

# TLI-1020A



## 1/2AAA Size Rechargeable Lithium Ion Battery

**Notice:** The application load profile has to be approved by Tadiran.

Charging circuits and protections have to be designed in line with Tadiran guidelines.



### Physical Characteristics

Length	21.5 mm. max
Diameter	10.5 mm. max
Weight	4.2 gr. max

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

#### Charge

Maximum Charge Voltage	4.1 V
Charge Method	CCCV (Constant Current/Constant Voltage)
Maximum Charge Current @ -20 to +50 °C	8 mA
Maximum Charge Current @ -40 to +85 °C	4 mA

For higher charging currents please consult Tadiran.

#### Discharge

Maximum Discharge Current @ 20 °C	
Continuous to 2.0 V (without PTC)	0.4 A
1 second pulse to 2.0 V	0.8 A
Charge / Discharge operating temperature	-40 to +85 °C
Storage Temperature Range	-55 to +85 °C
Cell impedance	< 600 mΩ at 1 kHz

### Performance

Item	Value	Conditions
Maximum Capacity when charged to 4.1 V	21 mAh	Discharge at 10 mA to 2.0 V at 20 °C
	18 mAh	Discharge at 100 mA to 2.0 V at 20 °C
	13 mAh	Discharge at 100 mA to 2.0 V at -20 °C
Charge / Discharge Cycles	5000	Charge 8 mA to 4.1 V EoC 1.6 mA, Discharge at 20 mA to 2.5 V at 20 °C
Capacity Retention after 100 cycles (reversible)	20 mAh	Discharge at 20 mA at 20 °C
Capacity Retention after 5 years at RT (reversible)	18 mAh	Discharge at 20 mA at 20 °C

### Physical Cell / Battery Protection (to be applied by the user)

Item	Specification
Overcharge protection	Cell voltage should not be higher than 4.3 V
Overdischarge protection	Cell voltage should not be lower than 2.0 V

### Battery pack assembly and usage considerations

- For 2 cells or more in series, voltage shall be monitored on each cell.
- For more than 2 cells in parallel, maximum charge current shall be limited to 20 mA for the whole pack.

### Safety Considerations

The cells successfully passed the following tests:

Altitude simulation  
Shock & Vibration  
Short Circuit at RT, +57 and +85 °C  
Heating at 130 °C  
Forced Discharge  
Crush and Impact  
Temperature Cycling  
Overcharge

UN Manual of Tests & Criteria

UL 1642, File MH12193

IEC 62133



### Key Features

- Hermetically sealed (glass-to-metal)
- Wide operating temperature range
- Low self-discharge
- High output current
- High homogeneity
- End of life indication capability
- High reliability
- Lightweight
- Safe design
- Assembled in custom packs (per request)

### Main Applications

- Emergency & Medical Devices
- Internet of things (IoT)
- Navigation systems
- BUB in Metering
- Electronical Grid Monitoring
- Wireless sensors
- Energy Harvesting
- Automotive
- Asset, Container & Cargo Tracking
- Telemetry

### Ordering P/N:

TLI-1020A/S	61-1025-14110
TLI-1020A/T	61-1025-14210
TLI-1020A/TP	61-1025-14310

#### WARNING:

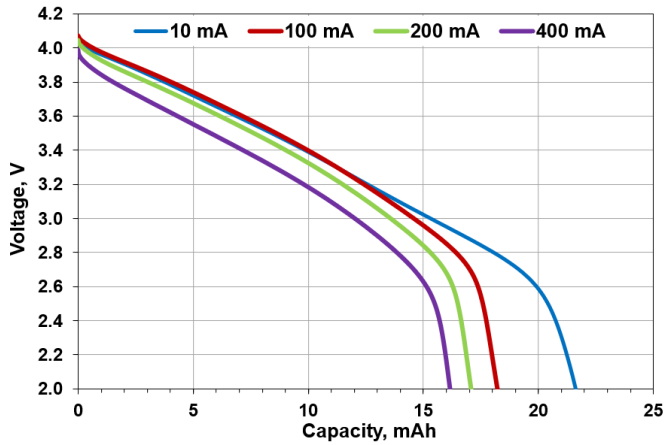
Fire, Explosion, And Severe Burn hazards.  
Do Not Crush, Disassemble, Heat Above 100°C, Short Circuit, Incinerate Or Expose Contents to water.

[www.tadiranbatteries.com](http://www.tadiranbatteries.com)

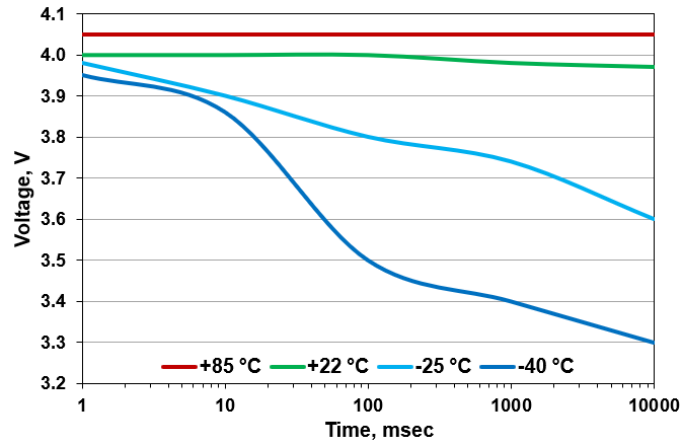
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## Performance Data

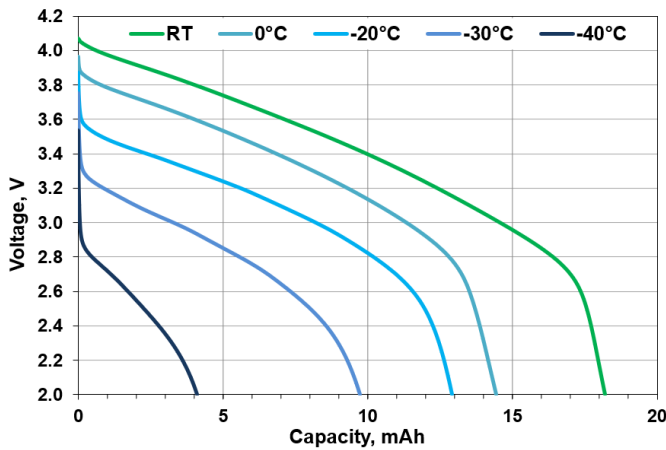
Discharge curves at Room Temperature



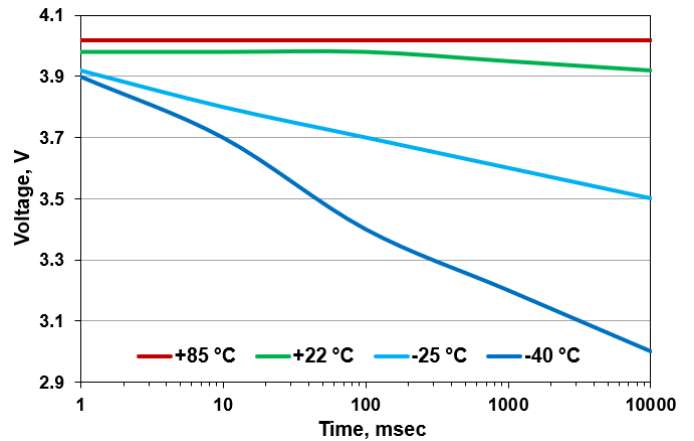
Voltage Curves at 60 mA



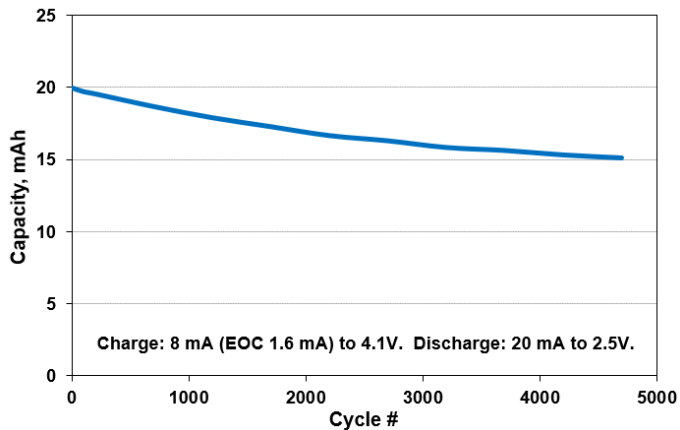
Discharge curves at 100 mA



Voltage Curves at 100 mA



Charge / Discharge Cycling Performance



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