

Compact Dual 10A or Single 20A μ Module Regulator Powers FPGAs, GPUs, ASICs & System Power

NORWOOD, MA – January 31, 2018 – [Analog Devices](#) announces the Power by Linear™ [LTM4646](#), a dual 10A or single 20A output, step-down μ Module® point-of-load regulator from 5V or 12V input supply rails. The LTM4646 includes the inductors, MOSFETs, a DC/DC controller and supporting components, and is housed in a 11.25mm x 15mm x 5.01mm BGA package. Compared to the prior 2 x single 10A output module solutions, the LTM4646 reduces the solution size of more than 25%. With its dual regulator design, small package size, and precise voltage regulation, the LTM4646 meets the PCB area constraints of densely populated system boards to power low voltage and high current devices such as FPGAs, ASICs, microprocessors and GPUs. Applications include PCIe boards, communication infrastructure, cloud computing-based systems, as well as medical, industrial, and test and measurement equipment.

- View the LTM4646 product page, download data sheet, order samples and evaluation boards: www.linear.com/product/LTM4646

Total output voltage DC accuracy is guaranteed at $\pm 1.5\%$ over line, load and temperature (-40°C to 125°C). Moreover, the onboard remote sense amplifiers on both outputs compensate for voltage drop caused by trace impedance of the PC board due to large load currents. The LTM4646 has selectable internal or external feedback loop compensation, enabling users to optimize loop stability and transient performance while minimizing the number of output capacitors.

The peak efficiency at 12V_{IN} to 1.0V_{OUT} is 86%. With 200LFM air flow, the LTM4646 delivers a full 20A continuously up to 85°C ambient. The current mode architecture allows multiphase parallel operation to increase output current with very good current sharing.

Standalone, the LTM4646 operates from 4.5V to 20V input range. When 5V external bias is available, the device can operate from 2.375V. The output voltages are adjustable from 0.6V to 5.5V, enabling the device to generate not only low voltage for digital devices but also 2.5V, 3.3V and 5V, which are commonly needed in system bus voltages. The switching frequency can be programmed from 250kHz to 1.3MHz with one resistor, and can also be synchronized to an external clock ranging from 300kHz to 1MHz for noise-sensitive applications. Additionally, it features overvoltage and overcurrent protection.

The LTM4646 operates from -40°C to 125°C . For more information, visit www.linear.com/product/LTM4646.

Summary of Features: LTM4646

- Dual 10A or Single 20A Output
- Wide Input Voltage Range: 4.5V to 20V
- 2.375V_{MIN} with CPWR Bias
- Output Voltage Range: 0.6V to 5.5V
- $\pm 1.5\%$ Maximum Total DC Output Error
- Multiphase Current Sharing
- Differential Remote Sense Amplifier, Each Channel
- Internal or External Compensation
- 11.25mm x 15mm x 5.01mm BGA Package
- BGA Ball Finishes Available: SAC305 (RoHS), SnPb (63/37)

Pricing & Availability

Product	Sample Availability	Production Availability	Price Each Per 1,000	Package
LTM4646	Now	Now	Starts at \$18.85	11.25mm x 15mm x 5.01mm BGA

About Analog Devices

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