SPECIFICATIONS

1.Scope

This data sheet describes the mechanical design and performance of Xeno (Hybrid Pulse Capacitor) model HPC-1550 optimized for extreme temperatures used in an Hybrid battery system.

2.Mechanical characteristics

Physical:

Length:	51.0 mm. max
Diameter:	15.0 mm. max
Weight:	20.3 gr. max

3.Electrical characteristics

3.1. Discharge

Discharge capacity (at RT):

When charged to 3 67V:	560 A*sec
Discharge end Voltage:	2.5V (discharge below 2.5V at RT and discharge below 2.0V at -40℃ may increase the HPC internal impedance)
Maximum discharge current:	Continuous: 2,000mA Pulse: 5,000mA

3.2. Charge (constant current)

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

3.3. Cell impedance: Less than 100 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℃	4 weeks	7 years
80℃	1 week	1 year

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3.5 Self discharge in Hybrid battery.

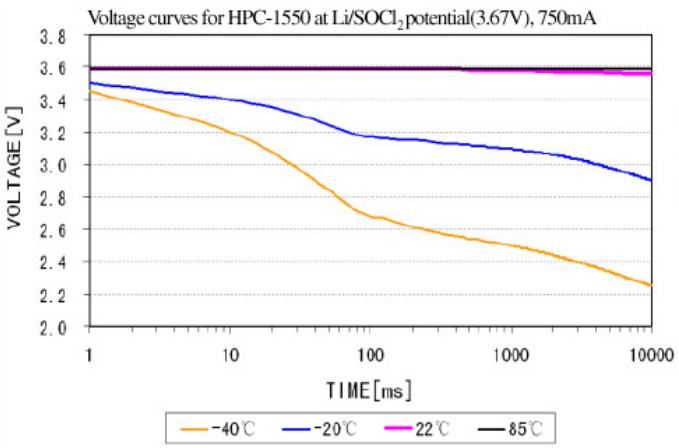
at RT: 3㎂
at 80℃: 15㎂

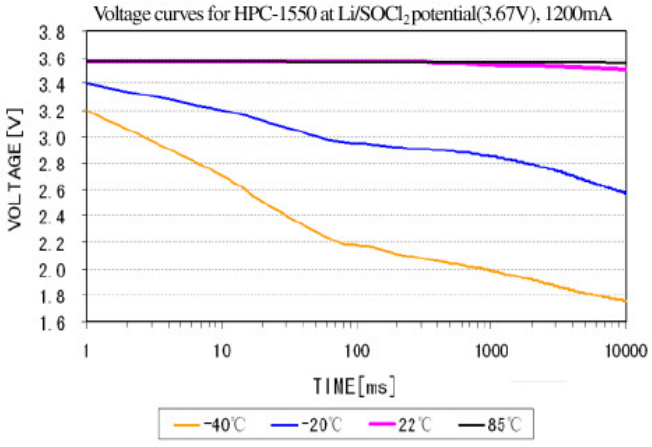
3.6 Number of charge-discharge cycles to 80%of initial capacity.

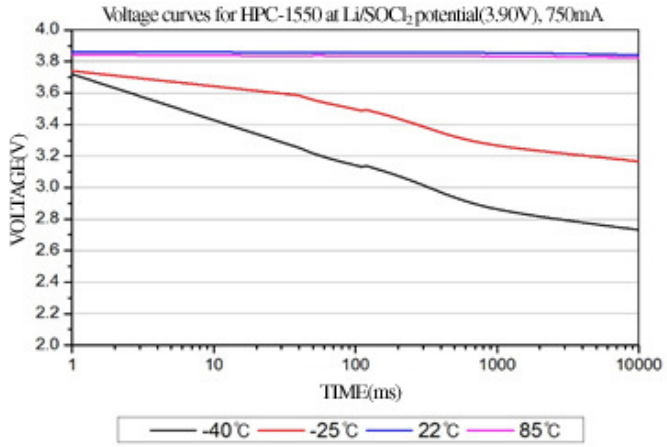
	100% DOD	10% DOD	1% DOD
Charge to 3.67V	1,000	10,000	100,000
Charge to 3.90V	800	8,000	80,000

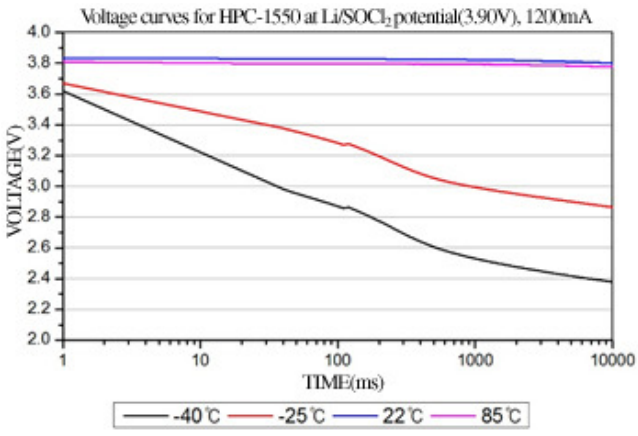
※ DOD (Depth of Discharge)

3.7 Performance Data









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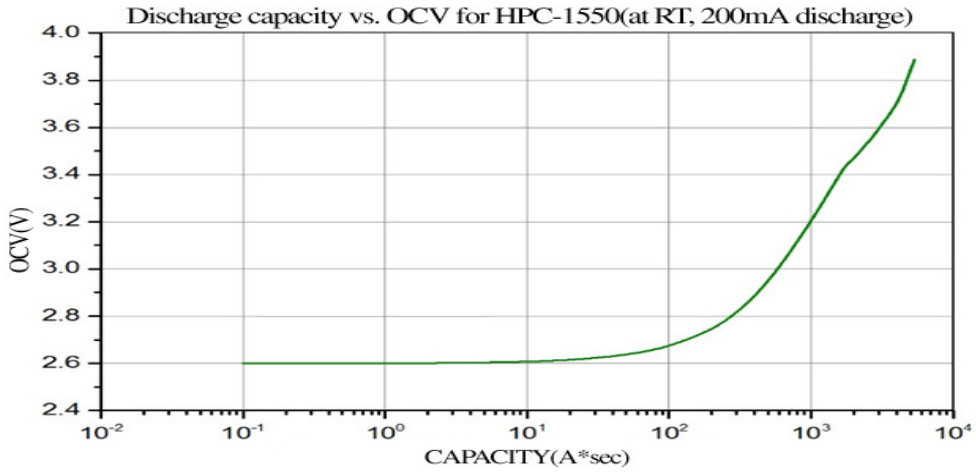

3.8 Safety test

The HPC successfully passed the following safety tests:

- ■ Short circuit at RT and 55℃
- ■ Compression
- ■ Impact
- ■ Overcharge
- ■ High temperature exposure
- ■ Shock and vibration
- ■ Nail penetration
- ■ 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 / Storage Temperature range

Test Item	HPC-1550 used independently	HPC-1550 in Hybrid battery system
Operating Temperature	-30℃ to 60℃	-40℃ to 85℃
Storage Temperature	-30℃ to 60℃	-30℃ to 60℃

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℃, incinerate or expose content to water.
-Charging the HPC at above 3.95V may lead to capacity loss and / or internal impedance rise.