



16-Bit Octal SPI DAC Achieves ± 4 LSB INL (Max)

MILPITAS, CA – June 29, 2009 – Linear Technology Corporation introduces the LTC2656, a 16-bit octal digital-to-analog converter (DAC) that offers ± 4 LSB INL maximum over temperature, a factor of three times better than the nearest octal competitor. The combination of low 0.1% (max) gain error and low ± 2 mV (max) offset error ensure that LTC2656 remains accurate near the supply rails and provides the user with a wider effective output range. The LTC2656's precision specifications makes it ideal for multichannel open loop and closed loop systems typically found in communication systems, industrial process control, automated test equipment (ATE) and programmable logic controllers.

The LTC2656 integrates a precision reference that achieves 2ppm/ $^{\circ}$ C typical and 10ppm/ $^{\circ}$ C maximum temperature coefficient. By integrating the reference in its tiny 20-pin 4mm x 5mm QFN and TSSOP packages, the LTC2656 offers further space reduction for densely packed circuit boards. Operating from a single 2.7V to 5.5V supply, supply current is a low 375uA per DAC with the reference activated. AC performance also stands out, as the LTC2656 offers 8.5us settling time for a half-scale step and < 1 nV•s crosstalk, resulting in minimal disturbance between DAC channels. The LTC2656 communicates via a 4-wire SPI-compatible interface up to 50MHz.

The LTC2656 offers a wide range of options to meet application specific requirements. Designers can choose between 16-bit 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 for rail-to-rail operation. The LTC2656 also includes a hardware option to power up the DAC outputs at zero-scale or midscale.

The LTC2656 is available, along with the LTC2657, an I²C-compatible 16-bit octal DAC. The LTC2656 16-bit and 12-bit DACs and demo boards are now available. The LTC2657 samples will be available in July, with production volumes scheduled for September 2009. Pricing begins at \$8.95 each for the 12-bit options and \$17.95 each for the 16-bit options in 1,000-piece quantities. For more information, visit www.linear.com.


Photo Caption: 16-Bit Octal DAC with ± 4 LSB (max) INL, 10ppm/°C (max) Internal Reference

Summary of Features: LTC2656

- Maximum 16-Bit INL Error: ± 4 LSB
- Integrated Precision Reference
 - 2.5V 10ppm/°C maximum (LTC2656-L)
 - 4.096V 10ppm/°C maximum (LTC2656-H)
- Guaranteed Monotonic Over Temperature
- Ultralow Crosstalk Between DACs (< 1 nV•s)
- Low Noise (8 μ V_{P-P}, 0.1Hz to 10Hz)
- 2.7V to 5.5V Supply Range (LTC2656-L)
- Low Power: 4mA (max) at 5V (Internal Reference Active)
- Pin-Selectable Power-on Reset Options: Zero-Scale or Mid-Scale
- Tiny 20-Pin 4mm x 5mm QFN & TSSOP 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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