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20V, 4MHz, Synchronous Dual 6A Step-Down Regulator in a Compact 4mm x 5mm QFN

MILPITAS, CA & NORWOOD, MA – June 26, 2017 – Analog Devices, Inc., which recently acquired Linear Technology Corporation, announces the [LTC3636](#) and [LTC3636-1](#) are high efficiency, 4MHz synchronous dual output buck regulators that incorporate a unique constant frequency/controlled on-time, current mode control scheme with phase lockable switching frequency. Further, their innovative design architecture reduces conducted and radiated emissions. The devices can deliver up to 6A of continuous output current from each channel or generate a 2-phase single output up to 12A. The parts accommodate output voltages as low as 0.6V from a compact 4mm x 5mm QFN package. The switching frequency is user programmable from 500kHz to 4MHz, enabling the use of tiny, low cost capacitors and inductors, and also may be synchronized to an external clock signal. The LTC3636/-1 operates from an input voltage of 3.1V to 20V, while output voltage sense ranges are 0.6V to 5V for the LTC3636 and 1.8V to 12V for the LTC3636-1, ideal for dual-cell Li-Ion applications as well as 5V and 12V intermediate bus systems.

Each channel of the LTC3636/-1 uses internal switches with $R_{DS(ON)}$ of only 32m Ω and 18m Ω to deliver efficiencies as high as 95%. Its unique control architecture enables it to achieve duty cycles as low as 5% while maintaining switching frequencies up to 2.25MHz, ideal for high step-down ratio applications such as 12V_{IN} to 1.8V_{OUT} conversions. The two channels run 180 degrees out-of-phase, minimizing the size of both input and output capacitance. The dual outputs may be combined in a 2-phase configuration for up to 12A output current. Burst Mode[®] operation is used to maximize light load efficiency, requiring 600 μ A at no load. For applications requiring the lowest possible noise, the LTC3636/-1 can be configured to run in forced continuous operation, reducing supply ripple and potential RF interference. Additional features include a die temperature monitor, power good voltage monitors, output voltage tracking capability, independent soft-start capability for each channel, short-circuit protection, input overvoltage and overtemperature protection.

The LTC3636 is available in a thermally enhanced, 4mm x 5mm QFN-28 package. E- and I-grade versions are guaranteed to operate over the -40°C to 125°C operating junction temperature, pricing starts at \$4.45 each for 1,000-piece quantities of the E grade. All versions are available from stock. For more information, visit linear.com/product/LTC3636-1.

Photo Caption: Dual 6A, 20V Synchronous Step-Down DC/DC Converter in 4mm x 5mm QFN

Summary of Features: LTC3636/-1


- 3.1V to 20V Input Voltage Range
- Ultralow EMI/EMC Emissions
- 6A Output Current per Channel
- Up to 95% Efficiency
- V_{OUT} Sense Ranges:
 - 0.6V to 5V (LTC3636)
 - 1.8V to 12V (LTC3636-1)
- Die Temperature Monitor
- Adjustable Switching Frequency: 500kHz to 4MHz
- External Frequency Synchronization
- Current Mode Operation for Excellent Line & Load Transient Response
- 0.6V Reference Allows Low Output Voltages
- User Selectable Burst Mode[®] Operation or Forced Continuous Operation
- Output Voltage Tracking & Soft-Start Capability
- Short-Circuit Protected
- Input Overvoltage & Overtemperature Protection
- Power Good Status Outputs
- Low Profile 4mm x 5mm 28-Lead QFN Package

Pricing shown is for budgetary use only and may differ due to local duties, taxes, fees and exchange rates.

Analog Devices just got more Powerful. On March 10, Analog Devices acquired Linear Technology, creating the premier high-performance analog company. More info at <http://lt.linear.com/07c>

About Analog Devices

Analog Devices (NASDAQ: ADI) is the leading global high-performance analog technology company dedicated to solving the toughest engineering challenges. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure, power, connect and interpret. Visit <http://www.analog.com>

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