



Eight-Channel Configurable 1A Buck DC/DCs for Multi-Rail Systems

MILPITAS, CA – November 19, 2012 – Linear Technology Corporation announces the [LTC3375](#), a highly-integrated general-purpose power management solution for systems requiring multiple low voltage power supplies. The device features eight independent 1A channels with I²C control, flexible sequencing and fault monitoring in a compact QFN package. The LTC3375 contains eight internally compensated, high efficiency synchronous step-down regulators plus a high voltage always-ON 25mA LDO controller. Each buck regulator has its own independent 2.25V to 5.5V input supply and an output voltage range of 0.425V to V_{IN}. The device's pushbutton ON/OFF/RESET control, power-on reset and watchdog timer provide flexible and reliable power-up sequencing and system monitoring. The LTC3375 features a programmable and synchronizable 1MHz to 3MHz oscillator with a 2MHz default switching frequency. Quiescent current is only 11µA with all DC/DCs off, saving battery run time. It is ideal for a wide variety of multichannel applications including industrial, automotive and communications systems.

The LTC3375's buck DC/DCs can be used independently or connected in parallel to achieve higher output currents up to 4A per output with a single shared inductor. Up to four adjacent regulators can be combined, resulting in 15 different possible output configurations. Adjacent buck regulators can be combined in a master-slave configuration by connecting their V_{IN} and SW pins together, and connecting the slave bucks' FB pin(s) to the input supply. All of the switching regulators are internally compensated and need only external feedback resistors to

set the output voltage. Alternatively, the output voltages can be set via I²C. The switching regulators offer two operating modes: Burst Mode[®] operation (power-up default mode) for higher efficiency at light loads, and forced continuous PWM mode for lower noise at light loads. The I²C interface can be used to select mode of operation, phasing, feedback regulation voltage and switch slew rate. The bucks have forward and reverse current limiting, soft-start to limit inrush current during start-up, short-circuit protection and slew rate control for lower radiated EMI. Other features include a die temperature monitor output (readable via I²C) that indicates internal die temperature, and an overtemperature (OT) warning function, which warns the user that the die temperature is approaching the OT threshold.

The LTC3375 is available from stock in a thermally enhanced, low profile (0.75mm) 48-pin 7mm x 7mm exposed pad QFN package. E and I grades are specified over an operating junction temperature range of -40°C to +125°C, and the H grade features operation from -40°C to +150°C. 1000-piece pricing starts at \$5.45 each for the E grade. For more information, visit www.linear.com/product/LTC3375


Photo Caption: High Power Octal 8x1A Buck PMIC

Summary of Features: **LTC3375**

- 8-Channel Independent Step-Down DC/DCs Master-Slave Configurable for Up to 4A per Output Rail with a Single Inductor
- Independent V_{IN} Supply for Each DC/DC (2.25V to 5.5V)
- All DC/DCs Have 0.425V to V_{IN} Output Voltage Range
- Precision Enable Pin Thresholds for Autonomous Sequencing (or I²C Control)
- 1MHz to 3MHz Programmable/Synchronizable Oscillator Frequency (2MHz Default)
- I²C Selectable Phasing (90° Steps) per Channel
- Programmable Power-On Reset/Watchdog/Pushbutton Timing
- Die Temperature Monitor Output
- 48-Lead 7mm x 7mm QFN Package

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 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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