



50A or Dual 25A μ Module Regulator

MILPITAS, CA – February 29, 2016 – Linear Technology Corporation introduces the [LTM4650](#), a dual 25A or single 50A output step-down μ Module[®] regulator with onboard shielded inductors, MOSFETs and a dual DC/DC regulator IC housed in a small thermally enhanced plastic package. The device is offered in a 16mm x 16mm x 5.01mm BGA with a patented built-in heat sink. The heat sink, attached to the MOSFETs and inductors, rapidly moves heat from the interior of the package to the top, where the surface of the heat sink is exposed to air. Thermal dissipation is further improved with airflow, or a combination of airflow and attachment to an external heat sink. With no external heat sink, the LTM4650 delivers 50A from 12V_{IN} to 0.9V_{OUT} at up to 71°C ambient temperature with 200LFM airflow or up to 77°C with 400LFM.

The LTM4650's precision current-mode architecture allows four devices to multiphase current share, delivering up to 300A to loads such as ASICs, FPGAs and microcontrollers. DC/DC conversion efficiency is improved by using Linear Technology's DC/DC regulator IC with strong gate drivers and low loss MOSFETs. Delivering 50A, 92% efficiency is recorded at 5V_{IN}, 1.8V_{OUT} and 86% at 12V_{IN}, 1.0V_{OUT}.

With a differential remote sense amplifier to compensate for voltage drop due to circuit board trace impedance, the LTM4650 guarantees $\pm 1.5\%$ maximum total DC output voltage accuracy over line, load and temperature.

The LTM4650 is rated for operation from -40°C to 125°C . The 1,000-piece price starts at \$46.75 each. For more information, visit www.linear.com/product/LTM4650.

Photo Caption: 50A or Dual 25A μ Module[®] Regulator with Integrated Heat Sink


Summary of Features: LTM4650

- Dual 25A or Single 50A 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
- Multiphase Parallel Current Sharing with Multiple LTM4650s Up to 300A
- Pin Compatible with the LTM4620 Dual 13A, Single 26A & LTM4630 Dual 18A, Single 36A
- 16mm \times 16mm \times 5.01mm BGA Package

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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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