**LT8625S**

18V/8A Step-Down Silent Switcher 3 with Ultralow Noise Reference

**FEATURES**
- Silent Switcher®3 Architecture
  - Ultralow RMS Noise (10Hz to 100kHz): 4μV_{RMS}
  - Ultralow Spot Noise: 4nV/√Hz at 10kHz
  - Ultralow EMI Emissions on Any PCB
  - Internal EMI Bypass Raditated EMIs
- High Efficiency at High Frequency
- Ultrafast Transient Response with High Gain Error Amplifier
- Input Voltage Range: 2.7V to 18V
- Output Voltage Range: 0V to (PV_{IN} - 0.5V)
- 8A Maximum Continuous Output Current
- Fast Minimum Switch On-Time: 15ns
- Precision Current Reference: 100μA ± 0.8% Over Temperature with Remote Sense
- PolyPhase® Operation: Up to 12 Phases
- Forced Continuous Mode Capability
- Adjustable and Synchronizable: 300kHz to 4MHz
- Programmable Power Good
- Small 20-Lead 4mm × 3mm LQFN Package

**APPLICATIONS**
- RF Power Suppliers: PLLs, VCOs, Mixers, LNAs, PAs
- High Speed/High Precision ADCs/DACs
- Low Noise Instrumentation

**DESCRIPTION**

The LT®8625S synchronous step-down regulator features third-generation Silent Switcher technology which is uniquely designed to combine an ultralow noise reference with Silent Switcher architecture in order to achieve both high efficiency and excellent wideband noise performance.

The innovative ultralow noise architecture provides exceptional low frequency (0.1Hz to 100kHz) output noise performance in a switching regulator. The output voltage can be programmed with a single resistor, providing unity-gain operation over the output range, resulting in virtually constant output noise independent of output voltage.

Silent Switcher architecture minimizes EMI emissions while delivering high efficiency at high switching frequencies.

The LT8625S is ideal for high current, noise sensitive applications which benefit from the high efficiency of a synchronous switching regulator.

**PACKAGE SIZE**

<table>
<thead>
<tr>
<th>PACKAGE SIZE</th>
<th>MAX TEMPERATURE</th>
<th>EXPOSED BACK</th>
<th>INTV_{CC} CAPACITOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT8625S</td>
<td>125°C</td>
<td>No</td>
<td>Internal</td>
</tr>
<tr>
<td>LT8625SP</td>
<td>150°C</td>
<td>Yes</td>
<td>External</td>
</tr>
<tr>
<td>LT8625SP-1</td>
<td>150°C</td>
<td>Yes</td>
<td>External</td>
</tr>
</tbody>
</table>

Note: The LT8625SP-1 (8A) is Pin-to-Pin Compatible with the LT8627SP (16A).

**TYPICAL APPLICATION**

[Diagram of LT8625S application]

- PV_{IN}=3.3V
- SV_{IN} to 1 V_{OUT} Efficiency
- Power Loss (%)
- Load Current (A)

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