



Quad Output Multiphase Step-Down DC/DC Controller Operates with DrMOS or Power Blocks to Deliver Up to 260A

MILPITAS, CA – February 8, 2016 – Linear Technology Corporation introduces the [LTC7851/-1](#), a quad output multiphase synchronous step-down DC/DC controller with accurate current sharing between phases and differential output voltage sensing. This controller works in conjunction with external power train devices such as DrMOS and power blocks as well as discrete N-channel MOSFETs and associated gate drivers, enabling flexible design configurations. Up to 8 phases with two ICs can be paralleled and can be clocked out-of-phase to minimize input and output filtering for very high current requirements up to 260A. Applications include power distribution and industrial systems, FPGA, DSP, processor and ASIC supplies.

The LTC7851/-1's internal current share loop equalizes current between phases when paralleled, enabling accurate current sharing between phases across multiple ICs, both in steady state and during a transient event. It operates with a V_{CC} supply voltage from 3V to 5.5V, is designed for step-down conversion from an input voltage from 3V to 27V and produces one to four independent output voltages ranging from 0.6V to 5V. The device's voltage mode control architecture allows for a selectable fixed operating frequency from 250kHz to 2.25MHz or it can be synchronized to an external clock over the same range. The output current is sensed by monitoring the voltage drop across the output inductor (DCR) for maximum efficiency or by using a low value sense resistor. The onboard differential amplifiers provide true remote output voltage sensing for all outputs of both V_{OUT} and ground terminals for high accuracy regulation.

The LTC7851-1 is similar to the LTC7851, but with a lower current sense amplifier gain, ideal for power train applications using DrMOS with internal current sense capability. Additional features for each phase include current monitoring, adjustable current limit, programmable soft-start or tracking, and a power good signal. Furthermore, it maintains $\pm 0.75\%$ reference voltage accuracy over an operating temperature range of -20°C to 85°C .

The LTC7851/-1 is housed in a 58-lead 5mm x 9mm QFN package and is available from stock. The 1000-piece price starts at \$4.27 each. For more information, visit www.linear.com/product/LTC7851.

Photo Caption: Quad Synchronous Step-Down DC/DC Controller

Summary of Features: LTC7851/-1

- Supports One to Four Independent Outputs
- Works with DrMOS, Power Blocks or External MOSFETs & Drivers for Power Train Devices
- V_{CC} Ranging from 3V to 5.5V
- V_{IN} from 3V to 27V
- V_{OUT} from 0.6V to 5V
- Output Current Up to 260A
- Multiphase Operation
- Accurate Current Sharing Between Phases
- Differential Amplifiers for Remote Voltage Sensing of All Outputs
- Phase Lockable Fixed Operating Frequency from 250kHz to 2.25MHz
- DCR or R_{SENSE} Output Current Sense
- Current Monitoring
- Adjustable Current Limit
- Adjustable Soft-Start or Tracking
- Power Good Outputs
- $\pm 0.75\%$ Reference Voltage Accuracy over -20°C to $+85^{\circ}\text{C}$

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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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