



Single 36A or Dual 18A μ Module Regulator Is 86% Efficient from 12V_{IN} to 1V_{OUT} at Full Load

MILPITAS, CA – September 17, 2013 – Linear Technology Corporation introduces the [LTM4630](#), a dual 18A per output or single 36A output DC/DC μ Module[®] step-down regulator capable of delivering up to 144A when four devices are current shared. The LTM4630 is a complete DC/DC regulator system in a 16mm x 16mm x 4.41mm LGA package, which includes inductors, MOSFETs, DC/DC controller and compensation circuitry. High efficiency and low thermal package impedance are achieved with expert analog and packaging design. The efficiency for 36A at 1V_{OUT}, from 12V_{IN} is 86% and from 5V_{IN}, is 88%. With no need for an external heat sink, the LTM4630 delivers 36A up to 60°C ambient with no airflow, 65°C with 200LFM and 69°C with 400LFM. An external heat sink increases the maximum operating ambient temperature by approximately 10°C.

Excellent heat dissipation, scalable and high output power capability, small footprint and low profile package of the LTM4630 enable system designers to lay out more densely populated boards. Typical of applications include mezzanine boards such as ATCA, μ TCA, point-of-load regulation for new processors, ASICs, and the recently introduced <28nm FPGAs as well as high-speed SERDES.

Without requiring a printed circuit board layout changes, system designers can interchange four pin-compatible μ Module regulators to obtain different power levels: LTM4628 dual (8A), LTM4620 and LTM4620A (dual 13A) and the LTM4630 (dual 18A). Each product's

output operates 180° out-of-phase to minimize both output ripple (when outputs share current) and input ripple, resulting in fewer and smaller capacitors.

The LTM4630 is designed to convert 12V_{IN} to high power (up to 144A) point-of-load voltages down to 0.6V. The input voltage range is 4.5V to 15V (16V max) with output ranging from 0.6V to 1.8V. An internal remote sense amplifier guarantees +/-1.5% accurate output regulation over temperature, line and load, by sensing the voltage at the load and thus compensating for voltage droop caused by printed circuit board trace impedance.

The LTM4630 features fast short-circuit protection where a current foldback technique reduces I_{OUT} to a minimum, preventing the μ Module regulator from overheating and protecting the load as well as upstream power supply. Once the short-circuit condition is removed, the LTM4630 resumes operation. The LTM4630 is rated for operation from -40°C to 125°C. 1,000-piece pricing starts at \$35.05 each. For more information, visit

www.linear.com/product/LTM4630


Photo Caption: Single 36A, Dual 18A, up to 144A DC/DC μ Module® Step-Down Regulator

Summary of Features: LTM4630

- Dual 18A or Single 36A Output
- Input Voltage Range: 4.5V to 15V
- Output Voltage Range: 0.6V to 1.8V
- $\pm 1.5\%$ Maximum Total DC Output Error Over Line, Load & Temperature
- Differential Remote Sense Amplifier
- Current-Mode Control/Fast Transient Response
- Adjustable Switching Frequency
- Overcurrent Foldback Protection
- Multiphase Parallel Current Sharing with Multiple LTM4630s up to 144A
- Frequency Synchronization
- Internal Temperature Monitor
- Pin-Compatible with the LTM4620 & LTM4620A (Dual 13A, Single 26A) & LTM4628 (Dual 8A, Single 16A)

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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