



Quad 12-Bit/10-Bit/8-Bit Rail-to-Rail I²C DACs with Internal Reference Include Reset to High Impedance Outputs for Power Supply Margining

MILPITAS, CA – December 9, 2009 – Linear Technology Corporation introduces the LTC2635 quad 12-bit, 10-bit and 8-bit rail-to-rail digital-to-analog converters (DACs), which integrate a precision 10ppm/°C reference in tiny 3mm x 3mm QFN and MSOP packages. Ordering options include 2.5V (LTC2635-L) and 4.096V (LTC2635-H) DAC full-scale outputs. In addition to offering power-on reset to zero and mid-scale options, the LTC2635-L also includes ordering options for high impedance outputs at power-on reset and during shutdown. This allows the DAC to be used in applications such as power supply margining where the DAC outputs must be electrically isolated from the power supply at power-on, before being called to action to adjust supply voltages up and down.

The LTC2635's small size and internal reference are important for a variety of industrial, automotive and ATE applications. The LTC2635 offers 12-bit performance of ± 2.5 LSB (max) INL error and 3nV•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 125 μ A per DAC.

In addition to selecting one of three resolution options, designers can also choose between a 2.5V or 4.096V full-scale range, as well as power-up options for zero-scale, mid-scale or Hi-Z. The 16-pin 3mm x 3mm QFN package includes a hardware load-DAC (LDAC) pin, three address pins for selecting 27 unique I²C addresses, and a REFLO pin. The 10-pin MSOP

package has just one address pin for selection of up to 3 unique addresses on the I²C bus. All LTC2635 options are guaranteed over the automotive (-40°C to +125°C) and commercial (0°C to +70°C) temperature ranges. Pricing begins at \$2.03 each in 1,000-piece quantities. For more information, visit www.linear.com.

Part Number	Bits	DACs	I/O	Reference	Packages
LTC2637	12, 10, 8	8	I ² C	Input or Output	4mm x 3mm DFN-14, MSOP-16
LTC2636	12, 10, 8	8	SPI	Input or Output	4mm x 3mm DFN-14, MSOP-16
LTC2635	12, 10, 8	4	I ² C	Input or Output	3mm x 3mm QFN-16, MSOP-10
LTC2634	12, 10, 8	4	SPI	Input or Output	3mm x 3mm QFN-16, MSOP-10
LTC2631	12, 10, 8	1	I ² C	Input or Output	TSOT23-8
LTC2630	12, 10, 8	1	SPI	Internal Only or V _{CC}	SC70-6
LTC2640	12, 10, 8	1	SPI	Input or Output	TSOT23-8


Photo Caption: 12-/10-/8-Bit Quad DACs Reset to Hi-Z

Summary of Features: LTC2635

- Integrated Precision Reference:
 - 2.5V Full Scale 10ppm/°C (LTC2635-L)
 - 4.096V Full Scale 10ppm/°C (LTC2635-H)
- Maximum 12-Bit INL Error: ±2.5LSB
- Pin- & Software-Compatible I²C DACs
- Guaranteed Monotonic Over -40°C to +125°C Temperature Range
- Ultralow Crosstalk Between DACs (3nV•s)
- Low Noise (0.75mV_{P-P}, 0.1Hz to 200kHz)
- Selectable Internal or External Reference
- 2.7V to 5.5V Supply Range (LTC2635-L)
- Low Power Operation: 125uA per DAC
- Power-On Reset to Zero-Scale, Mid-Scale or Hi-Z 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, 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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