

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 500 μ A 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 2 μ A 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 (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

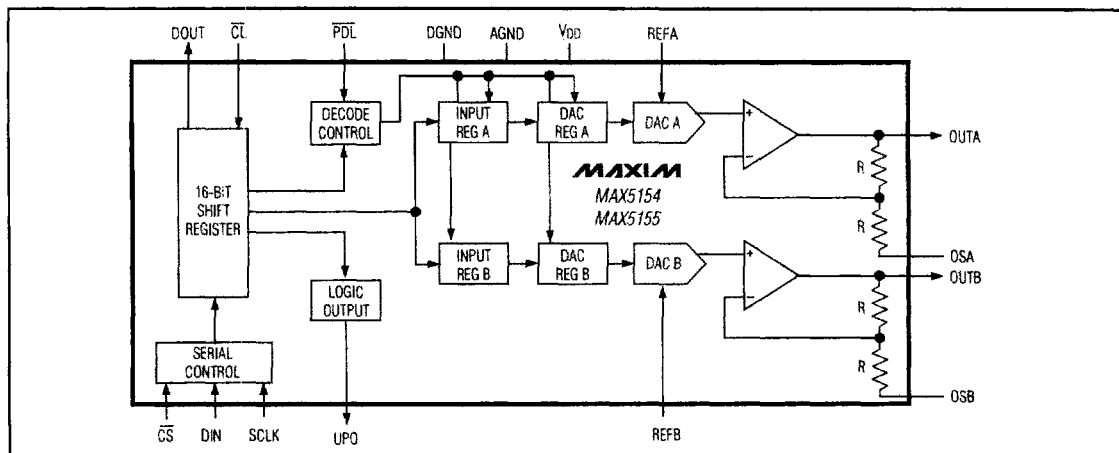
- ◆ 12-Bit Dual DAC with Internal Gain of +2
- ◆ Rail-to-Rail Output Swing
- ◆ 16 μ s Settling Time
- ◆ Single-Supply Operation: +5V (MAX5154) +3V (MAX5155)
- ◆ Low Quiescent Current: 500 μ A (normal operation) 2 μ A (shutdown mode)
- ◆ SPI/QSPI and Microwire Compatible
- ◆ Available in Space-Saving 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	$\pm 1/2$
MAX5154BCPE	0°C to +70°C	16 Plastic DIP	± 1
MAX5154ACEE	0°C to +70°C	16 QSOP	$\pm 1/2$
MAX5154BCE	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.

MAXIM

Maxim Integrated Products 9-103

For free samples & the latest literature: <http://www.maxim-ic.com>, or phone 1-800-998-8800.
For small orders, phone 408-737-7600 ext. 3468.

MAX5154/MAX5155

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
MAX5154AEFE	-40°C to +85°C	16 QSOP	±1/2
MAX5154BEFE	-40°C to +85°C	16 QSOP	±1
MAX5154BMJE	-55°C to +125°C	16 CERDIP*	±1
MAX5155 ACPE	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
MAX5155AEFE	-40°C to +85°C	16 QSOP	±1
MAX5155BEFE	-40°C to +85°C	16 QSOP	±2
MAX5155BMJE	-55°C to +125°C	16 CERDIP*	±2

*Contact factory for availability.

Pin Configuration

