



40V, 400mA(I_{OUT}), 2.2MHz Step-Down Regulator with Dual Tracking LDOs

MILPITAS, CA – October 20, 2014 – Linear Technology Corporation announces the [LT3668](#), a 400mA, 40V step-down switching regulator with dual tracking LDO outputs packaged in an MSOP-16E. The LT3668 offers a complete, robust power solution for applications that require the power supply of a sensor to tightly track the power supply of a measurement ASIC. The LT3668 operates from a V_{IN} range of 4.3V to 40V with transient protection to 60V, making it ideal for automotive and industrial applications. Its internal 600mA switch can deliver up to 400mA, which is distributed to the combined loads of the primary output and both of the tracking LDOs. The primary switching channel can deliver outputs as low as 1.2V, and each LDO can deliver outputs as low as 1.1V. The LT3668 requires only 50 μ A of quiescent current when all three channels are in regulation, making it ideal for always-on automotive applications.

The LT3668's switching frequency is user programmable from 250kHz to 2.2MHz, enabling the designer to optimize efficiency while avoiding critical noise-sensitive frequency bands. Each integrated tracking LDO has an accurate programmable current limit up to 200mA to ensure an additional level of reliability. The high accuracy of the tracking LDOs makes them ideal for powering ADCs and sensors. Although the LDOs can be powered by independent inputs, powering them from the primary switching output offers both high efficiency and low noise. The combination of its thermally enhanced MSOP-16E and high switching frequency, which keeps external capacitors and inductor small, provides a compact, thermally efficient footprint.

The LT3668's main switcher utilizes a high efficiency 600mA switch, with the necessary oscillator, control, and logic circuitry integrated into a single die. Special design techniques enable high efficiency over a wide input voltage range, and its current mode topology enables fast transient response and excellent loop stability. Other features include a power indicator, synchronization capability, reverse-battery protection, current and thermal limiting and programmable undervoltage lockout.

The LT3668EMSE is offered in a thermally enhanced 16-lead MSOP package and is priced at \$2.55 each. The LT3668IMSE is tested and guaranteed to operate from a -40°C to 125°C operating junction temperature and is priced at \$2.81 each. All prices are for 1,000-piece quantities and all versions of the LT3668 are available from stock. For more information, visit www.linear.com/product/LT3668

Photo Caption: 40V, 400mA(I_{OUT}), Triple Output DC/DC Converter


Summary of Features: LT3668

- Triple Output Supply from a Single Input Requires Only One Inductor
- Dual Low Dropout Linear Tracking Regulators
 - o 200mA Outputs with Programmable Current Limits
 - o 1.6V to 45V Input Range
 - o Fault Protected to $\pm 45\text{V}$
- Buck Regulator:
 - o Low Ripple ($<15\text{mV}_{P-P}$) Burst Mode[®] Operation
 - o 400mA Output with Internal Power Switch
 - o 4.3V to 40V Input Operation Range (60V Max)
- $I_Q = 50\mu\text{A}$ at 12V_{IN} to 6V, 5V and 5V with No Load
- Adjustable 250kHz to 2.2MHz Switching Frequency
- Synchronizable Between 300kHz & 2.2MHz
- Programmable Undervoltage Lockout
- Power Good Indicator
- Available in a Thermally Enhanced 16-Lead MSOP Package

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

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 over 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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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