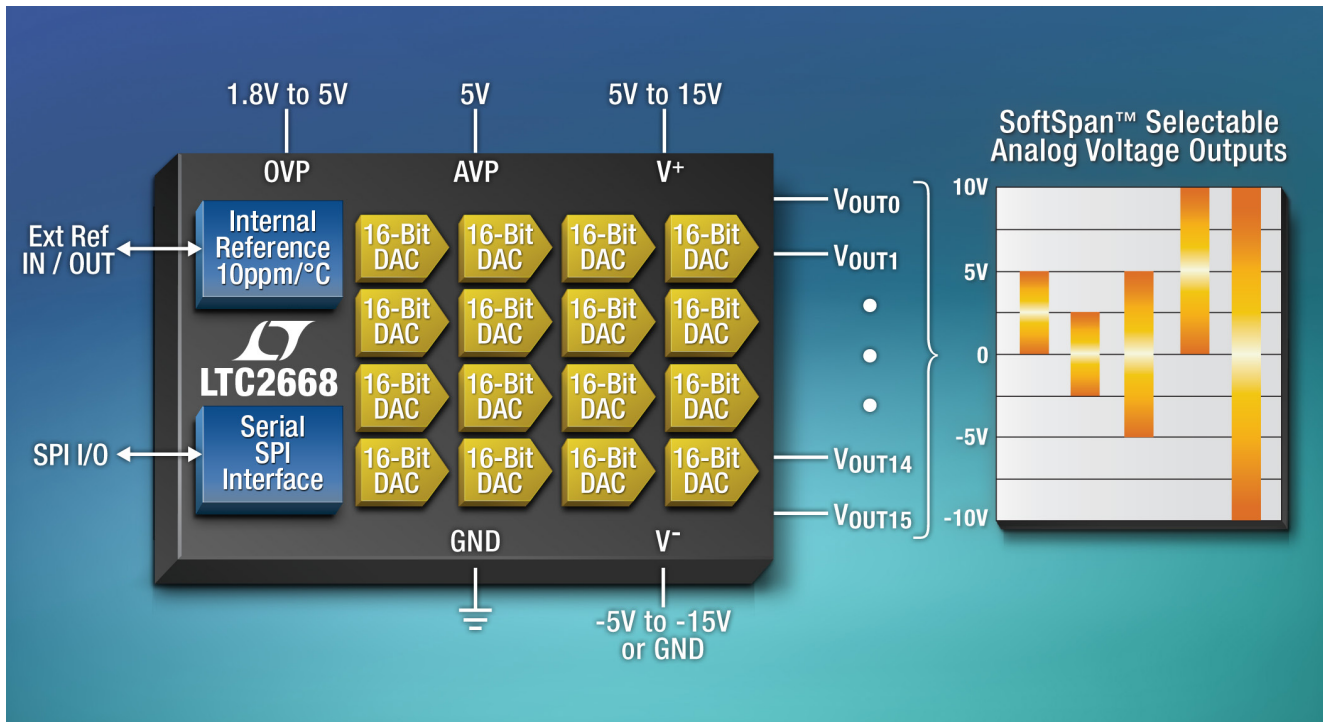


16-Channel, 16-Bit/12-Bit Voltage Output DACs



±10V V_{OUT} SoftSpan DACs with 10ppm/°C Maximum Reference

The 16-bit/12-bit LTC®2668 combines 16 voltage output DACs with five software-programmable (SoftSpan™) or pin-configurable output voltage ranges up to ±10V. Each output span is independently selectable per channel, with full 16-bit/12-bit resolution at all spans. Tight DC linearity with low AC and DC crosstalk ensures precision control in multichannel open or closed-loop systems. Additional features include an internal 16:1 analog multiplexer for calibration or monitoring circuit integrity, and a toggle function that allows the DAC to quickly toggle between two DAC codes.

Features

- **16 DACs in Small 6mm × 6mm QFN Package**
- Internal Precision Reference: 10ppm/°C (Max)
- Independently Programmable Output Ranges: 0V to 5V, 0V to 10V, ±2.5V, ±5V, ±10V
- Maximum INL Error: ±4LSB (16 Bits), ±1LSB (12 Bits)
- Flexible Single or Dual Supply Operation
- Guaranteed Monotonic Over Temperature
- Output Buffers Drive ±10mA and 1000pF Loads
- A/B Toggle via Software or Dedicated Pin
- Internal 16:1 Analog MUX
- Asynchronous DAC Update Pin
- 1.8V to 5V SPI Serial Interface
- -40°C to 125°C Operation

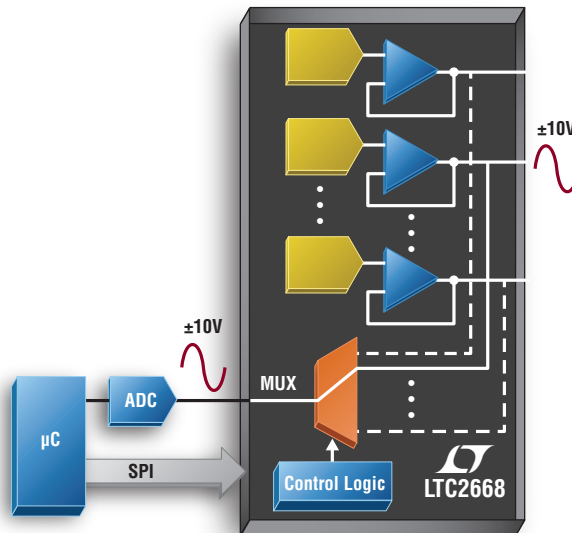
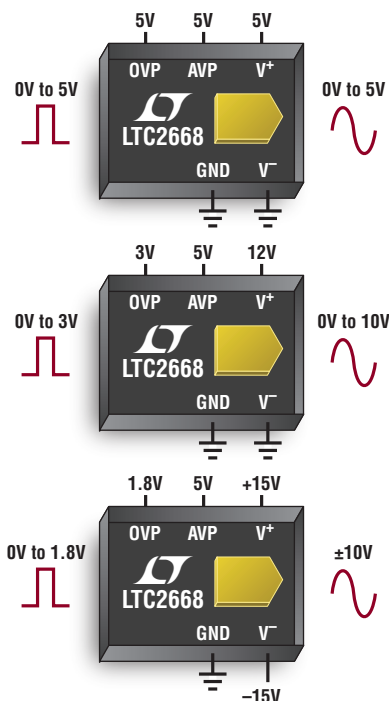
	Quad	Octal	16-Channel
16-Bit	LTC2664-16	LTC2666-16	LTC2668-16
12-Bit	LTC2664-12	LTC2666-12	LTC2668-12
Package	5mm × 5mm QFN	5mm × 5mm QFN	6mm × 6mm QFN



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Internal Analog MUX

- Connect Any DAC Output to the MUX Pin
- Eliminates High Pin Count External MUX
- Saves Board Space
- Use this Function for:
 - Calibration
 - Closed-Loop Control
 - Monitor Circuit Integrity
- Output Range: V^- to $(V^+ - 1.4V)$

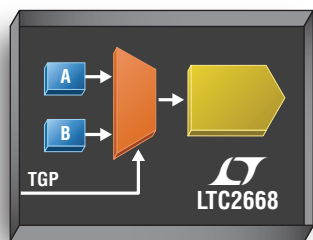
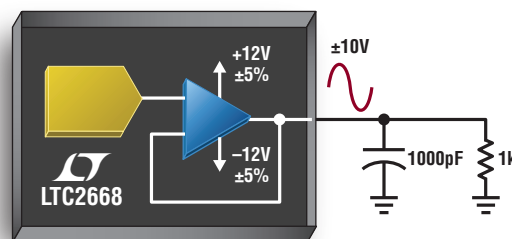


Flexible Supply Voltages

- V^+ Positive Rail
 - 4.5V to 15.75V
 - 4.6mA Operating, 35 μA Shutdown
- V^- Negative Rail
 - Single Supply: Connect to GND
 - Dual Supply: -4.5V to -15.75V
 - 4.6mA Operating, 27 μA Shutdown
- AVP DAC Core Supply
 - 4.5V to 5.5V
 - 5.4mA Operating, 1 μA Shutdown
- OVP Digital I/O Supply
 - 1.71V to 5.5V
 - <1 μA

Buffered Voltage Outputs

- Rail-to-Rail Outputs
 - $\pm 10mA$ Load, Swings within 1.4V of Rails
 - Unloaded, Swings within 10mV of Rails
- Fast Settling
 - 5V/ μs Slew Rate
 - 10V Step Settles to 1LSB in 9 μs
- Stable with Up to 1000pF of Load



A/B Toggle Function

- Quickly Toggle Between Two DAC Codes
 - Hardware Mode Using TGP Pin
 - Software Mode Using SPI
- Use this Function to:
 - Alternate Between Two Output Levels (On/Off, High/Low)
 - Dither or Modulate a DC Bias Level
 - Generate an AC Bias