L6984, L6986
Energy saving synchronous DC-DC converters for industrial applications

Up to 2 A and up to 38 V input voltage range synchronous step down with extremely low quiescent current

ST’s L6984 and L6986 are perfect solutions for industrial applications. These devices are able to provide up to 2 A of continuous output current and with a wide input voltage range from 4 V up to 38 V, accordingly to the part number chosen. High flexibility is given by several adjustable parameters, like output voltage, switching frequency and synchronization capability. Moreover the extreme low operating quiescent current makes these devices suitable for energy saving and low power consumption stand-by applications.

KEY FEATURES
- High switching frequency up to 2 MHz
- Wide input voltage range up to 38 V
- Very low operating quiescent current 30 uA
- Synchronous rectification
- Full embedded protection

KEY APPLICATIONS
- Industrial application
- Factory automation
- Building automation
- PLCs
- 12 V bus applications

KEY BENEFITS
- High efficiency at full and light load
- High robustness and reliability
- High design flexibility
- Low BOM cost
- Power saving
# Block Diagram

![Block Diagram](image)

## Device Summary

<table>
<thead>
<tr>
<th>Part Number</th>
<th>L6984</th>
<th>L6984A</th>
<th>L6986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package</td>
<td>DFN4x4 10L</td>
<td>DFN3x3 10L</td>
<td>HTSSOP 16</td>
</tr>
<tr>
<td>Input voltage range (V)</td>
<td>4.5 to 36</td>
<td>4.5 to 36</td>
<td>4 to 38</td>
</tr>
<tr>
<td>Output current max (A)</td>
<td>0.4</td>
<td>0.4</td>
<td>2</td>
</tr>
<tr>
<td>Operating quiescent current max (µA)</td>
<td>100</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>High side RDSON (Ω)</td>
<td>1.3</td>
<td>1.3</td>
<td>0.18</td>
</tr>
<tr>
<td>Low side RDSON (Ω)</td>
<td>1</td>
<td>1</td>
<td>0.11</td>
</tr>
<tr>
<td>Output voltage range (V)</td>
<td>3.3 fixed 0.9 to 95% (V_{\text{in}}) adjustable</td>
<td>3.3 fixed 0.9 to 95% (V_{\text{in}}) adjustable</td>
<td>0.85 to (V_{\text{in}})</td>
</tr>
<tr>
<td>Switching frequency (kHz)</td>
<td>200 to 600</td>
<td>200 to 600</td>
<td>250 to 2000</td>
</tr>
<tr>
<td>External synchronization frequency (kHz)</td>
<td>N.A.</td>
<td>N.A.</td>
<td>Up to 2000</td>
</tr>
<tr>
<td>Low noise/low consumption selection mode</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Additional features</td>
<td>Enable pin, PGood</td>
<td>Enable pin, PGood</td>
<td>Enable pin, Adjustable soft start and reset</td>
</tr>
<tr>
<td>Operating junction temperature (Tj °C)</td>
<td>-40, 150</td>
<td>-40, 150</td>
<td>-40, 150</td>
</tr>
</tbody>
</table>

(*) Coming soon