Tadiran High Power Lithium Organic Cell
Model TLM-1550HP

1. Scope

This data sheet describes the mechanical design and performance of Tadiran high power lithium organic cell model TLM-1550HP.

2. Characteristics

2.1. Physical

- Length: 51.1 mm.
- Diameter: 14.8 ± 0.3 mm.
- Weight: 20 gr. max.

2.2. Electrical

- Open Circuit Voltage: 3.95 to 4.07 V (for batteries stored at RT for 1 year or less)
- Closed Circuit Voltage (at 0.1 sec) at 0.5 A load: 3.88 V minimum
- Discharge
  - Discharge capacity at 20 mA @ RT to 2.8 V: 500 mAh
  - Discharge capacity at 500 mA @ RT to 2.8 V: 430 mAh
- Maximum discharge current
  - Continuous to 2.5 V: 5 A
  - 1 second pulse to 2.6 V: 15 A

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

2.4. Accumulated Capacity Loss*:

<table>
<thead>
<tr>
<th>Storage Temperature</th>
<th>22 °C</th>
<th>55 °C</th>
<th>72 °C</th>
<th>85 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Time [Y]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3%</td>
<td>6%</td>
<td>10%</td>
<td>TBD</td>
</tr>
<tr>
<td>5</td>
<td>7%</td>
<td>22%</td>
<td>40%</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>11%</td>
<td>32%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>15%</td>
<td>42%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>20</td>
<td>18%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* 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**

![Discharge capability graph]

**Pulse capability at RT**

![Pulse capability graph]
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Discharge capability @ 1A at several temperatures

Pulse capability @ 1A at several temperatures

* Performance at 85°C is close to that at 72°C
Discharge capability @ 0.5A at several temperatures

Pulse capability @ 0.5A at several temperatures

* Performance at 85°C is close to that at 72°C
Discharge capability @ 0.1A at several temperatures

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

Pulse capability @ 0.1A at several temperatures
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**

![Graph showing Capacity vs. OCV](image)

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 and over discharge (200% at currents up to 2A)