

10-Bit Digital-to-Analogue Converter

Description

The WM5615 is a 10-bit voltage output digital-to-analogue converter (DAC) with a buffered reference input (high impedance). The DAC produces a maximum output voltage that is twice the reference voltage and the DAC is monotonic. The device is simple to use, running from a single supply of 5V. A power-on reset function is incorporated to ensure repeatable start-up conditions.

Digital control of the WM5615 is over a 3-wire serial bus that is CMOS compatible and easily interfaced to industry standard microprocessor and microcontroller devices. The device receives a 16-bit data word to produce the analogue output. The digital inputs feature Schmitt triggers for high noise immunity. Digital communication protocols include the SPI™, QSPI™ and Microwire™ standards.

The 8-terminal small-outline D package allows digital control of analogue functions in space-critical applications. The WM5615C is characterised for operation from 0°C to 70°C. The WM5615I is for operation from -40°C to 85°C.

SPI and QSPI are trademarks of Motorola, Inc. Microwire is a trademark of National Semiconductor Corp.

Features

- 10-bit CMOS voltage output DAC in an 8-terminal package
- 5V single supply operation
- 3-wire serial interface
- High-impedance reference input
- Maximum voltage output twice reference input voltage
- Internal power-on reset
- Low power consumption ... 1.75mW max
- 877kHz update rate
- Setting time to 0.5 LSB ... 12.5µs typical
- Monotonic over temperature
- Pin compatible with the Maxim MAX515

Applications

- Battery-powered test Instruments
- Digital offset and gain adjustment
- Battery-operated/remote industrial controls
- Machine and motion control devices
- Cellular telephones

Block Diagram

