FEATURES

Connectors
- 2 screw connectors for the sources.
- 1 screw connector for the storage element.
- 1 screw connector for the application circuit.
- 1 screw connector for RZMPP.
- 1 screw connector for 5 V DC power input.

Configuration
- 1 header SRCx_MODE[x] per source to define the source voltage regulation mode.
- 5 headers SRCx_CFG[x] per source to configure the source voltage regulation.
- 3 headers STO_CFG[x] to define the storage element protection levels.
- 3 headers LOAD_CFG[x] to configure the application circuit regulated voltage.
- 1 header THERM to enable/disable the thermal monitoring.
- 1 header to enable/disable the I²C functionalities.
- 1 header (6 pins) to connect the I²C communication related pins.
- 3 headers to configure the 5 V charge current.
- 1 header to enable/disable the shipping mode.

Size
- 79mm x 49mm.
- 4 x M2.5 mounting holes.

SUPPORT PCB
BOM around the AEM13920

Footprint & Symbol: Information available on the datasheet
STEP 1: AEM13920 Configuration

- **Storage element voltages protection:** STO_CFG[2:0]

<table>
<thead>
<tr>
<th>Configuration pins</th>
<th>Overcharge voltage (V)</th>
<th>Charge ready voltage (V)</th>
<th>Overcharge voltage (V)</th>
<th>Battery Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>STO_CFG[2:0]</td>
<td></td>
<td></td>
<td></td>
<td>Li-Ion Super Capacitor (LiC)</td>
</tr>
<tr>
<td>L L L</td>
<td>2.30</td>
<td>2.55</td>
<td>3.80</td>
<td>Li-Ion Super Capacitor (LiC)</td>
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<td>2.55</td>
<td>3.50</td>
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<td>3.90</td>
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<tr>
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<td>3.30</td>
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<tr>
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<td>2.60</td>
<td>2.80</td>
<td>3.80</td>
<td>Li-Ion battery</td>
</tr>
</tbody>
</table>

- **SRC1 and SRC2 voltage regulation mode and associated configurations:**
  - SRCx_MODE = L (constant voltage):
    - SRCx_MODE = L (constant voltage)
    - SRCx_MODE = H (MPPT)

- **Load configuration:** LOAD_CFG[2:0]

- **5 V charger configuration**

- **Thermal monitoring:** connect the jumper THERM to EN/DIS to enable/disable the thermal monitoring feature.

- **I²C communication:** all the configurations of the AEM, as well as various information, are available through I²C communication. See the datasheet for more details.
STEP 2: Connect the storage element with a voltage higher than 2.4 V.

STEP 3: Connect the source(s) or the 5 V power input.

STEP 4: Connect the application circuit.

- **Boost efficiency** ($L_{\text{BOOST}} = 33 \, \mu\text{H}$ Coilcraft LPS4018-333MRB):

- **Buck efficiency** ($L_{\text{BUCK}} = 10 \, \mu\text{H}$ Coilcraft LPS4018-103MRB):