DC/DC µModule step-down regulator with integrated heat sink delivers up to 100A

Linear Technology Corporation introduces the LTM4620 [1], a dual 13A per output or single 26A output DC/DC µModule (pronounced micromodule) step-down regulator that delivers up to 100A when four devices are current shared. The LTM4620 is a complete DC/DC regulator system in a 15mm x 15mm x 4.41mm LGA package, including inductors, power stages and all control circuits. For optimum heat dissipation, a patented top side heat sink removes heat quickly and evenly. With 200LFM air flow, 12VIN to 1.0VOUT and at full load of 26A (or 13A per output), the LTM4620 internal temperature rises only 60°C above ambient. With the addition of an external heat sink to the top of the package and 200LFM air flow, the temperature rise is only 40°C. See our TechClip video at http://video.linear.com/p4634 [2] for a performance demonstration.

The LTM4620 is designed to convert 5V to 12V inputs to high power, low voltage point-of-load system rails such as 2.5V to as low as 0.6V. An accurate reference and an internal remote sense amplifier guarantee +/-1.5% accurate output regulation over line, load and temperature. Sensing the voltage at the load compensates for voltage drops caused by PCB trace impedance. Excellent heat dissipation, low temperature rise, scalable and high output power capability, small footprint and the low profile package of the LTM4620 enable system designers to lay out more densely populated boards. Applications include mezzanine boards such as ATCA and microTCA systems, point-of-load regulation for advanced processors, ASICs and recently introduced 28nm FPGAs as well as high-speed SERDES.

The LTM4620 features fast short-circuit protection where a current foldback technique reduces IOUT to a minimum, preventing the µModule regulator from overheating while protecting the load as well as the upstream power supply. Once the short-circuit condition is removed, the LTM4620 resumes operation (see TechClip video demonstration http://video.linear.com/p4634 [2]). The two outputs of the LTM4620 operate at 180° out of phase to minimize output ripple (when outputs share current) and input ripple, resulting in the use of fewer and smaller capacitors. For a 100A design, four LTM4620 devices accurately current share and operate at 90° out of phase.

The LTM4620 is rated for operation from -40°C to 125°C. 1,000-piece pricing starts at $29.99 each. For more information, visit www.linear.com/product/LTM4620 [1].

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http://www.ecnmag.com/products/2012/09/dc/dc-%C2%B5module-step-down-regulator-integrated-heat-sink-delivers-100a

Links:
[1] http://r20.rs6.net/tn.jsp?e=001u9E7mHk5UtlK7i7JZTHIyNJTwLZz6cN2AXEU9NbObxAgTEZCNO-cen64KufxNHiPLNxjjLfr1wOOf88Avi3IWbSmKNx6W9JLNIoBxosomaQxI6uJfpoe4MzFhHunaslMkoHSuvVyNPk=
[2] http://r20.rs6.net/tn.jsp?e=001u9E7mHk5UtlCeUpzRJrQG5mlhGHw6CTmKw9L7V64p75-tZhkl_XPnDf8BdK3jQaOvZLZjpOzUrutAIhNBTdG-EAhu-uJ3YGLiWKcD5hsM0NNkdi1ihTnIA==