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16-Bit Quad, I²C DAC with Internal Reference Achieves ±4LSB INL (Max)

MILPITAS, CA – August 4, 2010 – Linear Technology Corporation introduces the LTC2655, a quad voltage output 16- and 12-bit digital-to-analog converter (DAC) family with internal reference and I²C interface. The LTC2655 DACs achieve 16-bit performance of ±4LSB INL maximum over temperature, a factor of four better than the closest 16-bit quad competitor. The LTC2655 offers the lowest offset error ±2mV (max) and lowest gain error 0.1% (max), a combination that ensures that the device retains accuracy near the supply rails and provides users with a wider effective output range. The LTC2655's precision specifications make it ideal for multichannel, open loop and closed loop systems. Applications include mobile communication, instrumentation, process control and industrial automation, automated test equipment (ATE) and automotive systems.

The LTC2655's integrated reference achieves 2ppm/°C typical and 10ppm/°C maximum temperature coefficient. It is offered in small 20-pin 4mm x 4mm QFN and 16-pin narrow SSOP packages, providing space savings in densely packed circuit boards. AC performance of 9.1us settling time for a half-scale step and <1nV•s crosstalk results in minimal disturbance between DAC channels. The LTC2655 operates from a single 2.7V to 5.5V supply and communicates via a 2-wire I²C compatible interface at up to 400kHz.

The LTC2655 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 LTC2655 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. The device also includes a hardware load-DAC (LDAC) pin, three address pins for selecting 27 unique I²C addresses or 1 global address, and a REFLO pin.

LTC2655 16-bit and 12-bit DACs and demo boards are now available. Pricing begins at $5.04 each for the 12-bit options and $12.29 each for the 16-bit options in 1,000-piece quantities. For more information, visit www.linear.com/2655.

Photo Caption: Quad I²C 16-/12-Bit DACs with ±4LSB (max) INL, 10ppm/°C (max) Internal Reference

Summary of Features: LTC2655

- Integrated Reference 10ppm/°C Max
- Maximum INL Error: ±4LSB at 16 Bits
- Guaranteed Monotonic over Temperature
- Selectable Internal or External Reference
- 2.7V to 5.5V Supply Range (LTC2655-L)
- Integrated Reference Buffers
- Ultralow Crosstalk Between DACs (<1nV•s)
- Power-On Reset to Zero-Scale/Mid-Scale
- Asynchronous DAC Update Pin
- Small 20-Lead 4mm x 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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