

Tadiran High Power Lithium Organic Cell Model TLM-1520HPM (Preliminary)

1. Scope

This data sheet describes the mechanical design and performance of Tadiran high power lithium organic cell model TLM-1520HPM.

2. Characteristics

2.1. Physical

- 2.1.1. Length: 21 + 0.5/-1 mm.
- 2.1.2. Diameter: 14.8 ± 0.3 mm.
- 2.1.3. Weight: 9 gr. max.

2.2. Electrical

- 2.2.1. Open Circuit Voltage (for batteries stored at RT for 1 year or less) 3.95 to 4.07 V
- 2.2.2. Closed Circuit Voltage (at 0.1 sec) at 0.125 A load 3.88 V minimum
- 2.2.3. Discharge
 - Discharge capacity at 5 mA @ RT to 2.8 V 125 mAh
 - Discharge capacity at 125 mA @ RT to 2.8 V 100 mAh
 - Maximum discharge current
 - Continuous to 2.5 V: 1.75 A
 - 1 second pulse to 2.6 V: 3.75 A

2.3. Operating Temperature Range: -40 °C to 85 °C

2.4. accumulated Capacity Loss*:

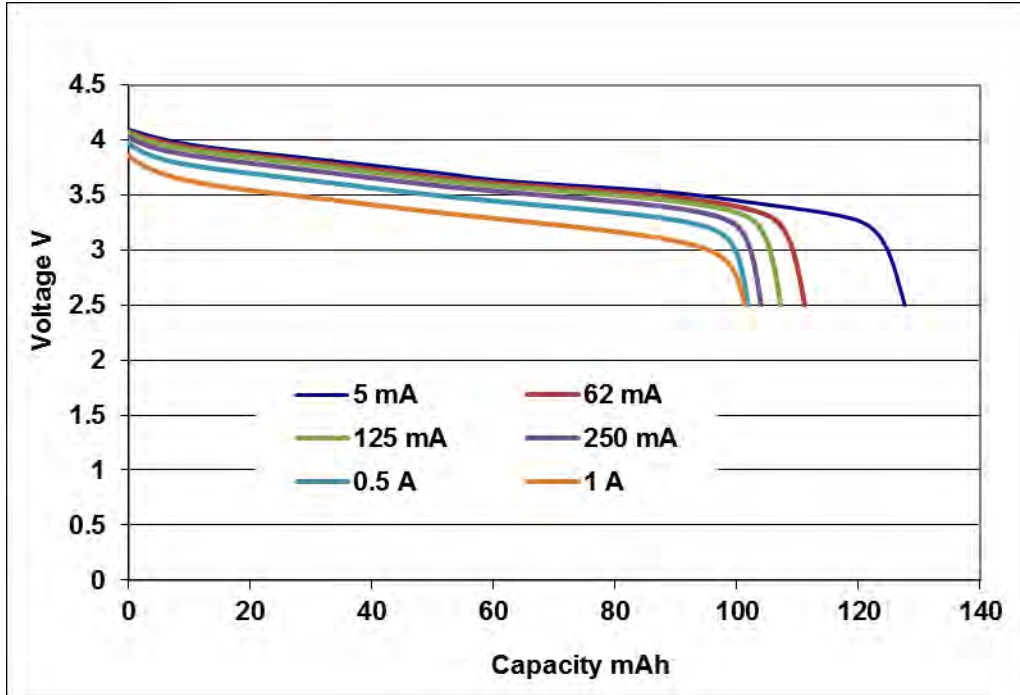
Storage Temperature	22 °C	55 °C	72 °C	85 °C
Storage Time [Y]				
1	3 %	6 %	10 %	TBD
5	7 %	22 %	40 %	N/A
10	11 %	32 %	N/A	N/A
15	15 %	42 %	N/A	N/A
20	18 %	N/A	N/A	N/A

* When tested at RT at 5 mA to 2.8 V

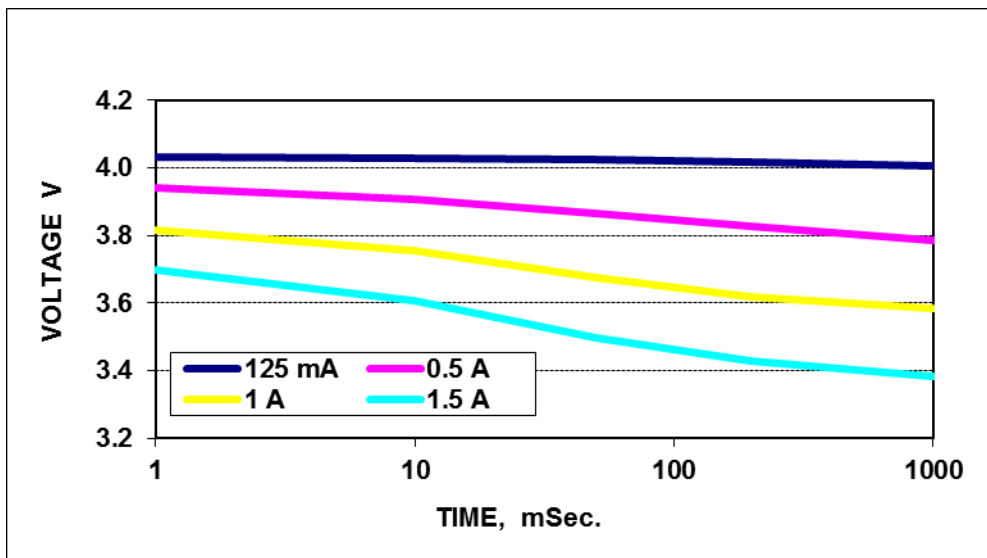
2.5. Cell impedance: Less than 100 mOhm @ 1kHz at room temperature.

2.6. Performance Data (Typical results for up to 5 years old cells):

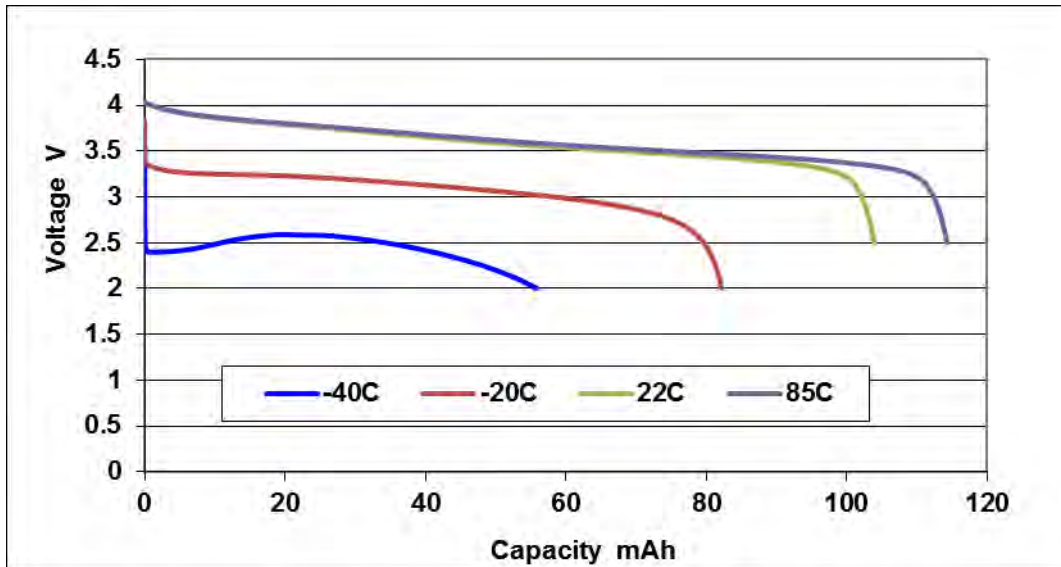
Discharge capability at RT



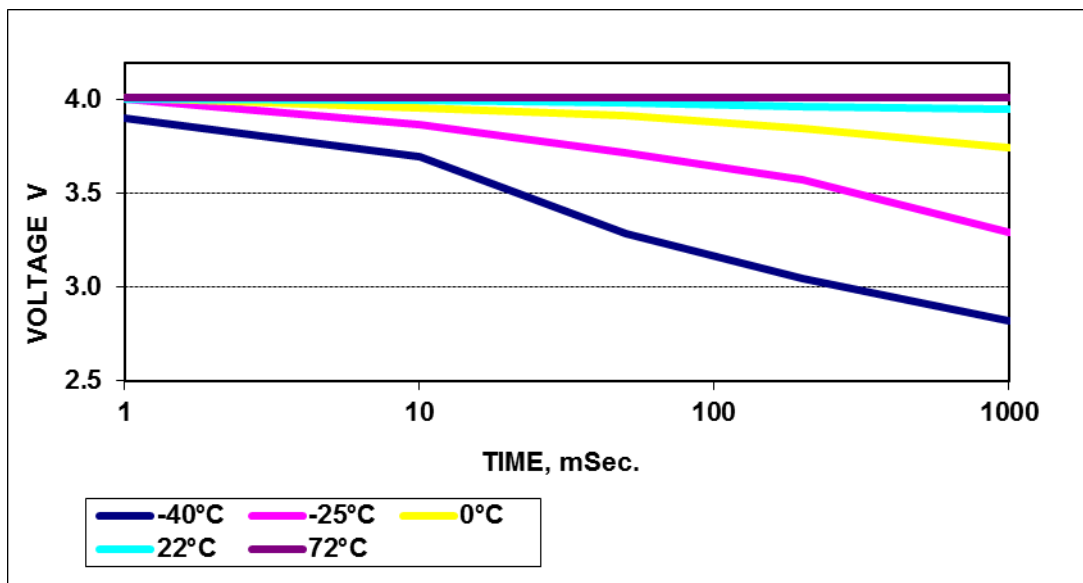
Pulse capability at RT



Discharge capability @ 250 mA at several temperatures



Pulse capability @ 0.25A at several temperatures

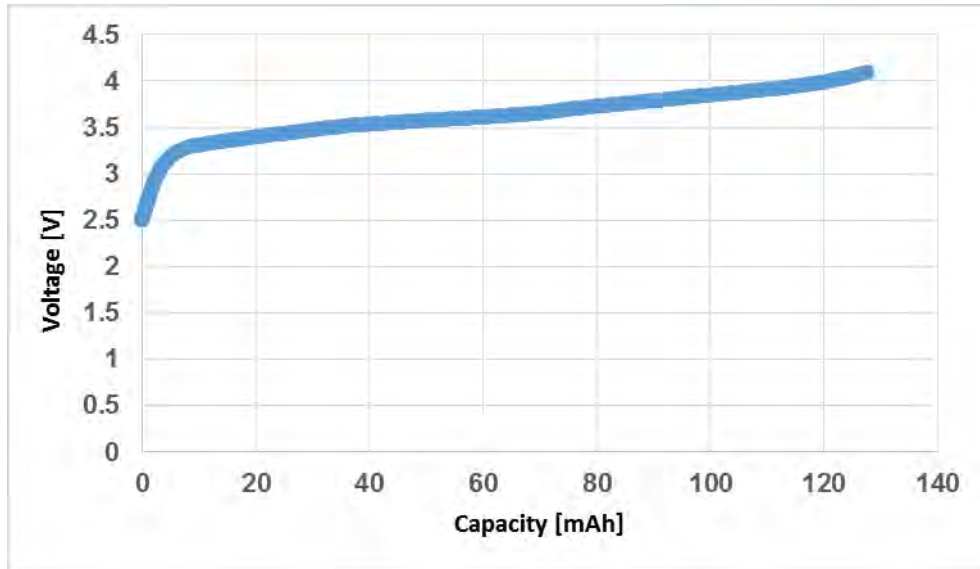


* Performance at 85°C is close to that at 72°C

2.7. End of life indication:

OCV measurements can provide a good estimation for the remaining capacity of the cell as shown below.

Capacity vs. OCV



2.8. Safety tests:

The cell has successfully passed the following safety tests:

- Short circuit at RT and at 55°C
- Oven at 150°C
- Impact
- Nail penetration
- Over charge (200% at currents up to 30 mA)
- Over discharge (200% at currents up to 1.25A)