

HLC – 1020 P6

Hybrid Layer Capacitor (HLC) For *PulsesPlus™* batteries (PRELIMINARY)

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

| | |
|---------------------------------|--|
| Capacity when charged to 3.67 V | 12 As |
| Capacity when charged to 3.90 V | 18 As |
| Discharge end voltage | 2.5 V (discharge below 2.5 V at RT may increase the HLC internal impedance). For other temperatures and discharge condition please contact Tadiran for these end voltage conditions. |

Mechanical characteristics

| | |
|----------|--------------------|
| Length | 21 -1 mm. |
| Diameter | 10.0 +0.5/-0.0 mm. |
| Weight | 4.2 gr. max |

Operating conditions

| | |
|--|-------------------|
| Maximum discharge current: | |
| Continuous | 250 mA |
| Pulse | 2000 mA |
| Charge (for HLC testing purpose only) | |
| Max. charge voltage | 3.95 V |
| Max. charge current | 8 mA |
| Operating & Storage temperature range | |
| HLC in PulsesPlus™ battery | -40 °C ÷ +85 °C |
| Storage temperature range for HLC | -40 °C ÷ +60 °C |
| Cell impedance at RT | < 200 mΩ at 1 kHz |
| Self discharge in PulsesPlus™ battery at RT | 1 µA |
| Self discharge in PulsesPlus™ battery at 80 °C | 5 µA |

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

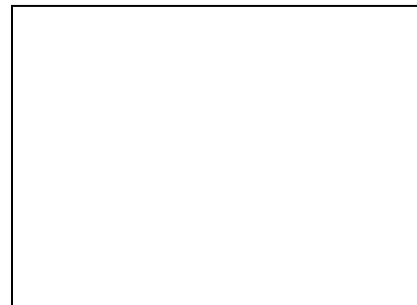
| Temperature | HLC | HLC in <i>PulsesPlus™</i> battery |
|-------------|---------|-----------------------------------|
| RT | 1 years | >10 years |
| 60 °C | 2 weeks | 10 years |
| 80 °C | 1 week | 2 years |

Safety

Tested according to:

| | |
|--|-------------|
| Short circuit at RT and at +55 °C | UL, UN, IEC |
| Oven at +150 °C | UL, IEC |
| Over-charge & over-discharge (200 % at currents up to 80 mA) | UL, UN, IEC |
| Impact | UL, UN, IEC |
| Compression | UL, IEC |
| Shock and Vibration | UL, IEC |

UN Manual of Tests and Criteria, UL 1642 (pending), IEC 60086 (pending)



Technology

- Anode: Carbon based
- Cathode: Multi metal oxides
- Electrolyte: Organic

Key Features

- Hermetically sealed (glass-to-metal)
- Wide operating temperature range
- Low self discharge
- End of life indication capability
- High reliability
- Lightweight
- Shut down separator
- Safe design

Main Applications

- Utility Meters (AMR)
- Asset, Container & Cargo Tracking
- RFID Devices
- Sonar Buoys
- Communication Equipment
- Emergency & Medical Devices

Ordering Part No.

- HLC-1020 P6/S 61102622000
- HLC-1020 P6/T 61102622150

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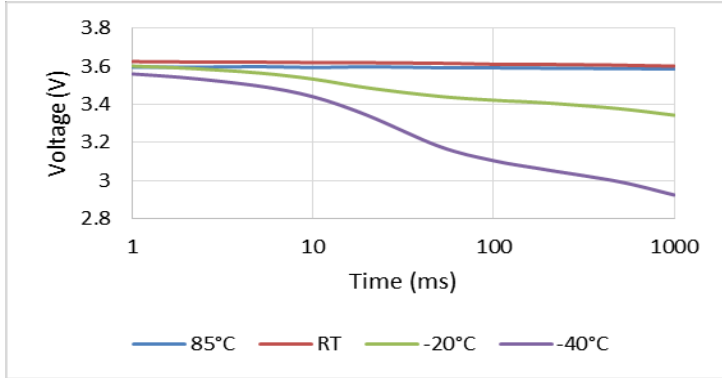
www.tadiranbatteries.com

WARNING:
Fire, Explosion, And Severe Burn Hazard.
Do Not Recharge, Crush, Disassemble, Heat
Above 100°C, Incinerate Or Short Circuit.

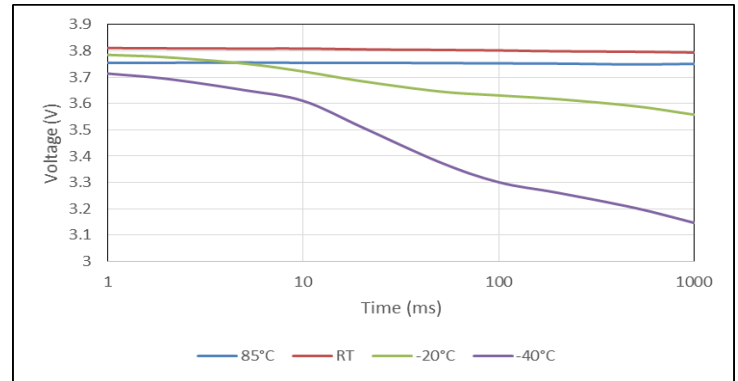
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Performance data

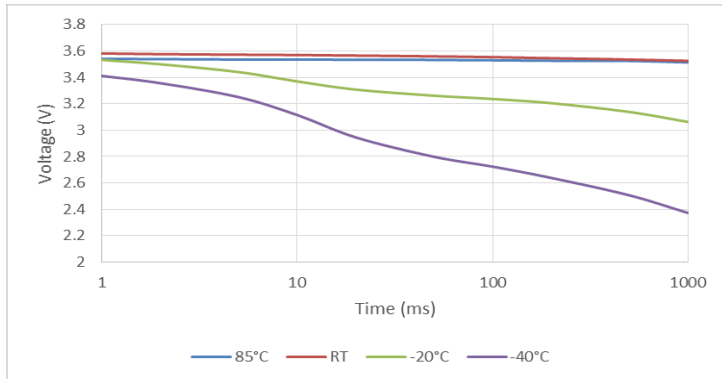
Voltage curves for HLC1020 P6 at Li/SOCl₂ potential (3.67 V), 200 mA



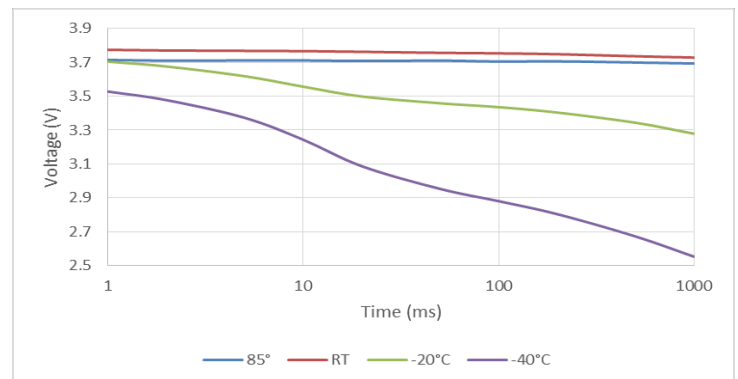
Voltage curves for HLC1020 P6 at Li/SO₂Cl₂ potential (3.90 V), 200 mA



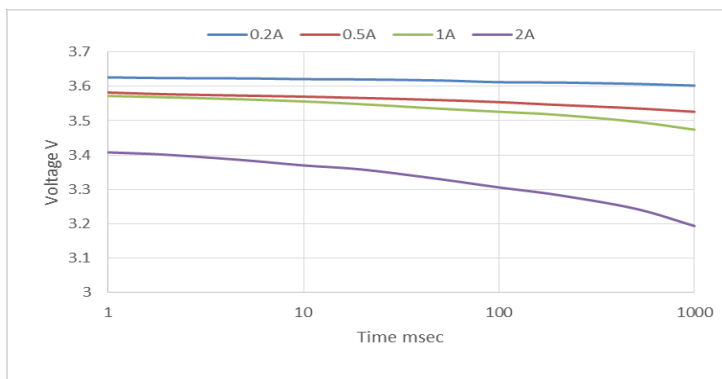
Voltage curves for HLC1020 P6 at Li/SOCl₂ potential (3.67 V), 500 mA



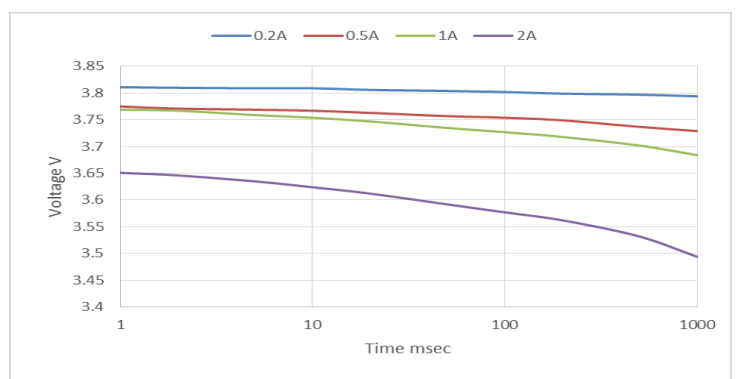
Voltage curves for HLC1020 P6 at Li/SO₂Cl₂ potential (3.90 V), 500 mA



Voltage curves, @ RT, for HLC1020 P6 at Li/SOCl₂ potential (3.67 V)

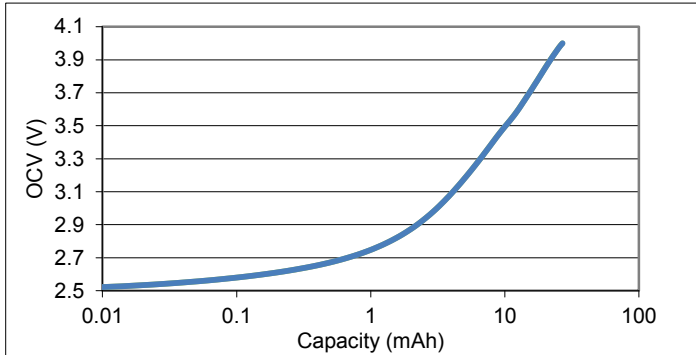


Voltage curves, @ RT, for HLC1020 P6 at Li/SO₂Cl₂ potential (3.90 V)



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Discharge capacity vs. OCV for HLC1020 P6 (at RT, 1 mA discharge)



Warning:

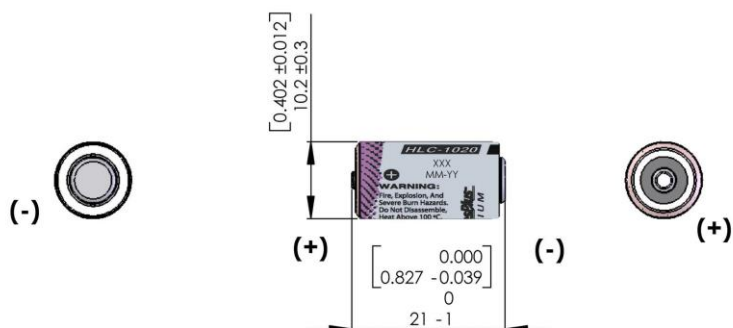
- The HLC is designed for use in a PulsesPlus™ battery or in low charge current as specified only. The HLC may explode or violently vent if over-charge above 4.4V.
- Charging the HLC at above 3.95 V may lead to capacity loss and / or internal impedance rise.
- Do not charge the HLC higher than 4.1 V,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

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Lead terminations

HLC-1020 P6/S (Standard Contacts)

Cat. # 61102622000



HLC-1020 P6/T (Soldering Tabs)

Cat. # 61102622150

