

Power Integrations' New HiperLCS™ High-Frequency LLC Converter IC Family Maximizes Power Supply Efficiency, Minimizes Footprint

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Incorporates drivers and MOSFETs; saves space, cuts system cost

SAN JOSE, Calif.--(BUSINESS WIRE)-- Power Integrations (Nasdaq: **POWI**), the leader in high-voltage integrated circuits for energy-efficient power conversion, today introduced **HiperLCS**, a family of high-voltage LLC power supply ICs that incorporate the controller, high- and low-side drivers, and both MOSFETs into a single low-cost package. Highly integrated **HiperLCS** ICs offer the flexibility to optimize designs either for high efficiency — with a maximum efficiency of better than 97% — or for size, by leveraging high-frequency operation (up to 1 MHz) to minimize transformer size and output capacitor footprint.

LLC converters have long been favored over other high-power topologies for applications such as PCs and server power supplies, TVs, and LED streetlights due to their high efficiency and ability to produce compact power supplies; however, designing with them is notoriously difficult. **HiperLCS** devices address this challenge by providing all of the required functions in a single IC — eliminating up to 30 discrete and passive components in the process — thereby streamlining the design cycle, saving board space, reducing assembly costs, and increasing reliability.

The high switching frequency of **HiperLCS** devices allows designers to use low-cost SMD ceramic capacitors in the output loop instead of bulky, unreliable electrolytic capacitors, and reduces the size of the magnetics required. It also delivers excellent transformer utilization, with a peak switching frequency of 1 MHz. Power Integrations' new thermally-efficient, low-profile **eSIP™-16C** package further contributes to space savings and reduces heat sink size.

HiperLCS devices have two modes of use. For high-efficiency design, its resonant control circuitry provides very low

power loss, allowing designs with efficiency greater than 97% at nominal 66 kHz switching frequency. If cost and size are the determining design criteria, then high switching frequency is preferred. In this latter case, efficiency still remains high — for example, 96% at 250 kHz, the frequency where maximum power is achieved.

Comments Chris Lee, product marketing manager at Power Integrations: "Designing LLC converters is a complex task. The biggest challenge is configuring all of the building blocks to eliminate cross conduction and controlling the various parasitic elements. With our new **HiperLCS** product family, the key components are contained inside a single IC and trimmed during manufacture to optimize the pairing of MOSFETs with drivers. This guarantees reliable and efficient performance for applications such as slim LED-backlit TVs, PC main power, servers, telecoms and networking equipment, LED streetlights, and laser printers. **HiperLCS** devices enable designs that easily exceed the performance benchmarks set by ENERGY STAR® 4.0 and 5.0 and the 80 PLUS® Gold and Platinum PC efficiency standards."

HiperLCS devices allow users to improve their designs by setting key circuit parameters, such as dead time and soft start, to provide optimum solutions. The design process is assisted by **PI Xls™**, a real-time design and modeling tool that greatly simplifies the job of the power supply designer.

HiperLCS devices are available now in the new low-profile **eSIP-16C** package starting at \$2.28 each for 10,000-piece quantities (LCS700). Full technical details, including the product introductory video, datasheet, and design ideas, are available now on the Power Integrations website at www.powerint.com/en/hiperlcs.

About Power Integrations

Power Integrations is the leading supplier of high-voltage integrated circuits used in energy-efficient power conversion. The company's innovative technology enables compact, energy-efficient power supplies in a wide range of electronic products, in AC-DC, DC-DC, and LED lighting applications. Since its introduction in 1998, Power Integrations' EcoSmart™ energy-efficiency technology has saved an estimated \$4.9 billion of standby energy waste and prevented millions of tons of CO2 emissions. The company's **Green Room** web site provides a wealth of information about "energy vampires" and the issue of standby energy waste, along with a comprehensive guide to energy-efficiency standards around the world. Reflecting the environmental benefits of EcoSmart technology, Power Integrations' stock is included in The Cleantech Index® and the NASDAQ® **Clean Edge®** Green Energy Index. For more information, please visit www.powerint.com.

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