

ADVANCE INFORMATION

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

8/97



Low-Power, Dual, 10-Bit, Voltage-Output DACs with Serial Interface

General Description

The MAX5158/MAX5159 low-power, serial, voltage-output, dual, 10-bit digital-to-analog converters (DACs) consume only 500 μ A from a single +5V (MAX5158) or +3V (MAX5159) 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, which 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. The MAX5158/MAX5159 provide a programmable logic pin for added functionality and a serial-data output pin for daisy-chaining.

Applications

Digital Offset and Gain Adjustment

Digitally Programmable, 4-20mA Current Loops

Motion Control
Remote Industrial Controls
 μ P-Controlled Systems

Features

- ◆ 10-Bit Dual DAC with Internal Gain of +2
- ◆ Rail-to-Rail Output Swing
- ◆ 16 μ s Settling Time
- ◆ Single-Supply Operation: +5V (MAX5158)
+3V (MAX5159)
- ◆ 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

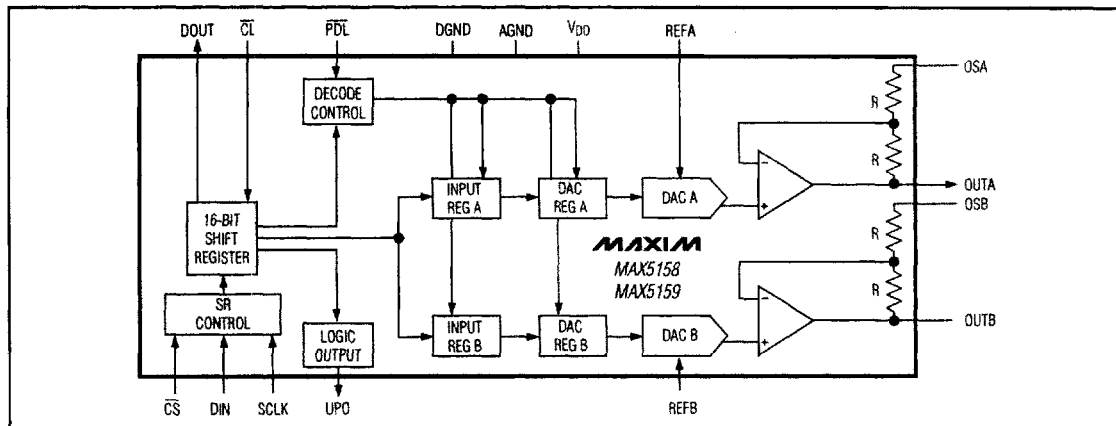
Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE	INL (LSB)
MAX5158CPE	0°C to +70°C	16 Plastic DIP	± 1
MAX5158CPE	0°C to +70°C	16 QSOP	± 1
MAX5158EPE	-40°C to +85°C	16 Plastic DIP	± 1
MAX5158EEE	-40°C to +85°C	16 QSOP	± 1
MAX5158MJE	-55°C to +125°C	16 CERDIP*	± 1

Ordering information continued on next page.

*Contact factory for availability.

Functional Diagram



Rail-to-Rail is a registered trademark of Nippon Motorola Ltd. Microwire is a trademark of National Semiconductor Corp. SPI and QSPI are trademarks of Motorola, Inc.

MAXIM

Maxim Integrated Products 9-107

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.

MAX5158/MAX5159

Low-Power, Dual, 10-Bit, Voltage-Output DACs with Serial Interface

Ordering Information (continued)

PART	TEMP. RANGE	PIN-PACKAGE	INL (LSB)
MAX5159CPE	0°C to +70°C	16 Plastic DIP	±1
MAX5159CEE	0°C to +70°C	16 QSOP	±1
MAX5159EPE	-40°C to +85°C	16 Plastic DIP	±1
MAX5159EEE	-40°C to +85°C	16 QSOP	±1
MAX5159MJE	-55°C to +125°C	16 CERDIP*	±1

*Contact factory for availability.

Pin Configuration

