



1/2AAA 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	21.5 mm. max.
Diameter	10.5 mm. max.
Weight	4.2 g. max.

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

Capacity when charged to 3.67V	65 As
Capacity when charged to 3.90V	105 As
Maximum Discharge Current	
Continuous	250 mA
1 second pulse	2000 mA
Operating temperature range	-40 to +85 °C*
Storage temperature range	-55 to +85 °C*
* For applications requiring higher temperature limits, contact Tadiran Technical Support.	
Self discharge in PulsesPlus™ battery at RT	1 µA
Self discharge in PulsesPlus™ battery at 80°C	5 µA
Impedance at RT	< 200 mΩ at 1 kHz

Shelf life at different storage temperatures

Temperature	HLC when not connected to a primary cell	HLC in PulsesPlus™ battery
RT	1 year	>10 years
60°C	2 weeks	10 years
80°C	1 week	2 years

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 8 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 are designed to meet the requirements of 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



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
- Very 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

Ordering P/N:

HLC-1020P7/S	61-1027-22000
HLC-1020P7/T	61-1027-22150
HLC-1020P7/TP	61-1027-29000

WARNING:

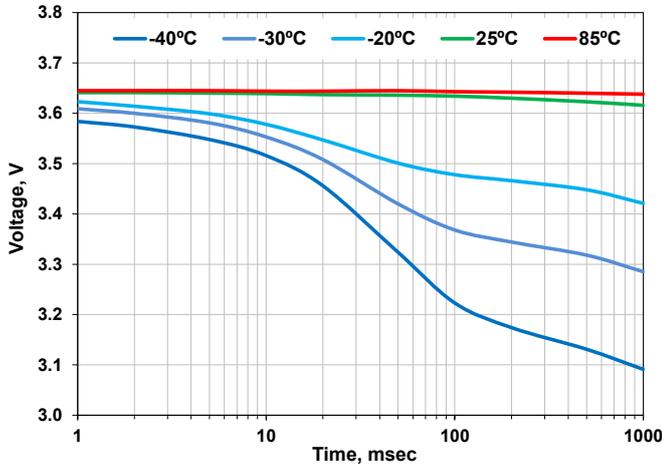
Fire, Explosion, And Severe Burn hazards.
 Do Not Crush, Disassemble, Heat Above 100°C, Short Circuit, Incinerate Or Expose Contents to water.

www.tadiranbatteries.com

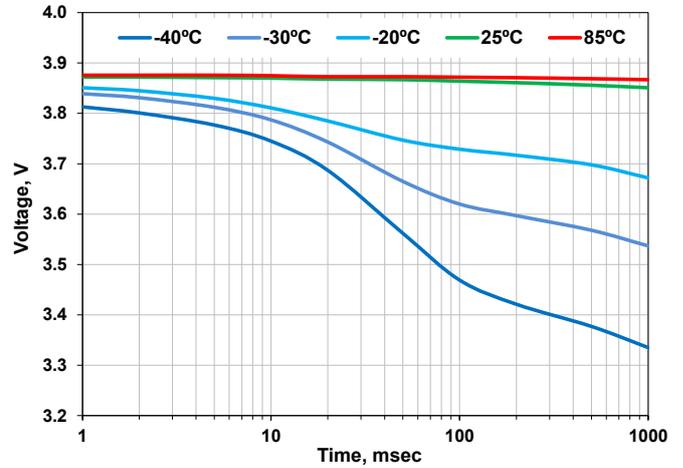
THE INFORMATION PROVIDED HERE IS NECESSARILY OF A GENERAL NATURE. SINCE SPECIFIC PERFORMANCE DEPENDS ON ACTUAL OPERATING AND STORAGE CONDITIONS, OUR ENGINEERS WILL PROVIDE PARTICULAR APPLICATION INSTRUCTIONS UPON REQUEST. DATA SUBJECT TO REVISION WITHOUT NOTICE. ANY REPRESENTATION IN THIS BROCHURE CONCERNING PERFORMANCE ARE FOR INFORMATION PURPOSES ONLY AND NOT WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF FUTURE PERFORMANCE. TADIRAN'S STANDARD LIMITED WARRANTY, STATED IN ITS SALES CONTRACT OR ORDER CONFIRMATION FORM IS THE ONLY WARRANTY OFFERED BY TADIRAN.

Performance Data

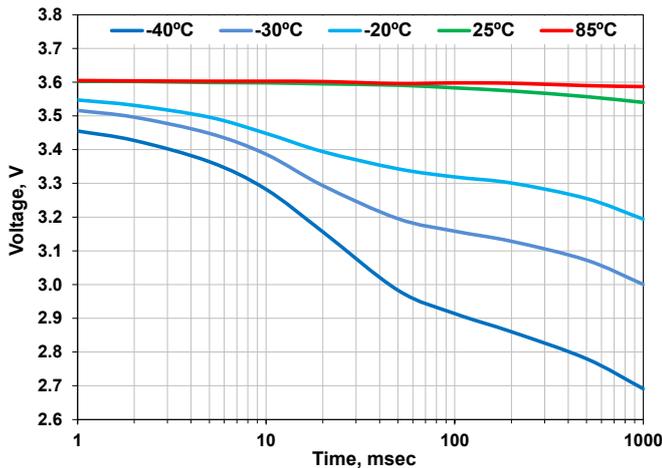
Voltage curves for HLC-1020P7 at Li/SOCl₂ potential (3.67V), 200 mA



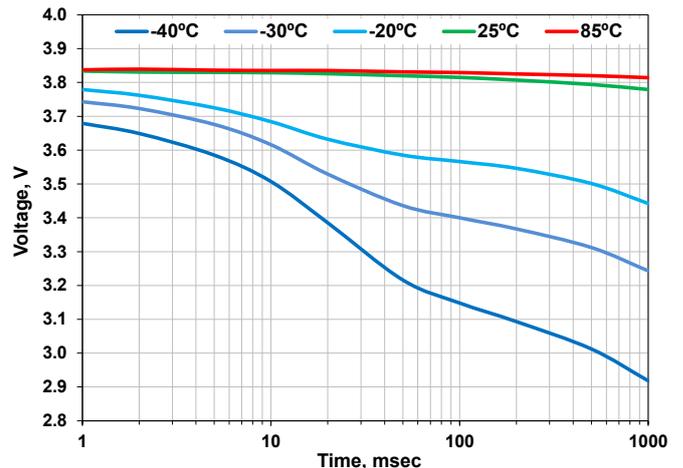
Voltage curves for HLC-1020P7 at Li/SO₂Cl₂ potential (3.90V), 200 mA



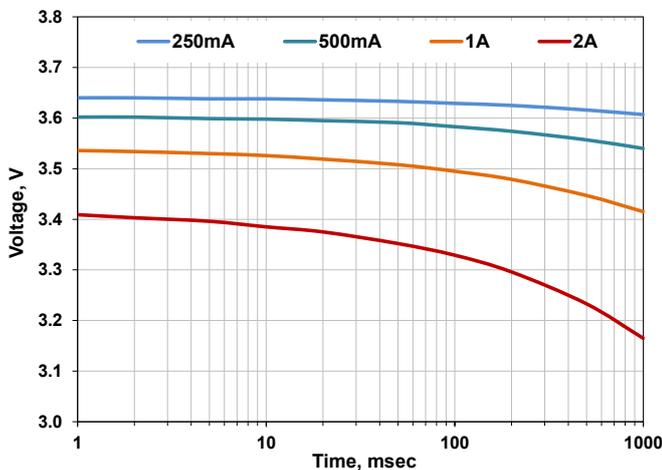
Voltage curves for HLC-1020P7 at Li/SOCl₂ potential (3.67V), 500 mA



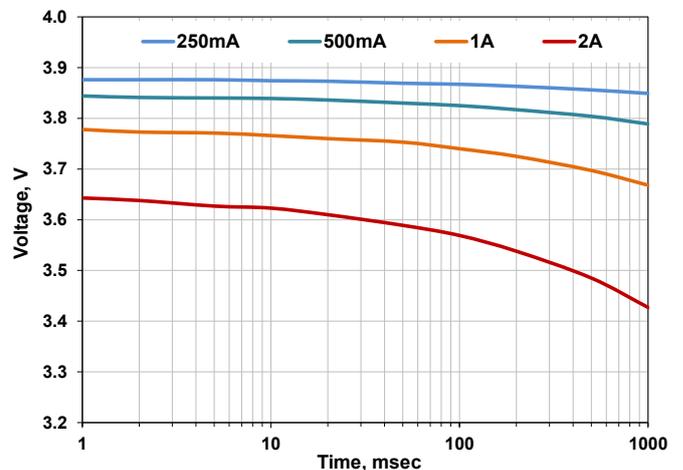
Voltage curves for HLC-1020P7 at Li/SO₂Cl₂ potential (3.90V), 500 mA



Voltage curves at RT for HLC-1020P7 at Li/SOCl₂ potential (3.67V)



Voltage curves at RT for HLC-1020P7 at Li/SO₂Cl₂ potential (3.90V)



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