



3.3A, 2.5MHz, 42V Boost/Inverting DC/DC Converter with Fault Protection

MILPITAS, CA – April 7, 2010 – Linear Technology Corporation announces the LT3581, a current mode, fixed frequency step-up DC/DC converter with integrated fault protection features for output shorts, input/output overvoltages, and overtemperature conditions. The LT3581 uses two integrated 42V switches – a 1.9A master switch and a 1.4A slave switch – which can be tied together for a total limit of 3.3A. The LT3581 operates from an input voltage range of 2.5V to 22V, with transient protection to 40V, making it suitable for applications with input sources ranging from a single-cell Li-Ion to automotive inputs. The LT3581 is ideal for many local power supply designs as it can be configured as either a boost, SEPIC or an inverting converter. The combination of a 4mm x 3mm DFN package (or MSOP-16E) and tiny externals ensures a very compact footprint while minimizing solution cost.

The LT3581's low V_{CESAT} switches, 0.25V (tied together at 2.75A), deliver efficiencies up to 88%. With both switches combined and from a 5V input, the LT3581 can deliver up to 830mA at 12V or 625mA at -12V. For high voltage outputs, the LT3581's slave switch enables high power charge pump topologies which are very efficient and require few external components. The LT3581's switching frequency can be programmed via a single resistor or synchronized to an external clock between 200kHz and 2.5MHz, minimizing external component sizes and avoiding “noise critical” frequency bands. Undervoltage lockout (UVLO) is user adjustable for optimal system performance. A single feedback resistor sets the output voltage,

minimizing external components. Other features include external synchronization capability and junction temperature monitoring.

The LT3581EDE is available in a 4mm x 3mm DFN-14 package, priced starting at \$2.45 each for 1,000 piece quantities. The LT3581EMSE is also available in a thermally enhanced MSOP-16 package, priced starting at \$2.55 each for 1,000 piece quantities. Industrial temperature (-40°C to 125°C) versions, the LT3581IDE and the LT3581IMSE, are also available from stock. Pricing starts at \$2.72 and \$2.83 each, respectively, for 1,000 piece quantities. For more information, visit www.linear.com.


Photo Caption: 3.3A, 42V Boost, Inverting or SEPIC DC/DC Converter

Summary of Features: LT3581

- 3.3A, 42V Combined Power Switch
- Master/Slave (1.9A/1.4A) Switch Design
- Output Short Circuit Protection
- Wide Input Range: 2.5V to 22V Operating, 40V Maximum Transient
- Switching Frequency Up to 2.5MHz
- Easily Configurable as a Boost, SEPIC, Inverting or Flyback Converter
- User Configurable Undervoltage Lockout
- Low Vcesat Switch: 250mV at 2.75A (Typical)
- Can be Synchronized to External Clock
- Can Be Synchronized to other Switching Regulators
- High Gain SHDN Pin Accepts Slowly Varying Input Signals
- 14-Pin 4mm x 3mm DFN & 16-Lead MSE Package

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule[®] products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems.

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Press Contacts:

North America / Worldwide

John Hamburger, Director Marketing
Communications
jhamburger@linear.com
Tel 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager
ddickinson@linear.com
408-432-1900 ext 2233

UK & Nordic

Alan Timmins
alan@ezwire.com
Tel: +44-1-252-629937