Ultra Low Voltage Boost PMIC, Maximum Power Point Tracking

MB39C831 is a high efficiency, synchronous rectification boost DC/DC converter that can charge a Li-ion battery with a single solar cell and a multi-junction solar cell or Thermal Electric Generator (TEG). The DC/DC converter can extract the maximum power point (MPP) of the power source and safely charges into Li-ion battery with the protection function.

MB39C831 can start up from 0.35V also and operates at very low voltage. As such it is suitable for various applications driving from a single solar cell.

### FEATURE
- Input Voltage Range: 0.30V to 4.75V
- Lowest Start-Up Voltage: 0.35V
- Selectable Output Voltages:
  - 3.0V, 3.3V, 3.6V, 4.1V, 4.5V, 5.0V
- Quiescent Current (Constant Voltage Mode): 32uA (No Load)
- Input Peak Current Limit: 200mA
- Maximum Power Point Tracking (MPPT)
- Over Voltage/Current Protection for Charger
- Power-Save Mode:
- QFN40: 6.0mm × 6.0mm × 0.85mm
  (Pin pitch 0.5mm)

### Table

<table>
<thead>
<tr>
<th>Item</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Start-Up Voltage</td>
<td>VDD(Ta=25°C)</td>
<td>—</td>
<td>0.35</td>
<td>0.50</td>
<td>V</td>
</tr>
<tr>
<td>VDD Input Voltage</td>
<td>VDD</td>
<td>0.3</td>
<td>—</td>
<td>4.75</td>
<td>V</td>
</tr>
<tr>
<td>Output Voltage Select</td>
<td>MPPT_ENA=L S[2:0]=0h-Sh</td>
<td>3.0</td>
<td>—</td>
<td>5.0</td>
<td>V</td>
</tr>
<tr>
<td>Quiescent Current</td>
<td>Battery Charging Mode</td>
<td>—</td>
<td>41</td>
<td>82</td>
<td>uA</td>
</tr>
<tr>
<td>Constant Voltage Mode</td>
<td>—</td>
<td>32</td>
<td>64</td>
<td></td>
<td>uA</td>
</tr>
<tr>
<td>Operating Ambient Temperature</td>
<td>Ta</td>
<td>—40</td>
<td>—</td>
<td>+85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Note: Green IT Award is an Japanese Prize.
**APPLICATION**

- Solar Energy Harvesting
- Thermal Energy Harvesting
- Cell Phone
- eBook
- Electronic Dictionary
- Wireless Sensor Node

**WEB DESIGN SIMULATION SERVICE**