

## ADVANCE INFORMATION

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

8/97



# Single/Triple, Low-Power, 250MHz, Current-Feedback Amplifiers with High-Speed Disable

## General Description

The MAX4188–MAX4191 current-feedback amplifiers with high-speed disable function combine high-speed performance, low distortion, and excellent video specifications with ultra-low-power operation in miniature packages. They operate from a  $\pm 2.25\text{V}$  to  $\pm 5.5\text{V}$  dual supply, or from a  $+5\text{V}$  single supply. These amplifiers consume only  $1.6\text{mA}$  of supply current and are capable of delivering  $30\text{mA}$  of output current. The MAX4188/MAX4190 are compensated for applications with a  $+2\text{V/V}$  (6dB) or greater closed-loop gain, and provide a  $-3\text{dB}$  250MHz bandwidth. The MAX4189/MAX4191 are compensated for applications with a  $+1\text{V/V}$  (0dB) or greater closed-loop gain, and provide a 260MHz  $-3\text{dB}$  bandwidth.

The MAX4188–MAX4191 have a high-speed disable mode that isolates the inputs and places the outputs in a high-impedance state. Their high off-isolation, low switching transient, fast enable/disable times, and break-before-make switching allow them to be used in a wide range of multiplexing applications. Supply current is reduced to  $450\mu\text{A}$  per amplifier in disable mode. In addition, these amplifiers feature  $0.02\%/0.04^\circ$  differential gain/phase errors, a 20ns settling time to 0.1%, and a  $720\text{V}/\mu\text{s}$  slew rate, making them ideal for high-performance video applications.

The single MAX4190/MAX4191 are offered in a tiny  $\mu\text{MAX}$  package, while the MAX4188/MAX4189 are available in a space-saving 16-pin QSOP package.

## Applications

High-Definition Surveillance Video  
Video Switching/Multiplexing  
Portable/Battery-Powered Video/Multimedia Systems  
High-Speed Analog-to-Digital Buffers  
Medical Imaging  
High-Speed Signal Processing  
Professional Cameras  
CCD Imaging Systems

## Features

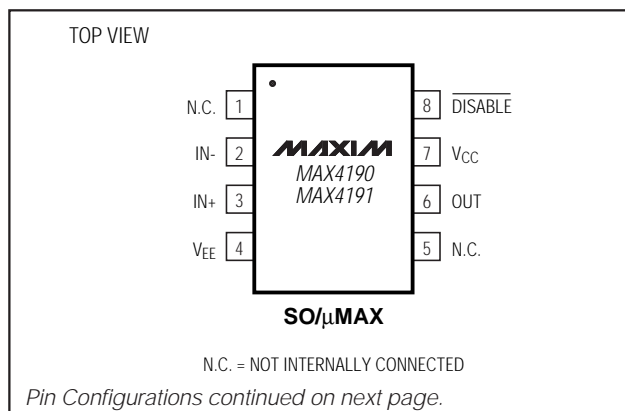
- ◆ **1.6mA/Amplifier Supply Current**
- ◆ **High Speed:**
  - 250MHz  $-3\text{dB}$  Small-Signal Bandwidth (MAX4188/MAX4190,  $\text{AvCL} \geq 2$ )
  - 260MHz  $-3\text{dB}$  Small-Signal Bandwidth (MAX4189/MAX4191,  $\text{AvCL} \geq 1$ )
- ◆ **Low-Power Disable Mode:**
  - Inputs Disabled, Outputs Placed in High-Z, Supply Current Reduced to  $450\mu\text{A}/\text{Amplifier}$
- ◆ **65ns/35ns Enable/Disable Times**
- ◆ **100mVp-p Switching Transient**
- ◆  **$720\text{V}/\mu\text{s}$  Slew Rate**
- ◆ **20ns to 0.1% Settling Time**
- ◆ **Excellent Video Specifications:**
  - 50MHz  $-0.1\text{dB}$  Gain Flatness (MAX4188/MAX4190)
  - 40MHz  $-0.1\text{dB}$  Gain Flatness (MAX4189/MAX4191)
  - Differential Gain/Phase Errors:  $0.08\%/0.04^\circ$
- ◆ **Low Distortion:**
  - 75dB SFDR ( $f_c = 5\text{MHz}$ ,  $V_0 = 2\text{Vp-p}$ )
- ◆ **Available in Space-Saving Packages:**
  - 8-Pin  $\mu\text{MAX}$  (MAX4190/MAX4191)
  - 16-Pin QSOP (MAX4188/MAX4189)

## Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX4188ESD	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	14 SO
MAX4188EEE	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	16 QSOP
MAX4189ESD	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	14 SO
MAX4189EEE	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	16 QSOP

Ordering Information continued on next page.

## Pin Configurations



Maxim Integrated Products 1

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For small orders, phone 408-737-7600 ext. 3468.

MAX4188–MAX4191

# Single/Triple, Low-Power, 250MHz, Current-Feedback Amplifiers with High-Speed Disable

## \_Ordering Information (continued)

PART	TEMP. RANGE	PIN-PACKAGE
<b>MAX4190</b> ESA	-40°C to +85°C	8 SO
MAX4190EUA	-40°C to +85°C	8 µMAX
<b>MAX4191</b> ESA	-40°C to +85°C	8 SO
MAX4191EUA	-40°C to +85°C	8 µMAX

## Pin Configurations (continued)

