

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

## FEATURES

- **Silent Switcher<sup>®</sup>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 ( $\text{PV}_{\text{IN}} - 0.5\text{V}$ )**
- **8A Maximum Continuous Output Current**
- **Fast Minimum Switch On-Time: 15ns**
- **Precision Current Reference:  $100\mu\text{A} \pm 0.8\%$  Over Temperature with Remote Sense**
- **PolyPhase<sup>®</sup> Operation: Up to 12 Phases**
- **Forced Continuous Mode Capability**
- **Adjustable and Synchronizable: 300kHz to 4MHz**
- **Programmable Power Good**
- **Small 20-Lead 4mm × 3mm (LT8625SP) or 24-Lead 4mm × 4mm (LT8625SP-1) LQFN Exposed Back Package for Optional Heat Sink Mount**

## APPLICATIONS

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

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## DESCRIPTION

The LT<sup>®</sup>8625SP/LT8625SP-1 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 top of the package features exposed die for optional heat sink attachment which can be used to significantly improve thermal performance.

The LT8625SP/LT8625SP-1 is ideal for high current, noise sensitive applications which benefit from the high efficiency of a synchronous switching regulator.

	PACKAGE SIZE	MAX TEMP	EXPOSED BACK	INTV <sub>CC</sub> CAPACITOR
LT8625S	4mm × 3mm	125°C	No	Internal
LT8625SP	4mm × 3mm	150°C	Yes	External
LT8625SP-1	4mm × 4mm	150°C	Yes	External

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

## TYPICAL APPLICATION



