

ADVANCE INFORMATION

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

8/97



High-Speed, Low-Power, Single-Supply Video Multiplexer/Amplifiers

General Description

The MAX4310 family of single-supply multiplexer (mux) amps combines high-speed operation with excellent video specifications. The MAX4310/MAX4311/MAX4312 integrate a 2-/4-/8-channel mux with a unity-gain-stable amplifier. The MAX4313/MAX4314/MAX4315 integrate a 2-/4-/8-channel mux with a fixed gain of +2V/V amplifier.

These devices operate from a single +3V to +10V supply. Their outputs swing Rail-to-Rail®, and they have an input common-mode voltage range that includes ground. The 2-/4-/8-channel MAX4310/MAX4311/MAX4312 have a 150MHz bandwidth and a 300V/μs slew rate, while the 2-/4-/8-channel MAX4313/MAX4314/MAX4315 have a 110MHz bandwidth and a 300V/μs slew rate, making them ideal for driving back-terminated cables. Supply current is less than 5.6mA. In addition, a low-power shutdown mode reduces supply current to 600μA and places the output in a high-impedance state.

The MAX4310–MAX4315 maintain an open-loop output impedance of only 8Ω over the full output range, minimizing the gain error and bandwidth changes under load that are typical of most rail-to-rail amplifiers. These devices are ideal for broadcast-video applications, with differential gain and phase errors of 0.06% and 0.04°, respectively.

Applications

Video-Signal Multiplexing
Video-Crosspoint Switching
Flash ADC Input Buffers
75Ω Cable Drivers
Medical Imaging

Features

- ♦ +3V Single-Supply Operation
- ♦ 150MHz Bandwidth
(MAX4310/MAX4311/MAX4312; gain = +1V/V)
110MHz Bandwidth
(MAX4313/MAX4314/MAX4315; gain = +2V/V)
- ♦ 300V/μs Slew Rate
- ♦ 30ns Channel-Switching Time
- ♦ 0.06%/0.04° Differential Phase/Gain Errors
- ♦ Outputs Swing Rail-to-Rail
- ♦ Input Common-Mode Range Includes GND
- ♦ 300μA Low-Power Shutdown Mode

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX4310ESA	-40°C to +85°C	8 SO
MAX4310EUA	-40°C to +85°C	8 μMAX
MAX4311ESD	-40°C to +85°C	14 Narrow SO
MAX4311EEE	-40°C to +85°C	16 QSOP
MAX4312ESE	-40°C to +85°C	16 Narrow SO
MAX4312EEE	-40°C to +85°C	16 QSOP
MAX4313ESA	-40°C to +85°C	8 SO
MAX4313EUA	-40°C to +85°C	8 μMAX
MAX4314ESD	-40°C to +85°C	14 Narrow SO
MAX4314EEE	-40°C to +85°C	16 QSOP
MAX4315ESE	-40°C to +85°C	16 Narrow SO
MAX4315EEE	-40°C to +85°C	16 QSOP

Selector Guide

PART	INPUT CHANNELS	AMPLIFIER GAIN (V/V)	PIN-PACKAGE	SHUTDOWN
MAX4310	2	+1/adjustable	8 SO/μMAX	Yes
MAX4311	4	+1/adjustable	14 Narrow SO, 16 QSOP	Yes
MAX4312	8	+1/adjustable	16 Narrow SO/QSOP	Yes
MAX4313	2	+2	8 SO/μMAX	Yes
MAX4314	4	+2	14 Narrow SO, 16 QSOP	Yes
MAX4315	8	+2	16 Narrow SO/QSOP	Yes

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



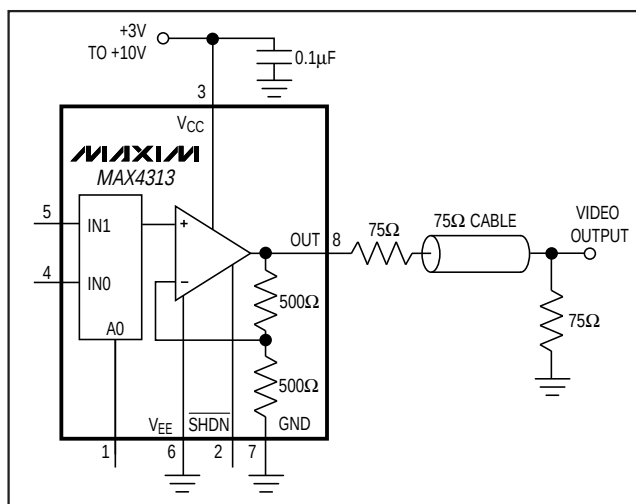
Maxim Integrated Products 1

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.

MAX4310–MAX4315

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Typical Operating Circuit



Pin Configurations

