



## **40V<sub>IN</sub>, 2.1A Rail-to-Rail LDO+ Offers Extensive Monitoring, Protection & Cable Drop Compensation**

MILPITAS, CA – December 18, 2013 – Linear Technology Corporation announces the [LT3086](#), the latest addition to the LDO+™ family, offering significant functionality previously unavailable in linear regulators. The 40V, 2.1A low dropout linear regulator (LDO) includes current monitoring with externally settable current limit and temperature monitoring with external control of thermal limit temperature. The device includes a programmable power good status flag, cable drop compensation and easy paralleling. The current reference in the LT308x LDO family provides regulation, independent of output voltage.

The LT3086 features a 1.4V to 40V input voltage range. A single resistor programs output voltage from 0.4V to 32V and dropout voltage is only 330mV at 2.1A. The LT3086 achieves line and load regulation of 0.1%, independent of output voltage. The trimmed, precision 50μA current reference is ±1% accurate, providing ±2% output voltage tolerance over line, load and temperature. Output voltage regulation, bandwidth, transient response and noise (40μV<sub>RMS</sub>) remain independent of output voltage due to the device's unity-gain voltage follower architecture.

Unique internal circuitry allows paralleling of multiple LT3086s for higher load current and heat spreading without needing external ballast resistors. Programmable cable drop compensation cancels regulation errors caused by line drops to the load. Output current and temperature monitoring, in addition to a power good flag with programmable threshold, provide system monitoring and diagnostic/debug capability. Internal fault circuitry includes thermal shutdown and current limit with foldback. Thermal limit and current limit are externally programmable. The device's reverse battery and reverse current protection add robustness to the end design.

The LT3086 is offered in a variety of thermally enhanced surface mount packages, including a low profile (0.75mm) 16-lead 4mm x 5mm DFN, a 16-lead thermally enhanced

TSSOP and a 7-lead DD-Pak; all dissipate 2W in surface mount applications with no heat sink. The LT3086 is also available in a 7-lead TO-220 power package for vertical mounting to heat sinks for higher power dissipation capability. E and I grades are specified with an operating junction temperature range of -40°C to +125°C. The MP grade is specified with an operating junction temperature range of -55°C to +125°C. Devices are available from stock and 1,000-piece pricing starts at \$3.00 each for the E grade. For more information, visit [www.linear.com/product/LT3086](http://www.linear.com/product/LT3086)


**Photo Caption:** 40V 2.1A Low Noise Low Dropout Linear Regulator

### Summary of Features: LT3086

- Wide Input Voltage Range: 1.4V to 40V
- 1 Resistor Sets Output Voltage: 0.4V to 32V
- Output Current: 2.1A
- ±2% Tolerance Over Line, Load & Temperature
- Output Current Monitor:  $I_{MON} = I_{OUT}/1000$
- Temperature Monitor with Programmable Thermal Limit
- Programmable Current Limit
- Programmable Cable Drop Compensation
- Parallel Multiple Devices for Higher Current
- Dropout Voltage: 330mV
- 1 Capacitor Soft-Starts Output & Decreases Noise
- Low Output Noise: 40μV<sub>RMS</sub> (10Hz to 100kHz)
- Precision, Programmable External Current Limit
- Power Good Flag with Programmable Threshold
- Ceramic Output Capacitors: 10μF Minimum
- Quiescent Current in Shutdown: <1μA
- Reverse-Battery & Reverse-Current Protection
- Available in 4mm × 5mm 16-Lead DFN, 16-Lead TSSOP, 7-Lead DD-PAK & 7-Lead TO-220 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,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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