Tadiran High Power Lithium Organic Cell
Model TLM-1550HPM

1. **Scope**

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

2. **Characteristics**

2.1. **Physical**

2.1.1. Length: 51.1 mm.

2.1.2. Diameter: 14.8 ± 0.3 mm.

2.1.3. Weight: 20 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 0.5 A load 3.88 V minimum

2.2.3. Discharge

- Discharge capacity at 20 mA @ RT to 2.8 V 500 mAh
- Discharge capacity at 500 mA @ RT to 2.8 V 420 mAh

Maximum discharge current

- Continuous to 2.5 V: 7 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>
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<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]
Discharge capability @ 2A at several temperatures

![Discharge capability graph]

Pulse capability @ 1A at several temperatures

![Pulse capability graph]

* 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**

![Capacity vs. OCV graph]

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)