



## **Sub-Milliohm DCR Sensing Dual Multiphase Current-Mode Synchronous Step-Down DC/DC Controller**

MILPITAS, CA – October 30, 2013 – Linear Technology Corporation introduces the [LTC3774](#), a current-mode dual output synchronous step-down DC/DC controller that enables the use of very low DC resistance (DCR) power inductors by enhancing the current-sense signal. Power inductor DCRs down to 0.2 milliohms can be utilized to maximize converter efficiency (up to 95%), increase power density and reduce the output ripple voltage in high current applications. This new DCR sensing technique also reduces the switching jitter normally associated with low DCR resistance applications. DCR temperature compensation maintains a constant and accurate current limit threshold over a broad temperature range.

The LTC3774 works in conjunction with external power train devices such as Power Blocks and DrMOS, as well as discrete N-channel MOSFETs and associated gate drivers, enabling flexible design configurations. The LTC3774 operates over an input voltage range of 4.5V to 38V and produces a fixed output voltage from 0.6V to 3.5V. Up to 12 phases can be paralleled and clocked out-of-phase to minimize input and output filtering for very high current requirements up to 360A. Applications include high current power distribution, redundant (n+1) supplies, industrial systems, DSP and ASIC power.

The LTC3774 has a selectable fixed operating frequency from 200kHz to 1.2MHz or it can be synchronized to an external clock. The dual differential amplifiers provide true remote output voltage sensing of both output voltages. Its adjustable current limit can be configured for very low sense voltages from 10mV to 30mV to minimize power loss. Furthermore, the LTC3774 has adjustable soft-start or tracking and maintains  $\pm 0.75\%$  output voltage accuracy over an operating temperature range of -40°C to 125°C.

The LTC3774 is housed in a 36-lead 5mm x 6mm QFN package and is available from stock. 1000-piece pricing starts at \$2.95 each. For more information, visit [www.linear.com/product/LTC3774](http://www.linear.com/product/LTC3774)


**Photo Caption:** Sub-Milliohm Current-Mode Dual Step-Down DC/DC Controller

## Summary of Features: LTC3774

- Sub-Milliohm DCR Current Sensing – As Low as 0.2 Milliohms Provides Very Low Jitter
- Novel DCR Sensing Current-Mode Control
- DCR Temperature Compensation
- Operates with Discrete, DrMOS & Power-Block Power Stages
- Supports Phase Shedding & (n+1) Redundancy
- High Speed Differential Remote VOUT Sense Amplifiers
- Wide VIN Range: 4.5V to 38V
- VOUT Range: 0.6V to 3.5V
- Adjustable Current Sense Threshold from 10mV to 30mV
- Selectable Fixed Operating Frequency from 200kHz to 1.2MHz
- Output Voltage Tracking or Programmable Soft-Start
- Overvoltage Protection, Thermal Shutdown & Short-Circuit Soft Recovery

## 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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