



## **Synchronous Rail-to-Rail, Single Resistor Step-Down Regulator Delivers 1.5A at 0V to 15V**

MILPITAS, CA – February 13, 2012 – Linear Technology Corporation announces the [LTC3600](#), a 1.5A, high efficiency, synchronous buck regulator that can be easily paralleled for higher current applications and is adjustable down to 0V with a single resistor. This new switching regulator architecture uses a 50 $\mu$ A current reference, combined with a single resistor to set the output voltage. This unique design enables easy current sharing between multiple regulators, setting the output voltage for all of the regulators with a single external resistor.

The LTC3600 delivers high performance without any compromises. The device's wide input voltage capability from 4V to 15V makes it ideal for dual-cell Li-Ion applications, as well as fixed 5V and 12V intermediate bus systems and synchronous rectification delivers efficiencies as high as 96%. The LTC3600's novel design allows dynamic adjustment of output voltage from 0V to  $V_{IN}-0.5V$ , offering virtually rail-to-rail performance. The device's ability to provide zero output enables it to power down individual rails in the system as needed. Its on-chip trimmed reference achieves accuracy of  $\pm 1\%$ . Furthermore, output regulation and transient response are independent of output voltage. Output voltage tracking or soft start is easily programmed via the ISET pin for applications that require power sequencing. The LTC3600's wide  $V_{IN}$  &  $V_{OUT}$  capability, tight line and load regulation, high efficiency, low external parts count and parallel capability make it ideal for modern multirail systems.

The LTC3600's combination of a 3mm x 3mm DFN or a thermally enhanced MSOP-12 package and its 200kHz to 4MHz switching capability enable use of tiny, low cost capacitors and inductors, offering a very compact solution footprint for multirail applications. Additional features include a power good voltage monitor, external synchronization capability and thermal protection.

The LTC3600EDD is available in a 3mm x 3mm DFN-12, and the LTC3600EMSE is offered in a 12-lead, thermally enhanced MSOP package. Pricing for both package options starts at \$2.80 each in 1,000-piece quantities. Industrial grade versions, the LTC3600IDD and

LTC3600IMSE, are guaranteed to operate over the  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  operating junction temperature range and are priced at \$3.22 each in 1,000-piece quantities. All versions are available from stock. For more information, visit [www.linear.com/product/LTC3600](http://www.linear.com/product/LTC3600)


**Photo Caption:** 16V, 1.5A Monolithic Synchronous Step-Down Regulator Offers Outputs to 0V

### Summary of Features: LTC3600

- Single Resistor Programmable  $V_{\text{OUT}}$
- $\pm 1\%$   $I_{\text{SET}}$  Accuracy over Temperature
- Output Regulation & Transient Response Independent of Output Voltage
- Multiple Units Are Easily Cascaded for Higher Current Applications
- High Efficiency: Up to 96%
- 1.5A Output Current
- Integrated Power N-Channel MOSFETs (200mOhm Top & 100mOhm Bottom)
- Adjustable Frequency: 200kHz to 4MHz
- Wide  $V_{\text{OUT}}$  Range 0V to  $V_{\text{IN}} - 0.5\text{V}$
- 4V to 16V  $V_{\text{IN}}$  Range
- Current Mode Operation for Excellent Line & Load Transient Response
- $<1\mu\text{A}$  Supply Current in Shutdown
- Available in Thermally Enhanced 12-Pin 3mm  $\times$  3mm DFN & MSOP Packages

### 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,  $\mu\text{Module}^{\text{®}}$  subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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