TI Unveils Smallest, Most Efficient Power Conversion IC for Smart Phones, Portable Wireless Electronics

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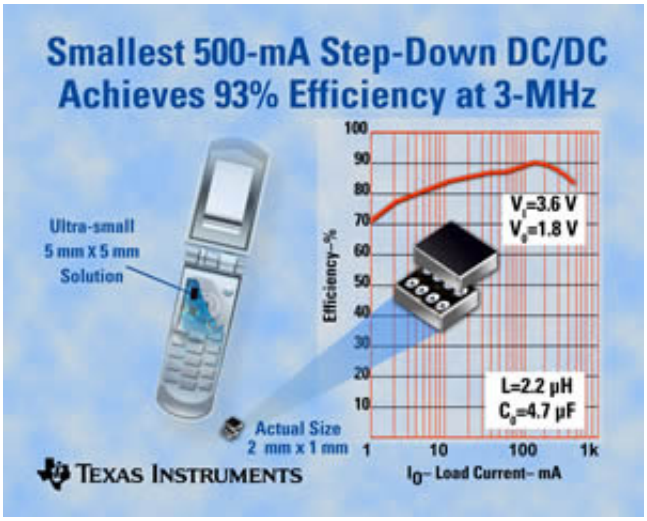

New 3-MHz, 500-mA Step-Down DC/DC Converter in Ultra-Small 2 mm x 1 mm Package Extends Battery Life

Giving portable designers the ability to extend battery life in smaller designs, Texas Instruments Incorporated (TI) announced today the industry's smallest, most efficient, high-accuracy, step-down DC/DC converter for space-constrained applications. The tiny power management integrated circuit (IC) is ideal for smart phones, WLAN

and Bluetooth equipment, digital still cameras and other battery powered devices.

Leveraging advanced analog process technology, TI's new TPS62300 step- down, 500-mA converter with integrated FETs delivers unprecedented levels of power conversion efficiency and voltage regulation accuracy from a lead-free, 2 mm x 1 mm chip scale package. The synchronous, switch-mode device achieves up to 93 percent power conversion efficiency while operating at a fixed frequency of 3-MHz.

The TPS62300 can deliver DC voltage regulation accuracy from -0.5 percent to 1.3 percent over the entire industrial temperature range. In addition, the device's excellent load transient response and flexible output voltage range of 5.4 V down to an ultra-low 0.6 V, allows it to effectively support demanding core power requirements of low-voltage digital signal processors (DSPs), multimedia application processors and communication chip sets.

The TPS62300's 3-MHz switching frequency and unique design topology allows designers to reduce board space by applying smaller external components, including a small form factor, low-cost 1-uH chip-inductor and 4.7-uF output capacitor, without compromising performance and efficiency. The result is the industry's smallest, complete low-power DC/DC implementation (5 mm x 5 mm) that supports 500-mA current requirements.

The TPS62300 efficiently supports leading low-power processors, such as TI's new low-power, 200-MHz DSPs, the TMS320C5503, C5507 and the C5509A processors for portable applications. See: www.ti.com/powerefficientperformance3 . Moreover, TI will include TPS6230x power conversion ICs in future wireless chipsets that support 2.5G and 3G smart phones. The converter also can be used in high-performance DSP-based digital media chipsets optimized for digital still

cameras, WLAN, Bluetooth and USB-based DSL modems.

"Portable systems powered by DSPs and other microcontrollers are requiring lower system and core voltages supplied by smaller, more efficient DC/DC converters in an effort to prolong battery life and system run-times. Even the fastest, power-optimized DSPs still need high performance analog power ICs to efficiently convert available battery power to the processor," said Dave Heacock, vice president of TI's portable power management business. "The TPS62300 gives portable designers access to the smallest, high-accuracy 500-mA DC/DC solution, simplifying design, as well as reducing board space and time- to-market."

New DC/DC Boost Converters with 600-mA Switch Current Limit

In addition to the TPS62300 step-down IC, TI also announced today a new family of synchronous switch, 600-mA DC/DC boost converters for innovators who design small, simple, battery-powered equipment, including wireless and PC accessories, such as headsets and pointing devices. The new TPS6107x family, available in a six-pin, 3 mm x 3 mm ThinSOT-23 package, supports input voltages of 0.9 V to 5.5 V, and generates output voltages up to 5.5 V at greater than 90 percent power efficiency using a small 4.7-5H inductor and ceramic capacitors. See: www.ti.com/sc04030 .

The TPS6107x devices are ideal for small portable applications that use one or two Alkaline or nickel metal-hydride (NiMH) batteries, or a single-cell lithium-ion (Li-Ion) battery. The converters feature a low quiescent current of 15-uA typical and a maximum shutdown current of 1-uA to conserve battery power. The TPS6107x devices operate at 1.2-MHz, and can deliver output currents in excess of 75-mA at 3.3 V from a 0.9 V supply and 150-mA at 3.3 V from a 1.8 V supply. The output voltage is adjustable through the use of an external resistor

divider. The TPS61070 features a light-load efficient pulse-frequency modulation (PFM) mode, while the TPS61071 operates in a pulse- width modulation (PWM) mode.

Pricing and Availability

The TPS6230x and TPS6107x families of converters are available today in volume from TI and its authorized distributors. The TPS6230x DC/DC converters come in a highly reliable, eight-pin, wafer chip scale (2 mm x 1 mm) package or a 10-pin QFN (3 mm x 3 mm) package, and are priced at $1.85 each in quantities of 1,000 units. The synchronous TPS6107x devices come in a six- pin, ThinSOT-23 package, and are priced in quantities of 1,000 at $0.95 per unit. Evaluation modules of the TPS62300 and TPS61070, application notes and TI's new online VIP power management product selection tool are available through power.ti.com/ .

Source: TI