EVE SPC(Super Pulse Capacitor cell)

Model SPC1520

1. scope

This data sheet describes the mechanical design and performance of EVE SPC (Super Pulse Capacitor cell) model SPC-1520 which is used in a EVE-ES battery system.
ES battery system: ER battery + SPC

2. Characteristics

2.1 Physical

2.1.1 Length: 20.5±0. 5 mm.

2.1.2 Diameter: 15.0 mm. max.

2.1.3 Weight: 8.0±0. 3gr.

2.2 Electrical

2.2.1 Operating conditions

Nominal Voltage: 3.60V
Cell impedance: ≤150 mOhm (at RT @ 1kHz)
Operating temperature range: -40 °C ~ +85 °C(in ES battery system)

2.2.2 discharge

Discharge capacity (at RT):
When charged to 3.67V: 140A*sec
Discharge end voltage: 2.5V
Maximum continuous current：500 mA
Maximum Pulse, 1 sec：2 A

2.2.3 charge

Max. charge voltage: 3.95V
Standard charging current: 20mA
Max. charging current: 50 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

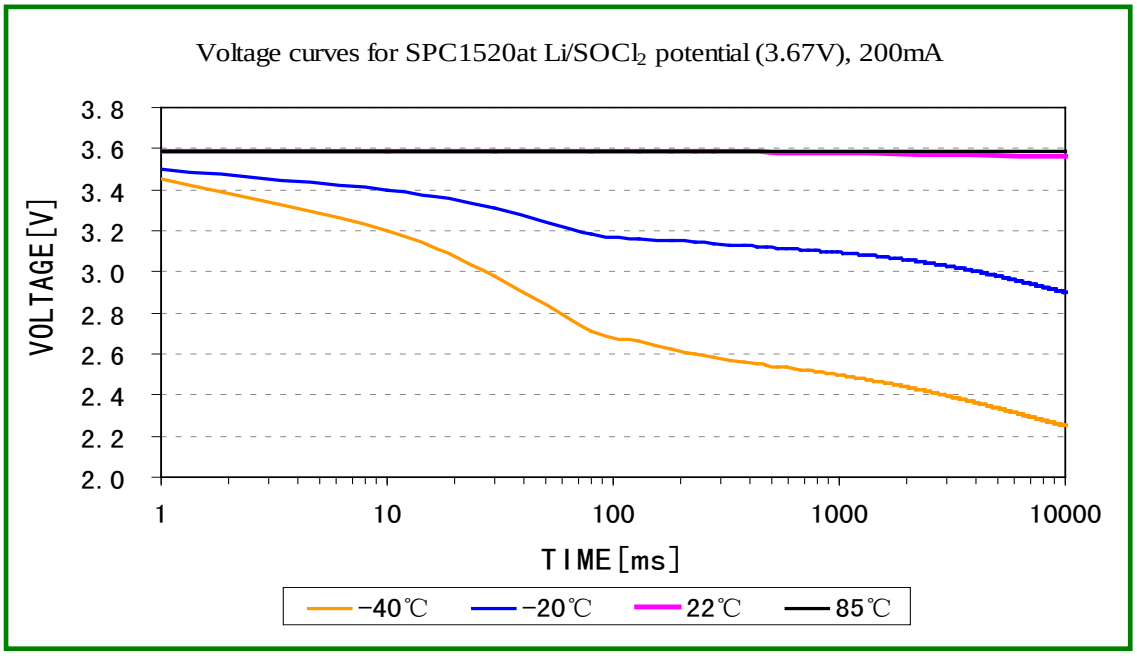
At RT: 1 μA

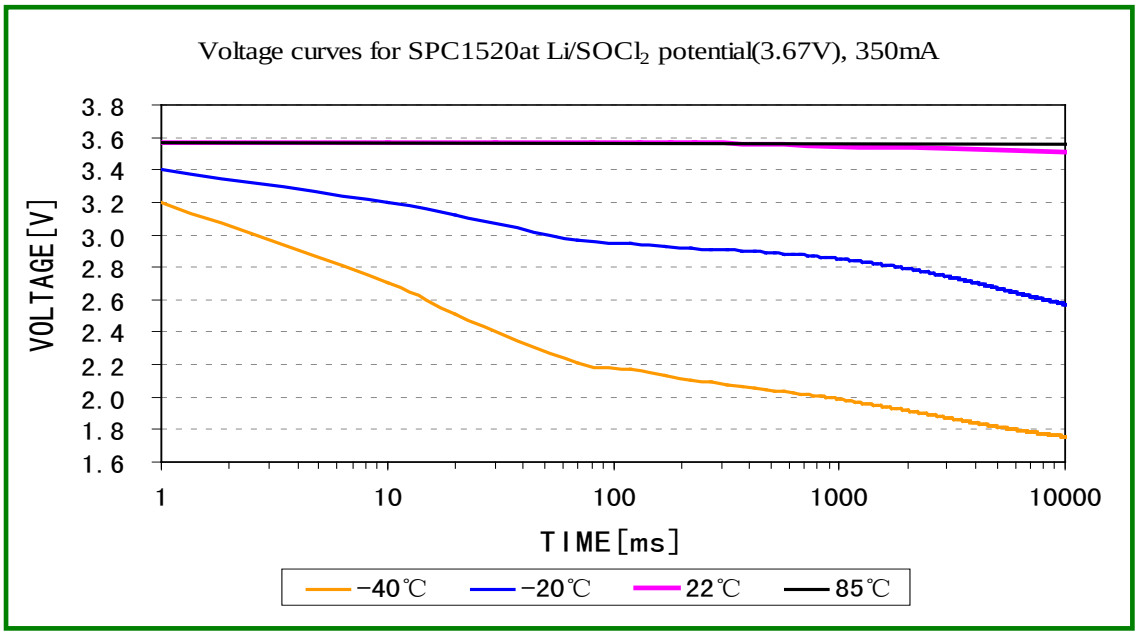
At 80℃: 5μA

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 SPC1520 is designed for use in a ES battery system or in low charge current as specified only. The SPC1520 may explode or violently vent if over-charge above 4.4V.

• Do not charge the SPC1520 higher than 4.1 V, over discharge, short circuit, heat above 100℃, incinerate or expose content to water.

• Charging the SPC1520 at above 3.95 V may lead to capacity loss and / or internal impedance rise.

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