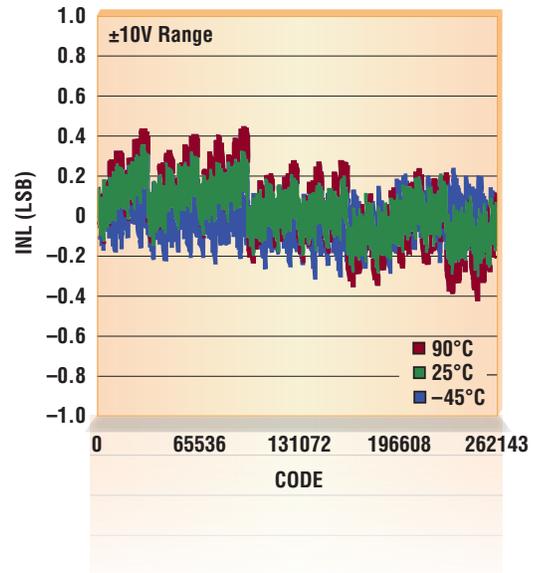
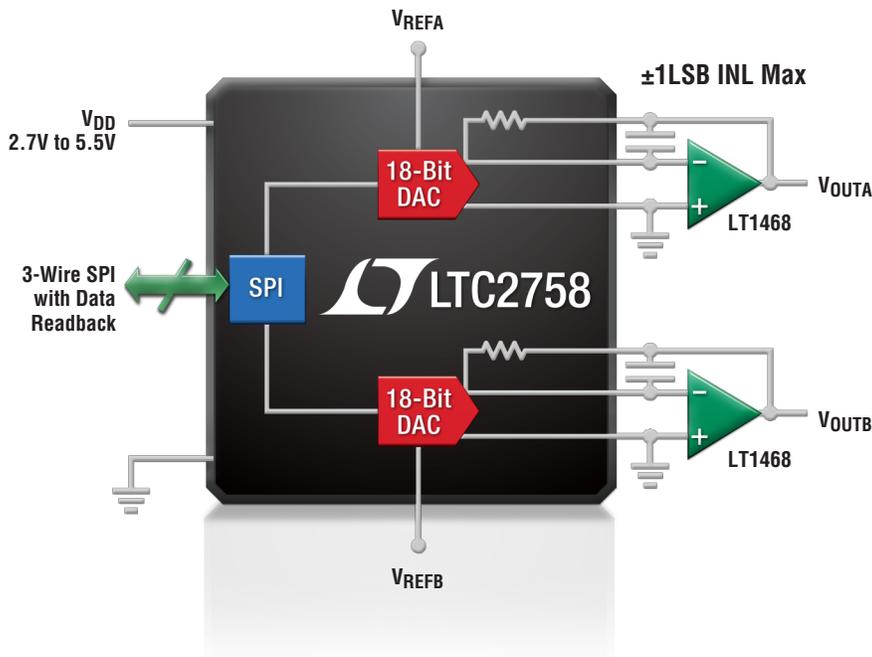


±1LSB 18-Bit Serial DACs



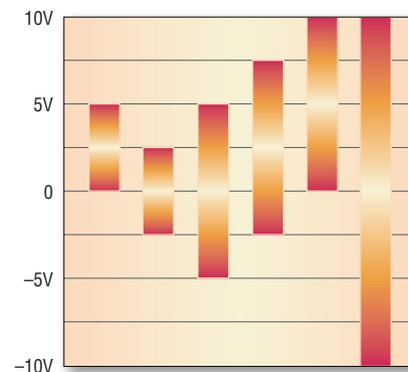
Single and Dual 18-Bit Precision DACs

The LTC®2756 single and LTC2758 dual current output digital-to-analog converters (DACs) offer true 18-bit precision DC specifications with maximum ± 1 LSB INL and DNL over temperature. The fast settling time and low glitch impulse allows generation of high frequency and low noise output waveforms. Integrated precision resistors allow reference inversion, gain and offset adjustment and bipolar level-shift, eliminating expensive external precision resistors and gain stages. The 3-wire bidirectional serial SPI interface provides a software interface to set the DAC output span and enables readback of internal registers.

Features

- Maximum 18-Bit INL Error: ± 1 LSB over Temperature
- Guaranteed Monotonic over Temperature
- Program or Pin-Strap Six Output Ranges:
0V to 5V, 0V to 10V, -2.5V to 7.5V, ± 2.5 V, ± 5 V, ± 10 V
- 18-Bit Settling Time: 2.1 μ s
- Glitch Impulse: 0.4nV•s (3V), 2nV•s (5V)
- Temperature Drift:
 - ± 0.2 LSB INL Drift from -40°C to 85°C
 - ± 0.25 ppm/°C Gain Drift
 - ± 0.15 ppm/°C Bipolar Zero Drift
- Power Supply Rejection: ± 0.8 LSB/V
- Voltage-Controlled Offset and Gain Trims
- Serial Interface with Readback of All Registers
- Clear and Power-On Reset to 0V Regardless of Output Range
- 2.7V to 5.5V Single Supply Operation
- 48-Pin 7mm x 7mm LQFP Package (LTC2758)
- 28-Lead SSOP Package (LTC2756)

SoftSpan™ Selectable Output Spans



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Single/Dual/Quad I_{OUT} R-2R Multiplying DACs

	Single Serial I/O	Single Parallel I/O	Dual Serial I/O	Dual Parallel I/O	Quad Serial I/O	Quad Parallel I/O
18-Bit	2756	2757	2758			
16-Bit	1592	2751-16	2752	2753-16	2754-16	2755-16
14-Bit	1589	2751-14		2753-14		2755-14
12-Bit	1588	2751-12	1590	2753-12	2754-12	2755-12

DAC Architecture

The LTC2756 and LTC2758 use a current output R-2R or 4-quadrant multiplying DAC architecture. This architecture offers many advantages for high precision applications. The reference load impedance is constant and can be driven with an unbuffered reference or a slow low precision op amp with no impact on static or dynamic performance. Internal feedback and level-shift resistors simplify the output loop design and eliminate the need for external precision resistors. The unbuffered output and selectable voltage range give designers maximum flexibility to choose the best amplifier for their applications.

