



16-Bit Quad, SPI DAC with Internal Reference Achieves ± 4 LSB INL (Max)

MILPITAS, CA – March 10, 2010 – Linear Technology Corporation introduces the LTC2654, a quad voltage output 16- and 12-bit digital-to-analog converter (DAC) family with internal reference and SPI interface. LTC2654 DACs achieve 16-bit performance of ± 4 LSB INL maximum over temperature, a factor of two better than the nearest 16-bit quad competitor with internal reference. LTC2654 has the lowest offset error ± 2 mV (max) and lowest gain error 0.1% (max), a combination that ensures that the LTC2654 remains accurate near the supply rails and provides users with a wider effective output range. LTC2654's precision specifications make it ideal for multichannel, open loop and closed loop systems. Applications include mobile communication, process control and industrial automation, automated test equipment (ATE) and automotive systems.

The LTC2654's integrated reference achieves 2ppm/ $^{\circ}$ C typical and 10ppm/ $^{\circ}$ C maximum temperature coefficient. It is offered in tiny 20-pin 4mm x 4mm QFN and 16-pin narrow SSOP packages, providing space savings densely packed circuit boards. AC performance stands out, as LTC2654 offers 8.9 μ s settling time for a half-scale step and 3nV•s crosstalk, resulting in minimal disturbance between DAC channels. The LTC2654 operates from a single 2.7V to 5.5V supply and communicates via a 4-wire SPI/Microwire compatible interface up to 50MHz.

The LTC2654 offers a wide range of options to meet application specific requirements. Designers can choose between 16- or 12-bit resolution and an internal 1.25V or 2.048V reference, which produce a full-scale output voltage of 2.5V or 4.096V. Alternatively, an external reference up to half the supply voltage can be used for rail-to-rail operation. The LTC2654 includes a hardware option to power up the DAC outputs at zero-scale or mid-scale, allowing more flexibility for designs that cannot be forced to ground when power is first applied. LTC2654 16-bit and 12-bit DACs and demo boards are now available. Pricing begins at \$4.80 each for the 12-bit options and \$11.70 each for the 16-bit options in 1,000-piece quantities. For more information, visit www.linear.com.


Photo Caption: 16-Bit Quad DAC with ± 4 LSB (max) INL, 10ppm/ $^{\circ}$ C (max) Internal

Summary of Features: LTC2654

- Precision Reference 10ppm/ $^{\circ}$ C Max
- Maximum INL Error: ± 4 LSB at 16-Bits
- Guaranteed Monotonic Over Temperature
- Selectable Internal or External Reference
- Low ± 2 mV (Max) Offset Error
- 2.7V to 5.5V Supply Range (LTC2654-L)
- Integrated Reference Buffers
- Ultralow Crosstalk Between DACs (< 3 nV•s)
- Power-on-Reset to Zero-Scale/Mid-Scale
- Asynchronous DAC Update Pin
- Tiny 20-Lead 4mm \times 4mm QFN & 16-Lead Narrow SSOP Packages

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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