



µModule Regulator with Precision DC & Transient Output Regulation for Less than 28nm FPGAs Is Scalable up to 144A

MILPITAS, CA – May 28, 2015 – Linear Technology Corporation introduces the [LTM4630-1](#), a dual 18A or single 36A µModule[®] (micromodule) regulator with high precision output voltage regulation for 28nm and sub-28nm FPGAs, ASICs and microprocessors. The core voltage of these advanced digital devices requires very accurate voltage regulation at steady state (DC) and at fast load current transients. The LTM4630-1 provides precision output voltage regulation for both conditions: (a) $\pm 0.8\%$ maximum total DC error over line, load and temperature (-40°C to 125°C) and (b) $\pm 3\%$ total error, including transients, with minimum output capacitance. To power mid to high power 28nm and sub-28nm digital devices, the LTM4630-1 can be used in parallel to current share up to 144A (i.e., 4 devices x 36A). The LTM4630-1 includes a DC/DC regulator, inductors and MOSFETs in a 16mm x 16mm x 5.01mm BGA package.

The LTM4630-1 regulates an output voltage ranging from 0.6V to 1.8V and from an input voltage range of 4.5V to 15V. The user can optimize transient response of the LTM4630-1 while reducing output capacitance with an external resistor and capacitor by manipulating the loop response of the µModule regulator. With minimum output ceramic capacitors (five 220µF), the LTM4630-1's impressive $\pm 3\%$ output voltage regulation window is measured with a 25% load step transient response from $12V_{\text{IN}}$, while delivering 36A to a 1.2V load. The efficiencies at $12V_{\text{IN}}$, $1.2V_{\text{OUT}}$ with 20A and 36A load currents are 87.5% and 86%, respectively. Corresponding power loss values are 3.2W and 6.5W, respectively. The LTM4630-1 delivers full 36A current up to 60°C ambient, from $12V_{\text{IN}}$ to $1V_{\text{OUT}}$ with no air flow. Load current derates at approximately 5A per 10°C rise in ambient temperature beyond 60°C .

The LTM4630-1 is offered in two V_{OUT} DC precision grades of $\pm 0.8\%$ and $\pm 1.5\%$. 1000-piece pricing starts at \$37.15 each and \$36.05 each, respectively. For more information, visit www.linear.com/product/LTM4630-1

Photo Caption: Dual 18A or Single 36A µModule® Regulator


Summary of Features: LTM4630-1

- $\pm 0.8\%$ Maximum Total DC Error Over Line, Load & Temperature (-40°C to 125°C)
- $\pm 3\%$ Transient Error with Minimum Output Capacitance
- Optional External Loop Compensation
- Current Sharing up to 144A

The USA list pricing shown is for budgetary use only. International prices 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, µModule® subsystems, and wireless sensor network products. For more information, visit www.linear.com

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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel: 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
Tel: 408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937