ADVANCE INFORMATION

All information in this data sheet is preliminary and subject to change.

8/97

MAXIM

Low-Power, Dual, 12-Bit, Voltage-Output DACs with Serial Interface

General Description

The MAX5154/MAX5155 low-power, serial, voltage-output, dual, 12-bit digital-to-analog converters (DACs) consume only 500µA from a single +5V (MAX5154) or +3V (MAX5155) supply. These devices feature Rail-to-Rail® output swing and are available in a space-saving 16-pin QSOP package. To maximize dynamic range, the DAC output amplifiers are configured with an internal gain of +2.

The 3-wire serial interface is SPI™/QSPI™ and Microwire™ compatible. Each DAC has a double-buffered input organized as an input register followed by a DAC register. This allows the input and DAC registers to be updated independently or simultaneously with a 16-bit serial word. Additional features include a 2µA programmable shutdown, hardware-shutdown lockout, a separate reference-voltage input for each DAC that accepts AC and DC signals, and an active-low clear input ($\overline{CL}$) that resets all registers and DACs to zero. These devices provide a programmable logic pin for added functionality and a serial-data output pin for daisy chaining.

Applications

Industrial Process Control	Remote Industrial Controls
Digital Offset and Gain Adjustment	Microprocessor-Controlled Systems
Motion Control	Automatic Test Equipment

Features

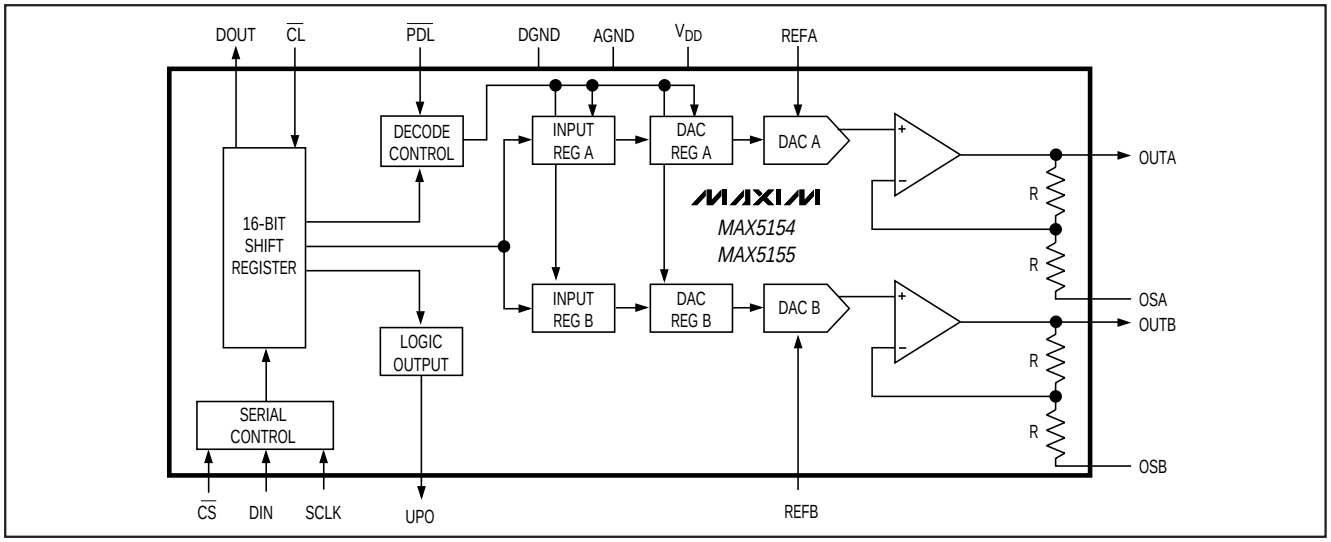
- **12-Bit Dual DAC with Internal Gain of +2**
- **Rail-to-Rail Output Swing**
- **16µs Settling Time**
- **Single-Supply Operation: +5V (MAX5154)**
  +3V (MAX5155)
- **Low Quiescent Current: 500µA (normal operation)**
  2µA (shutdown mode)
- **SPI/QSPI and Microwire Compatible**
- **Available in Space-Saving 16-Pin QSOP Package**
- **Power-On Reset Clears Registers and DACs to Zero**
- **Adjustable Output Offset**

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE	INL (LSB)
MAX5154ACPE	0°C to +70°C	16 Plastic DIP	±1/2
MAX5154BCPE	0°C to +70°C	16 Plastic DIP	±1
MAX5154ACEE	0°C to +70°C	16 QSOP	±1/2
MAX5154BCPE	0°C to +70°C	16 QSOP	±1

Ordering Information continued on next page.

Functional Diagram



Rail-to-Rail is a registered trademark of Nippon Motorola Ltd.

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

Low-Power, Dual, 12-Bit, Voltage-Output DACs with Serial Interface

_Ordering Information (continued)

PART	TEMP. RANGE	PIN-PACKAGE	INL (LSB)
MAX5154AEPE	-40°C to +85°C	16 Plastic DIP	±1/2
MAX5154BEPE	-40°C to +85°C	16 Plastic DIP	±1
MAX5154AEEE	-40°C to +85°C	16 QSOP	±1/2
MAX5154BEEE	-40°C to +85°C	16 QSOP	±1
MAX5154BMJE	-55°C to +125°C	16 CERDIP*	±1
MAX5155ACPE	0°C to +70°C	16 Plastic DIP	±1
MAX5155BCPE	0°C to +70°C	16 Plastic DIP	±2
MAX5155ACEE	0°C to +70°C	16 QSOP	±1
MAX5155BCPE	0°C to +70°C	16 QSOP	±2
MAX5155AEPE	-40°C to +85°C	16 Plastic DIP	±1
MAX5155BEPE	-40°C to +85°C	16 Plastic DIP	±2
MAX5155AEEE	-40°C to +85°C	16 QSOP	±1
MAX5155BEEE	-40°C to +85°C	16 QSOP	±2
MAX5155BMJE	-55°C to +125°C	16 CERDIP*	±2

*Contact factory for availability.

_____Pin Configuration