

18V, 2A/4A Step-Down Silent Switcher 3 with Ultralow Noise Reference

FEATURES

- ▶ **Silent Switcher®3 Architecture**
 - ▶ **Ultralow RMS Noise (10Hz to 100kHz): $4\mu\text{V}_{\text{RMS}}$**
 - ▶ **Ultralow Spot Noise: $4\text{nV}/\sqrt{\text{Hz}}$ at 10kHz**
 - ▶ **Ultralow EMI Emissions on Any PCB**
 - ▶ **Internal Bypass Capacitors Reduce Radiated EMI**
- ▶ **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 $(\text{PV}_{\text{IN}} - 0.5\text{V})$**
- ▶ **2A/4A Maximum Continuous Output Current**
- ▶ **Fast Minimum Switch On-Time: 12ns**
- ▶ **Precision Current Reference: $100\mu\text{A} \pm 0.8\%$ Over Temperature**
- ▶ **Differential Remote Sense Ensures Accuracy Over Load**
 - ▶ PolyPhase® Operation: Up to 12 Phases
 - ▶ Forced Continuous Mode Capability
 - ▶ Adjustable and Synchronizable: 300kHz to 6MHz
 - ▶ Programmable Power Good
 - ▶ Small 20-Lead 4mm x 3mm LQFN Package

APPLICATIONS

- ▶ RF Power Supplies: PLLs, VCOs, Mixers, LNAs, PAs
- ▶ High Speed/High Precision ADCs/DACs
- ▶ Low Noise Instrumentation

GENERAL DESCRIPTION

The LT®8622S/LT8624S 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 and 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 LT8622S/LT8624S is ideal for high-current, noise-sensitive applications that benefit from the high efficiency of a synchronous switching regulator.

For more information about the LT8622S/LT8624S, contact BUC_Doc_Request@analog.com.

	CURRENT RATING	MAX TEMP	EXPOSED BACK	INTV _{CC} CAPACITOR
LT8622S	2A	125°C	No	Internal
LT8624S	4A	125°C	No	Internal
LT8625S	8A	125°C	No	Internal
LT8625SP	8A	150°C	Yes	External

Note: The LT8622S/LT8624S/LT8625S/LT8625SP are Pin-to-Pin Compatible.

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TYPICAL APPLICATION

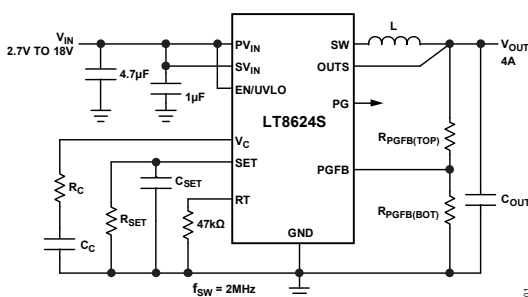


Figure 1. LT8624S Simplified Application Diagram

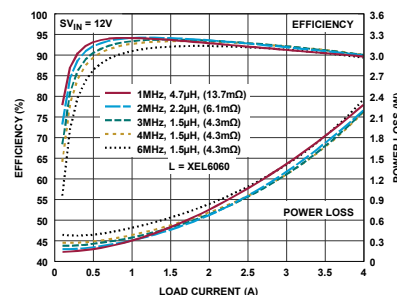


Figure 2. 12V_{IN} to 5V_{OUT} Efficiency

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