

LONG SING Hybrid Pulse Capacitor

Model: HPC-1520

1. Scope:

This data sheet describes the mechanical design and performance of LONGSING HPC (Hybrid Pulse Capacitor) model HPC-1520 used in a IOT battery pack(ER+HPC).

2. Characteristics:

2.1 Physical

2.1.1 Length:	20.0±0.3mm
2.1.2 Diameter:	14.5±0.1mm
2.1.3 Weight:	9.0±0.5g

2.2 Electrical

2.2.1 Charge

- Max. charge Voltage: 3.67V
- In parallel ER: Self-balancing charging

2.2.2 Discharge

- Capacity when charge to 3.67 V: 145As
- Discharge end voltage (@RT) : 2.5V (End voltage can reach 2.0V at -40°C ~ -20°C)
- Discharge Temp. Range: -40°C ~ +85°C

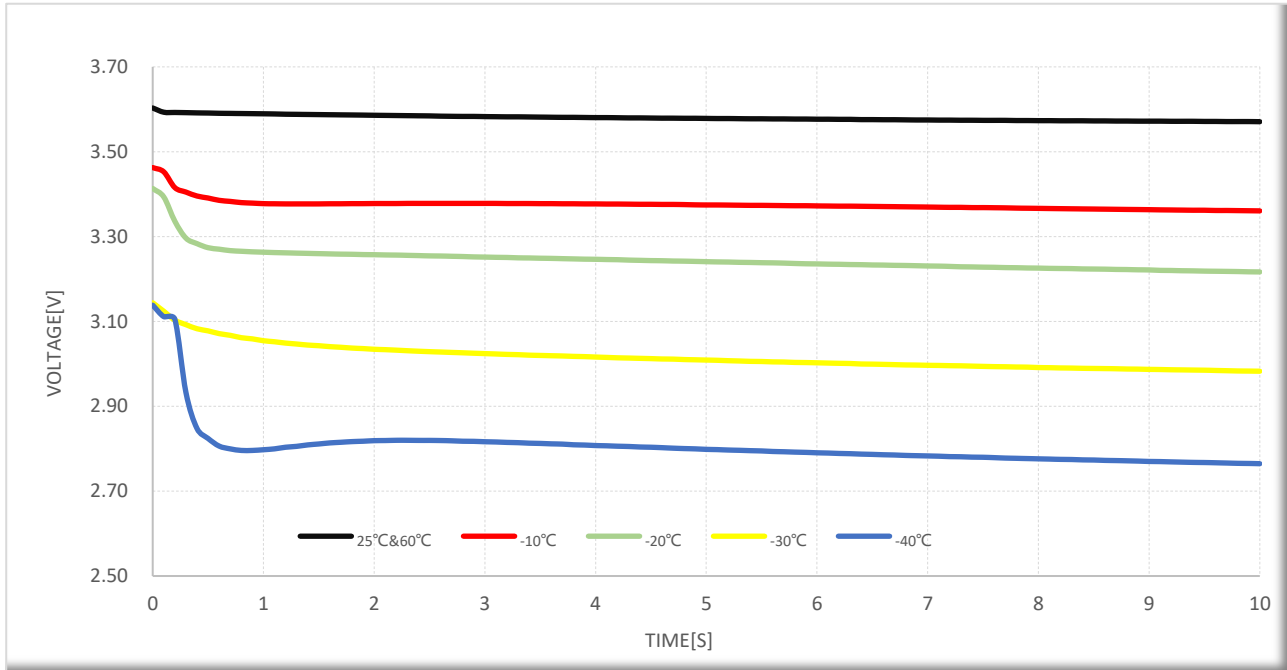
2.2.3 Cell impedance: Less than 160 mΩ (at RT @ 1kHz)

2.2.4 Self discharge current: 1.5μA @RT , @3.67V
3.0μA @40°C , @3.67V

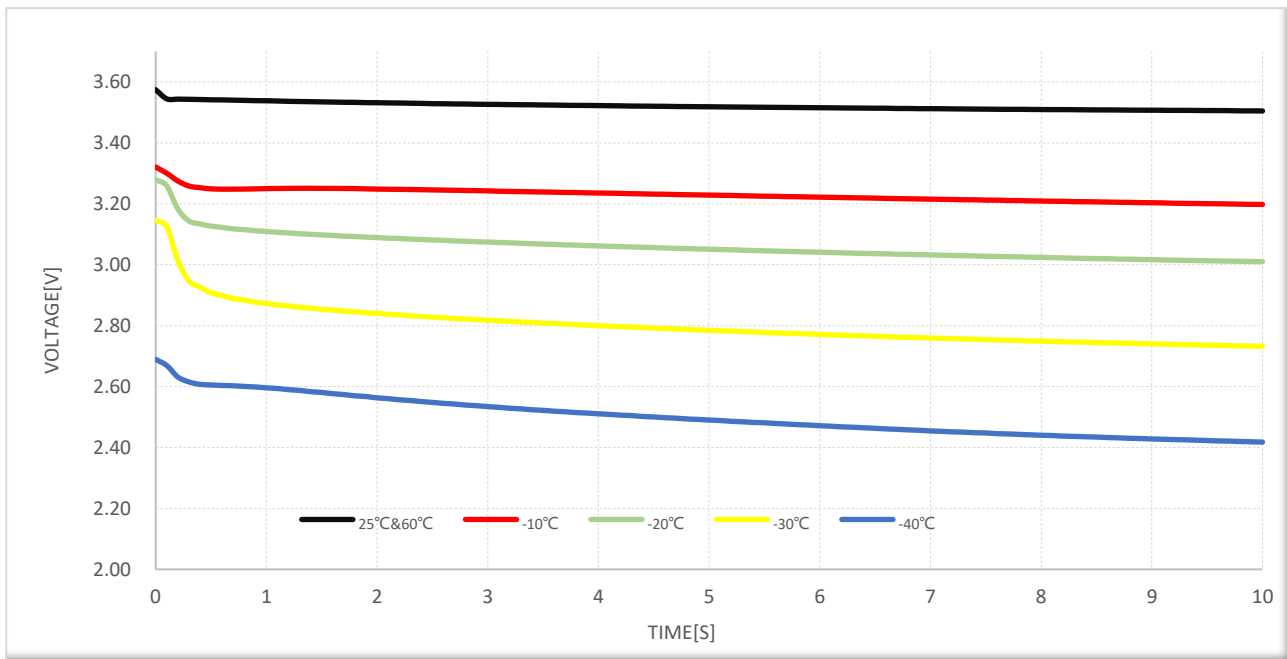
2.2.5 Number of working cycles: 100000 cycles (cycles consumption capacity < 4As)

2.2.6 Performance characteristics:

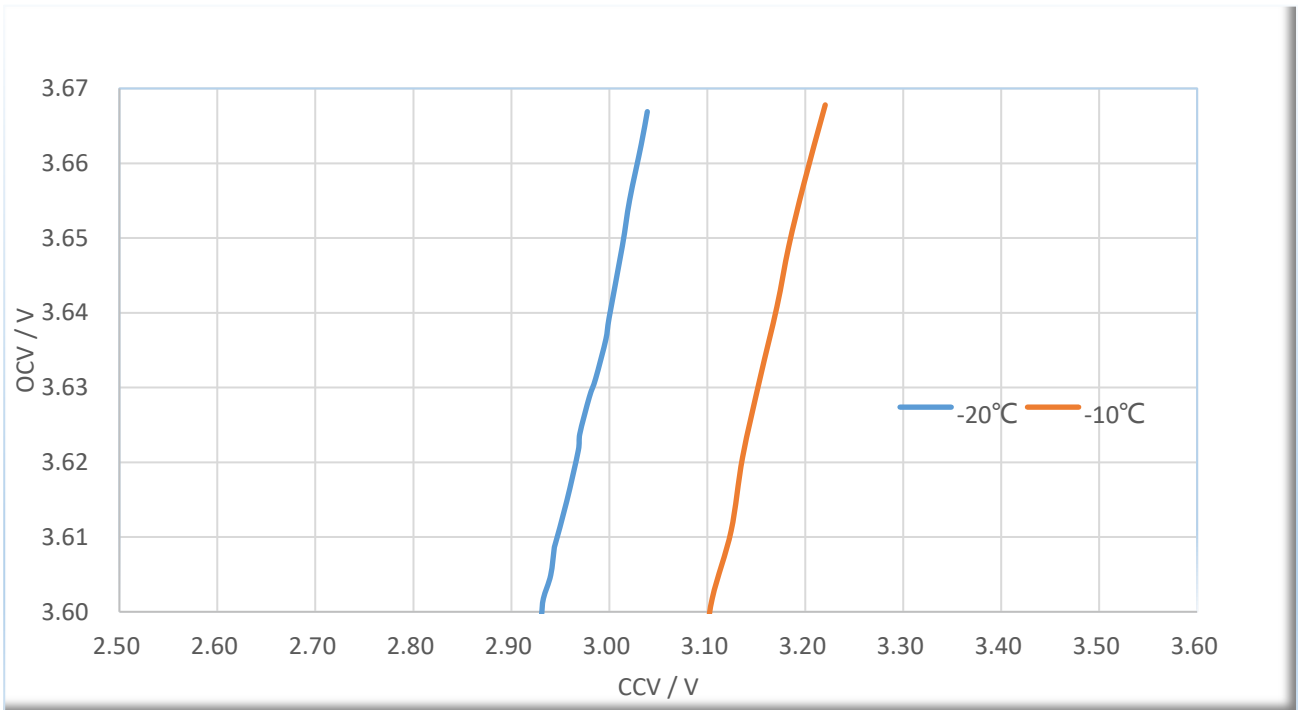
Voltage curves for HPC1520 at ER potential (3.67 V), 200 mA



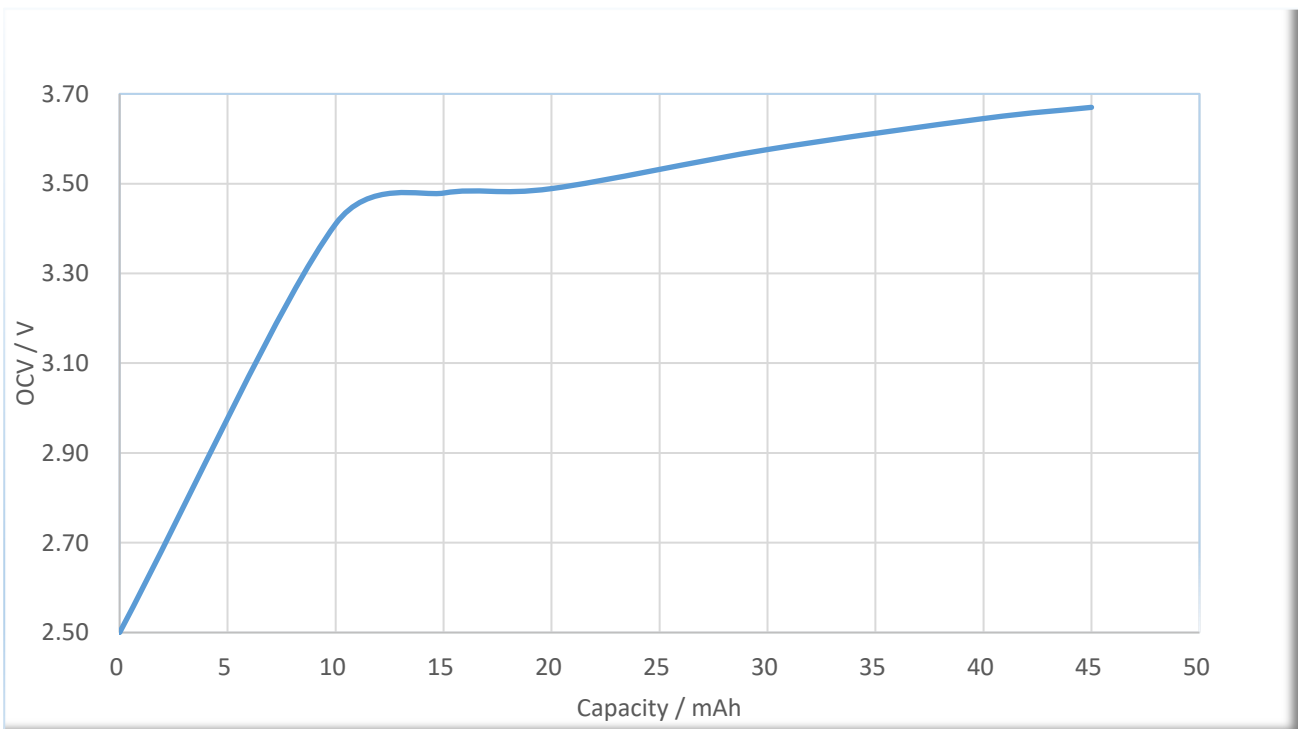
Voltage curves for HPC1520 at ER potential (3.67 V), 350 mA



Different OCV VS CCV @350mA,1S



Available capacity vs. OCV for HPC1520 (at RT, 50 mA discharge)



2.3 Safety Characteristics

- ◆ UL1642 ,IEC62133,UN38.3 certificate approved. UL File NO.: MH61580

2.5 HPC used in a IOT battery pack(ER+HPC) usage considerations

- ◆ HPC is the key for high current pulse and low temperature load capability in ER+HPC battery pack.
- ◆ The capacity of HPC can be ignored for the length of life time in the ER+HPC battery pack.
- ◆ The self-discharge of HPC can be ignored for the battery life of ER+HPC, which is mainly affected by the capacity attenuation of ER.