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## **Dual 18-Bit Current Output SPI DAC Achieves $\pm 1$ LSB INL & DNL**

MILPITAS, CA – January 10, 2012 – Linear Technology Corporation introduces the [LTC2758](#), the industry's first high performance dual, 18-bit, current output digital-to-analog converter (DAC). The LTC2758 offers accurate 18-bit DC specifications, including  $\pm 1$ LSB (max) INL and DNL over temperature. In addition to excellent DC specifications, the LTC2758 offers fast settling of 2.1 $\mu$ s and low 0.4nV•s (3V), 2nV•s (5V) glitch impulse, making it possible to produce higher frequency, lower noise output waveforms. This unique combination of DC and AC accuracy in a dual DAC enables design of higher performance medical devices, instrumentation, automated test equipment, process control and industrial automation.

The LTC2758's SoftSpan™ feature is capable of outputting six unique unipolar and bipolar output ranges up to  $\pm 10$ V. The output voltage ranges include two unipolar ranges (0V to 5V, 0V to 10V) and four bipolar ranges ( $\pm 10$ V,  $\pm 5$ V,  $\pm 2.5$ V, -2.5V to +7.5V) that can be selected using software or pin-strapping. The LTC2758 also integrates precision resistors for each DAC for reference inversion, bipolar offset and gain and offset adjustment. This eliminates the need for expensive external precision resistors and gain stages, allowing customers to improve production logistics and adjust inventory mix on the fly.

The LTC2758 communicates via a 3-wire bidirectional input/output SPI serial interface that enables readback of any internal register, as well as the DAC output span setting. Voltage-controlled offset and gain adjustment pins enable users to null system offset, gain error, or reference errors.

The LTC2758 joins the previously released pin- and software-compatible 16-bit dual I<sub>OUT</sub> DAC LTC2752. The DC1684A is the associated demonstration board to evaluate the LTC2758 and LTC2752.

The LTC2758 is available today in a 7mm x 7mm LQFP-48 package. Pricing begins at \$27.91 each for the LTC2758 in 1,000-piece quantities. For more information, visit [www.linear.com/product/LTC2758](http://www.linear.com/product/LTC2758)


## Photo Caption: Dual 18-Bit $I_{OUT}$ DAC

### Summary of Features: LTC2758

- Maximum 18-Bit INL Error:  $\pm 1$ LSB Over Temperature
- Program or Pin-Strap Six Output Ranges:  
0V to 5V, 0V to 10V,  $-2.5$ V to  $7.5$ V,  $\pm 2.5$ V,  $\pm 5$ V,  $\pm 10$ V
- Guaranteed Monotonic Over Temperature
- Glitch Impulse  $0.4\text{nV}\cdot\text{s}$  (3V),  $2\text{nV}\cdot\text{s}$  (5V)
- 18-Bit Settling Time:  $2.1\mu\text{s}$
- $2.7$ V to  $5.5$ V Single Supply Operation
- $1\mu\text{A}$  Maximum Supply Current
- Voltage-Controlled Offset & Gain Trims
- Serial Interface with Readback of All Registers
- Clear & Power-On-Reset to 0V Regardless of Output Range
- 48-Pin  $7\text{mm} \times 7\text{mm}$  LQFP Package

### About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, and  $\mu\text{Module}^{\text{®}}$  subsystems.

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