V, over discharge, short circuit, heat above  $100^{\circ}$ C, incinerate or expose content to water.
- $\bullet$  Charging the SPC1550 at above 3.95 V may lead to capacity loss and / or internal impedance rise.

EVE Energy CO.,LTD.

Add: No.36, Hui Feng Road No.7, Zhongkai Hi-tech Industrial Zone,

Huizhou, Guangdong, China, 516006

Tel.:+86 752 2606966 Fax.:+86 752 2606256

Http://www.evebattery.com