



1/2AA Size Hybrid Layer Capacitor (HLC)



Notice: Use as part of PulsesPlus™ battery only.

Consult with Tadiran to confirm applicability for specific application requirements.

Physical Characteristics

Length	21 mm. max.
Diameter	15.1 mm. max.
Weight	7.7 g. max.

Electrical Characteristics (for batteries stored at RT for 1 year or less)

Capacity when charged to 3.67V	140 As
Capacity when charged to 3.90V	210 As
Maximum Discharge Current	
Continuous (without PTC)	0.5 A
1 second pulse (without PTC)	2 A
Operating temperature range	-40 to +85 °C
Storage temperature range	-55 to +85 °C
Self discharge in PulsesPlus™ battery at RT	1 µA
Self discharge in PulsesPlus™ battery at 80°C	5 µA
Impedance at RT	< 250 mΩ at 1 kHz



Key Features

- Up to 25 years lifetime and more
- Hermetically sealed (glass-to-metal)
- Wide operating temperature range
- Low self discharge
- Large number of cycles
- High output current
- High reliability
- Safe design
- Lightweight

Main Applications

- Utility Meters
- Asset, Container & Cargo Tracking
- RFID Devices
- Communication Equipment
- Internet of Things (IoT)
- Emergency and Medical devices
- Sonar Buoys

Shelf life at different storage temperatures to 80% of initial capacity

Temperature	HLC when not connected to a primary cell	HLC in PulsesPlus™ battery
RT	3 years	10 years
60°C	4 weeks	7 years
80°C	1 week	At least 1 year

Safety Warnings (if HLC is not connected to primary cell)

The HLC is designed for use in a PulsesPlus™ battery or in low charge current as specified only.

The open-circuit voltage during storage shall not fall below 2.8V.

Discharging below 2.5V at RT may increase the HLC's internal impedance.

The maximum charge current, when HLC is not charged by primary cell, is 25 mA.

Maximum Charging Voltage is 3.95 V. Charging the HLC at above 3.95 V may lead to capacity loss and / or internal impedance rise.

Do not charge the HLC above 4.1V. Charging above 4.4V may cause the HLC to explode or vent violently.

Safety Compliance

The cells successfully passed the following tests:

- Altitude simulation
- Shock & Vibration
- Short Circuit at RT and 57 °C
- Heating at 130 °C
- Forced Discharge
- Crush
- Impact
- Temperature Cycling
- Overcharge

Ordering P/N:

HLC-1520A/S	61-1521-22000
HLC-1520A/T	61-1521-22150
HLC-1520A/TP	61-1521-32000

WARNING:

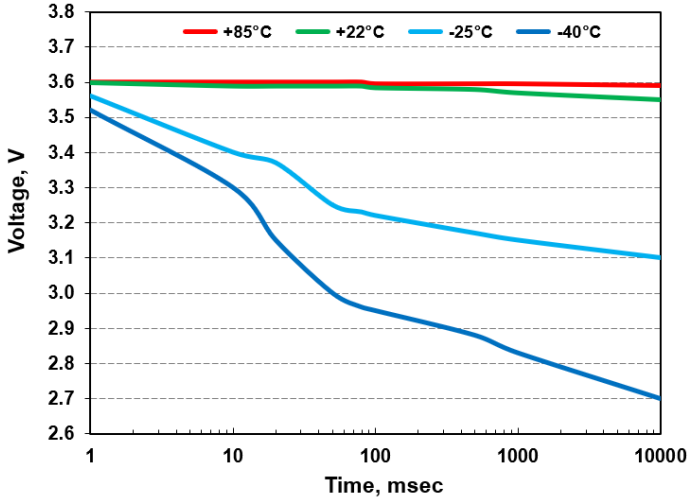
Fire, Explosion, And Severe Burn hazards.
Do Not Crush, Disassemble, Heat Above 100°C, Short Circuit, Incinerate Or Expose Contents to water.

www.tadiranbatteries.com

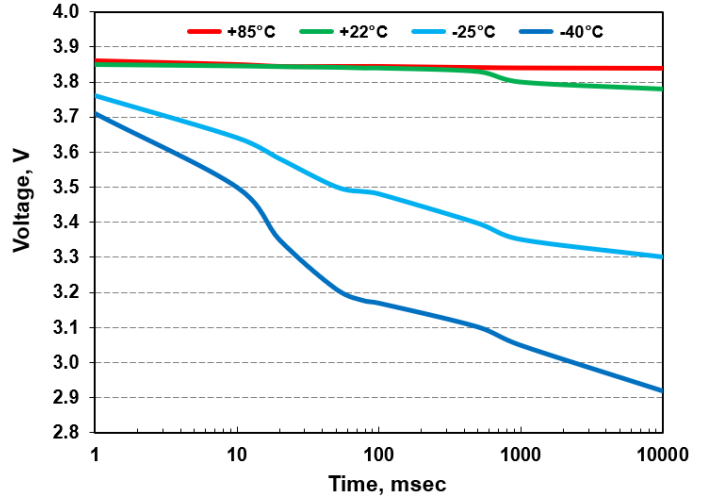
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Performance Data

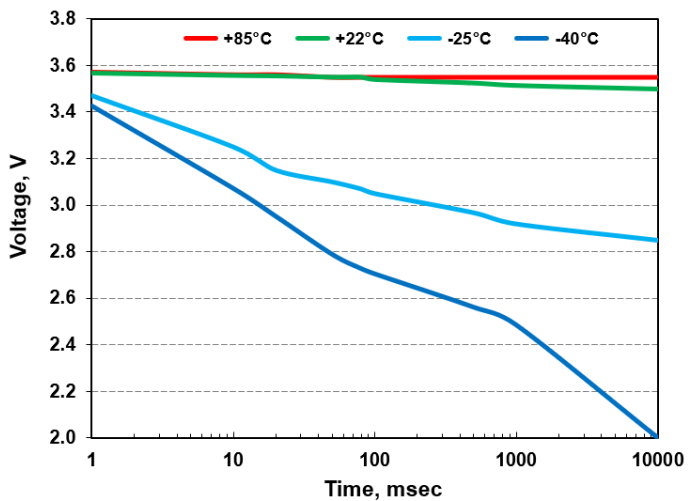
Voltage curves for HLC-1520A at Li/SOCl₂ potential (3.67V), 200 mA



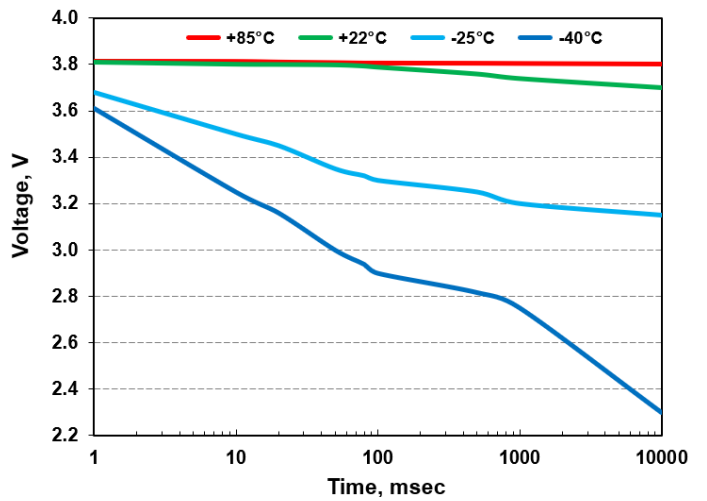
Voltage curves for HLC-1520A at Li/SO₂Cl₂ potential (3.90V), 200 mA



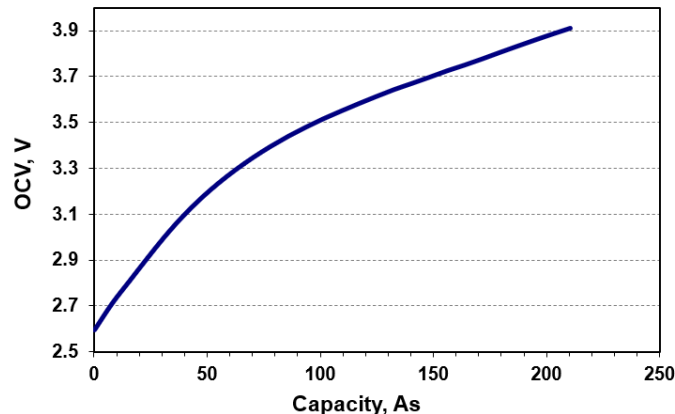
Voltage curves for HLC-1520A at Li/SOCl₂ potential (3.67V), 350 mA



Voltage curves for HLC-1520A at Li/SO₂Cl₂ potential (3.90V), 350 mA



Discharge capacity vs. OCV for HLC-1520A (at RT, 50 mA discharge)



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