Quad 12-Bit/10-Bit/8-Bit DACs Include 10ppm/°C Reference

MILPITAS, CA – April 21, 2009 – Linear Technology Corporation introduces the LTC2634 quad 12-bit, 10-bit and 8-bit rail-to-rail digital-to-analog converters (DACs), which integrate a precision reference in tiny 3mm x 3mm QFN and MSOP packages. The LTC2634 is the latest offering in Linear's family of tiny 12-bit, 10-bit, and 8-bit DACs with internal references. The LTC2634 joins the previously released LTC2636 octal and LTC2630/LTC2640 single channel DACs, offering a versatile selection of the smallest DACs for numerous applications.

The LTC2634's small size and internal reference is important for a variety of industrial, automotive and ATE applications. By integrating a 10ppm/°C reference, the LTC2636 offers further space reduction for compact circuit boards. The LTC2634 offers 12-bit performance of ±2.5LSB (max) INL error and < 2.4nV•s crosstalk, ensuring that a voltage change on one DAC has minimal effect on the other DACs. Operating from a single 2.7V to 5.5V supply, supply current is a low 125uA per DAC.

The LTC2634 DACs are available in a number of ordering options to meet a wide range of applications. In addition to selecting one of three resolution options, designers can also choose between a 2.5V or 4.096V full-scale range. Ordering options provide the choice between powering up the DACs at zero-scale or mid-scale, offering flexibility for designs that cannot be forced to ground when power is first applied. Designers can choose between an MSOP-10 package or a 16-pin 3mm x 3mm QFN package that includes a hardware load-DAC (LDAC) pin, a clear pin that asynchronously forces the DAC outputs to their respective reset state, and a serial data output pin. All LTC2634 options are guaranteed over three temperature ranges: automotive (-40°C to +125°C), industrial (-40°C

to +85°C), and commercial (0°C to +70°C). Pricing begins at $2.03 each for the 8-bit options, in 1,000-piece quantities.

Part Number	Bits	DACs	I/O	Packages
LTC2636	12, 10, 8	8	SPI	4mm x 3mm DFN-14, MSOP-16
LTC2634	12, 10, 8	4	SPI	3mm x 3mm QFN-16, MSOP-10
LTC2632*	12, 10, 8	2	SPI	3mm x 2mm DFN-10, TSOT23-8
LTC2630/ LTC2640	12, 10, 8	1	SPI	SC70-6/TSOT23-8
LTC2631	12, 10, 8	1	I^2C	TSOT23-8

* Future Product. Contact Linear Technology for Availability.

Photo Caption: 12-/10-/8-Bit Quad DACs Integrate Reference in Tiny 3mm x 3mm QFN & MSOP Packages

Summary of Features: LTC2634

- Integrated Precision Reference
  - 2.5V 10ppm/°C (LTC2634-L)
  - 4.096V 10ppm/°C (LTC2634-H)
- Maximum 12-Bit INL Error: ±2.5LSB
- Pin- & Software-Compatible SPI DACs
- Guaranteed Monotonic Over -40°C to +125°C Temperature Range
- Ultralow Crosstalk Between DACs (<2.4nV•s)
- Low Noise ($0.7mV_{pp}$, 0.1Hz to 200kHz)
- Selectable Internal or External Reference: Input or 10ppm/°C Output
- 2.7V to 5.5V Supply Range (LTC2634-L)
- Low Power Operation: 125uA per DAC
- Power-on Reset to Zero-Scale or Mid-Scale Options
- Tiny 3mm x 3mm QFN-16 & MSOP-10 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, 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. For more information, visit www.linear.com

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