



2MHz, Five Output Regulator for TFT-LCD Panels

MILPITAS, CA – October 7, 2008 – Linear Technology Corporation announces the LT3513, a five output monolithic switching regulator packaged in a 5mm x 7mm QFN package. It offers a 2.2A (I_{SW}) buck regulator, a 1.5A (I_{SW}) boost regulator, a 250mA (I_{SW}) boost regulator, a 250mA (I_{SW}) inverter and an LDO controller, all in a single package. Each channel has an independent soft-start/run pin. The LT3513's input voltage range of 4.5V to 30V makes it ideal for a wide array of TFT-LCD applications, including automotive, industrial and unregulated wall transformer-based systems. Its 2MHz switching frequency keeps switching noise out of critical frequency bands, such as AM radio, and ensures tiny externals. Combined with a 5mm x 7mm QFN package, the LT3513 offers a very compact TFT-LCD power solution.

The LT3513's buck regulator can deliver up to 1.2A of output current for logic rails. A lower voltage secondary logic supply may be generated via the LDO controller and an external NPN MOSFET. A high power step-up converter ($I_{SW}=1.5A$), a lower power step-up converter ($I_{SW}=250mA$) and an inverting converter ($I_{SW}=250mA$) provide the three independent output voltages: AV_{DD} , V_{ON} and V_{OFF} required by LCD panels. An integrated high side PNP provides a delayed turn on of the V_{ON} signal while Panel Protect circuitry disables V_{ON} if any of the four outputs are more than 10% below their programmed voltage, protecting the TFT-LCD panel. Other features include integrated schottky diodes, PGOOD pin for AV_{DD} output disconnect and inductor current sense for the buck regulator.


The LT3513EUHF is available from stock in a 38-lead 5mm x 7mm QFN package. Pricing starts at \$4.25 each in 1,000-piece quantities. An industrial grade version, the LT3513IUHF, is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$5.00 each in 1,000-piece quantities. All versions are available from stock.

Photo Caption: 2MHz Five Output Regulator for TFT-LCD Panels**Summary of Features: LT3513**

- 4.5V to 30V Input Voltage Range
- Four Integrated Switches: 2.2A Buck, 1.5A Boost, 0.25A Boost, 0.25A Inverter (Guaranteed Minimum Current Limit)
- External NPN LDO Driver
- Fixed Frequency, Low Noise Outputs
- Inductor Current Sense for Buck
- Soft-Start for All Outputs
- Externally Programmable V_{ON} Delay
- Three Integrated Schottky Diodes
- PGOOD Pin for AV_{DD} Output Disconnect
- PanelProtect™ Circuitry Disables V_{ON} upon Fault
- Thermally Enhanced 38-Lead 5mm x 7mm QFN 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. For more information, visit www.linear.com.

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Press Contacts:

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

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