



20V, 20A Monolithic Synchronous Step-Down Regulator with Ultralow DCR Current Sensing for Higher Efficiency

MILPITAS, CA – March 28, 2016 – Linear Technology Corporation introduces the [LTC7130](#), a constant frequency peak current mode synchronous step-down DC/DC converter with temperature-compensated ultralow DCR current sensing and clock synchronization. The device's unique architecture eases compensation and offers the ability to directly parallel multiple ICs for higher current capability. It also enhances the signal-to-noise ratio of the current sense signal, enabling the use of a very low DC resistance power inductor to maximize efficiency in high current applications. This feature also reduces the switching jitter commonly found in low DCR applications and improves current limit accuracy. The LTC7130's 4.5V to 20V input range supports a wide variety of applications, including most intermediate bus voltages, and is compatible with many battery types. Integrated N-channel MOSFETs can deliver continuous load currents as high as 20A at output voltages ranging from 0.6V to 5.5V, making it ideal for point-of-load applications such as high current / low voltage DSP / FPGA / ASIC reference designs. Other applications include telecom/datacom systems, distributed power architectures and general high power density systems.

The LTC7130's low 90ns minimum on-time allows for a high step-down ratio power supply at high frequency operation. The operating frequency is selectable from 250kHz to 770kHz and can be synchronized to an external clock. The LTC7130's total differential output voltage accuracy is $\pm 0.5\%$ over the -40°C to 125°C operating junction temperature range. Additional features include a high speed differential remote sense amplifier, programmable output current limit, output short-circuit protection with soft recovery, programmable soft-start/tracking, EXTV_{CC} for reduced power dissipation and a fault indicator for output UV/OV conditions.

The LTC7130 is available in a thermally enhanced $6.25\text{mm} \times 7.5\text{mm} \times 2.22\text{mm}$ BGA package, with both RoHS lead-free and leaded SnPb (63/37) finishes. The E-and I-grades are

guaranteed from -40°C to 125°C operating junction temperature range. The 1,000-piece price starts at \$7.95 each for the E grade. All versions are available from stock. For more information, visit www.linear.com/product/LTC7130.

Photo Caption: 20V_{IN}, 20A Monolithic Synchronous Buck Converter with Differential Output Sensing


Summary of Features: LTC7130

- Wide V_{IN} Range: 4.5V to 20V
- Optimized for Low Duty Cycle Applications
- High Efficiency: Up to 95%
- Proprietary Current Mode Architecture
- High Current Parallel Operation
- Ultralow DCR Current Sensing with Temperature Compensation
- Programmable Output Current Limit
- High Speed Differential Remote Sense Amplifier
- $\pm 0.5\%$ Output Voltage Regulation Accuracy
- Output Short-Circuit Protection with Soft Recovery
- Programmable Soft-Start, Tracking
- Programmable & Synchronizable Fixed Frequency from 250kHz to 770kHz
- EXT_{VCC} for Reduced Power Dissipation
- Fault Indicator for Output UV/OV Conditions
- 6.25mm × 7.5mm × 2.22mm BGA Package

Pricing shown is for budgetary use only and may differ due to local duties, taxes, fees and exchange rates.

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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