

SPECIFICATIONS

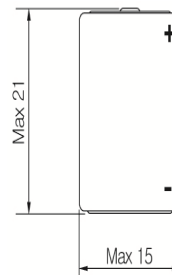
1.Scope

This data sheet describes the mechanical design and performance of Xeno (Hybrid Pulse Capacitor) model HPC-1520 optimized for extreme temperatures used in an Hybrid battery system.

2.Mechanical characteristics

Physical:

Length: 21.0 mm. max
 Diameter: 15.0 mm. max
 Weight: 8.0 gr. max



3.Electrical characteristics

3.1. Discharge

Discharge capacity (at RT):

When charged to 3.67V: 145 A*sec
 Discharge end Voltage: 3.0V

Maximum discharge current: Continuous: 500mA
 Pulse: 2,000mA

Nominal Voltage: 3.60V

3.2. Charge (constant current)

Constant voltage constant current charge, Current 20mA, End voltage 3.67V, End current 2mA.

Max. charge voltage: 3.95V
 Max. charging current: 50 mA
 Min. charge current: 1 mA

3.3. Cell impedance: Less than 250 mΩ (at RT @ 1kHz)

3.4. Shelf life

Shelf life at different storage temperature to 80%of initial capacity. used in a Hybrid battery system.

Temperature	HPC	HPC in Hybrid battery system
RT	3 years	10 years
60 °C	4 weeks	7 years
80 °C	1 week	1 year

SPECIFICATIONS

3.5 Self discharge in Hybrid battery.

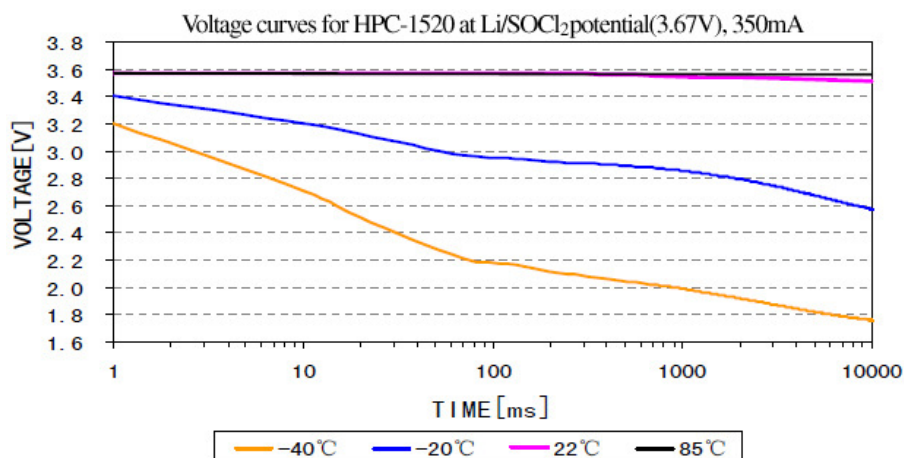
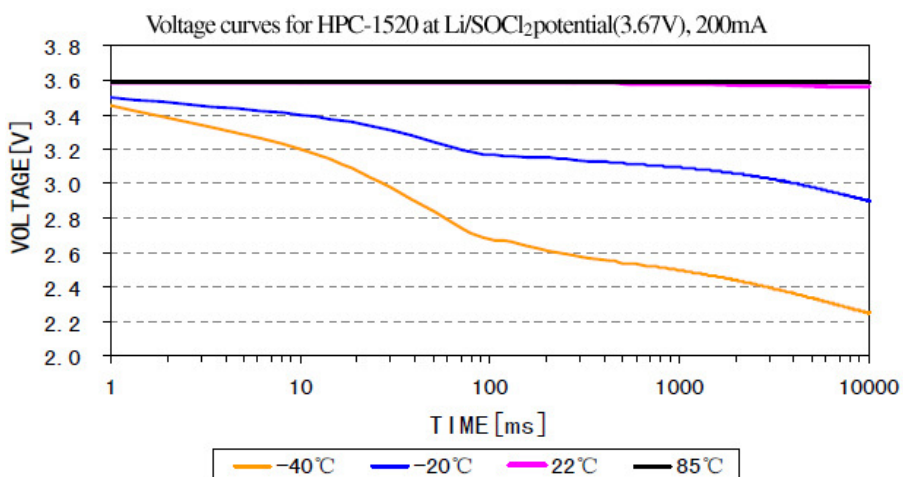
at RT: $3\mu\text{A}$
 at 80°C: $15\mu\text{A}$

3.6 Number of charge-discharge cycles to 80% of initial capacity.

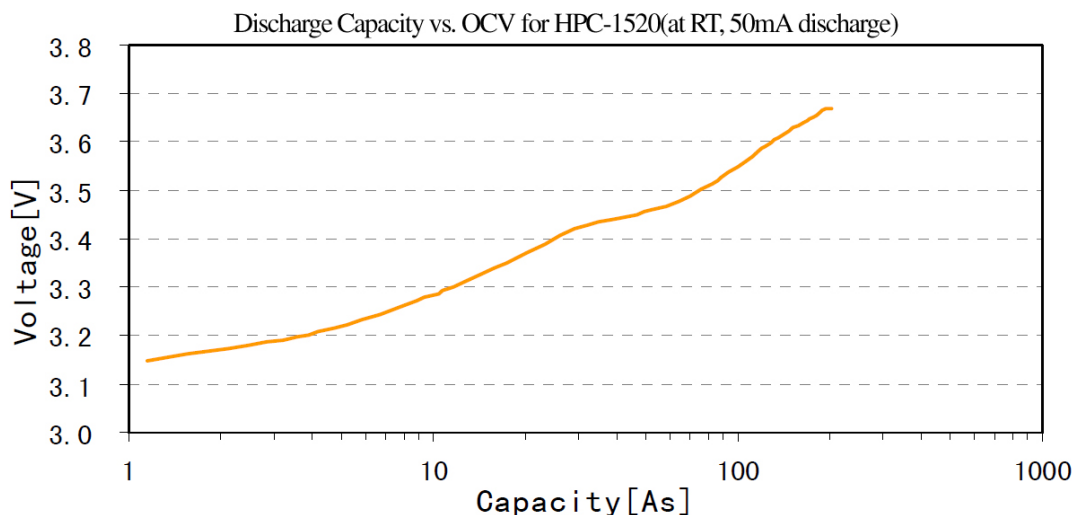
	100% DOD	10% DOD	1% DOD
Charge to 3.67V	1,000	10,000	100,000

※ DOD (Depth of Discharge)

3.7 Performance Data



SPECIFICATIONS



3.8 Safety test

The HPC successfully passed the following safety tests:

- Short circuit at RT and 55 °C
- High temperature exposure
- Compression
- Shock and vibration
- Impact
- Nail penetration
- Overcharge
- Forced discharge

Xeno Batteries performed the tests according to UL 1642 specification for Lithium batteries.

The HPC is not restricted for air transportation

3.9 Operating Temperature range

Test Item	HPC-1520 used independently	HPC-1520 in Hybrid battery system
Operating Temperature	-30°C to 60°C	-40°C to 85°C

Warning:

- The HPC is designed for use in a HPC battery system or in low charge current as specified only.
- The HPC may explode or violently vent if over-charge above 4.4V.
- Do not charge the HPC higher than 4.1V, over-discharge, short circuit, heat above 100 °C, incinerate or expose content to water.
- Charging the HPC at above 3.95V may lead to capacity loss and / or internal impedance rise.