

ADVANCE INFORMATION

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

8/97



High-Speed, Differential Line Receivers

General Description

The MAX4144/MAX4145/MAX4146 differential line receivers offer unparalleled high-speed performance. Utilizing a three-op-amp instrumentation amplifier architecture, these devices have fully symmetrical differential inputs and a single-ended output. They operate from $\pm 5V$ power supplies and are capable of driving a 150Ω load to $\pm 3.5V$. The MAX4144 has an internally set $+2V/V$ closed-loop gain. The MAX4145 is optimized for gains from $+1V/V$ to $+10V/V$, while the MAX4146 is optimized for gains from $+10V/V$ to $+100V/V$. The MAX4145/MAX4146 require a single external resistor to set the closed-loop gain.

These amplifiers use laser-trimmed, matched thin-film resistors to deliver a 70dB at 10MHz common-mode rejection (CMR). Using current-feedback techniques, the MAX4144 achieves a 130MHz bandwidth and a 1000V/ μs slew rate. The MAX4145 achieves a bandwidth of 150MHz and a slew rate of 600V/ μs while operating with a closed-loop gain of $+1V/V$, and the MAX4146 features a bandwidth of 70MHz and a slew rate of 800V/ μs with a gain of $+10V/V$. Excellent differential gain/phase and noise specifications make these amplifiers excellent choices for a wide variety of video and RF signal-processing applications.

For a complete differential transmission link, use the MAX4144/MAX4145/MAX4146 with the MAX4142/MAX4147 differential line drivers (see the MAX4147 data sheet for more information).

Applications

Differential-to-Single-Ended Conversion
Twisted-Pair-to-Coax Converter
High-Speed Instrumentation Amplifier
Data Acquisition
Medical Instrumentation

Features

MAX4144

- ♦ **2V/V Fixed Gain**
- ♦ **130MHz Bandwidth**
- ♦ **1000V/ μs Slew Rate**
- ♦ **70dB CMR at 10MHz**
- ♦ **-90dBc SFDR ($f_c = 10kHz$)**
- ♦ **Low Differential Gain/Phase: 0.03%/0.03°**
- ♦ **800 μA Shutdown**

MAX4145

- ♦ **External Gain Selection from $+1V/V$ to $+10V/V$**
- ♦ **150MHz Bandwidth**
- ♦ **600V/ μs Slew Rate**
- ♦ **70dB CMR at 10MHz**
- ♦ **-90dBc SFDR ($f_c = 10kHz$)**
- ♦ **Very Low Noise: $3.8nV/\sqrt{Hz}$ ($G = 10V/V$)**
- ♦ **800 μA Shutdown**

MAX4146

- ♦ **External Gain Selection**
- ♦ **70MHz Bandwidth ($A_V = 10V/V$)**
- ♦ **800V/ μs Slew Rate**
- ♦ **90dB CMR at 10MHz**
- ♦ **-82dBc SFDR ($f_c = 10kHz$)**
- ♦ **Very Low Noise: $3.5nV/\sqrt{Hz}$ ($G = 100V/V$)**
- ♦ **800 μA Shutdown**

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX4144ESD	-40°C to +85°C	14 SO
MAX4145ESD	-40°C to +85°C	14 SO
MAX4146ESD	-40°C to +85°C	14 SO

MAX4144/MAX4145/MAX4146

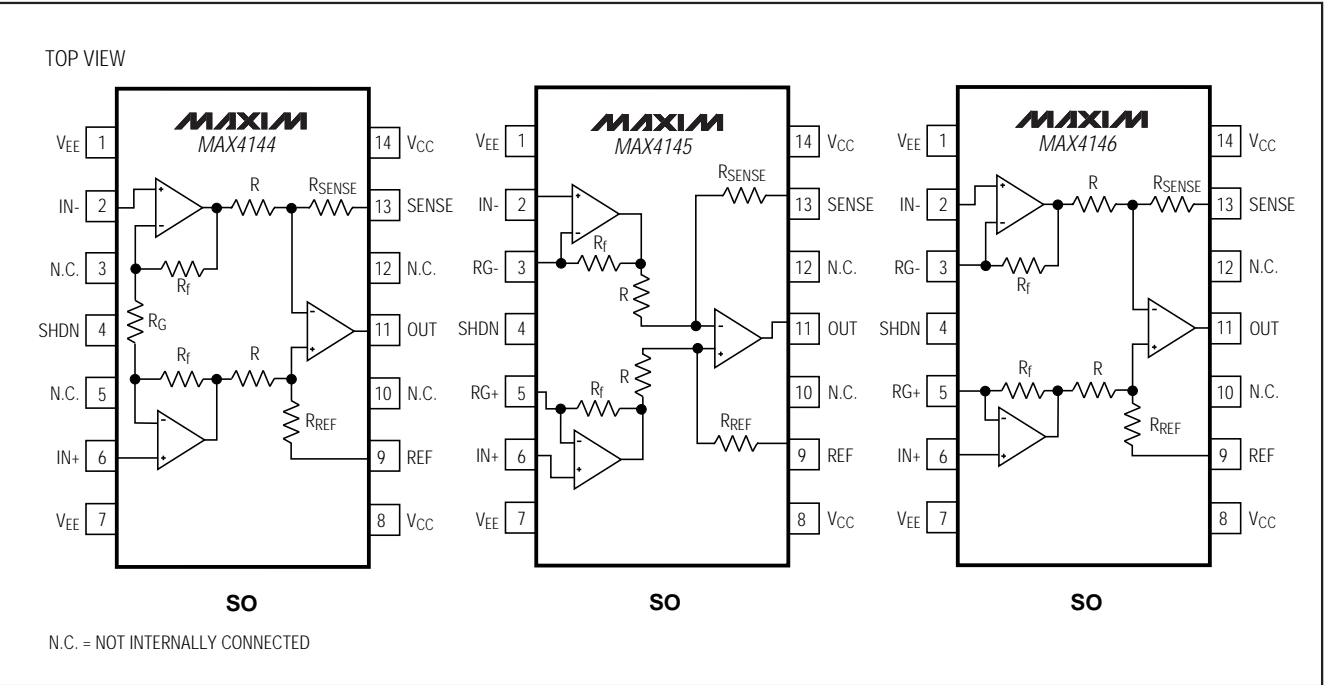


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For small orders, phone 408-737-7600 ext. 3468.

High-Speed, Differential Line Receivers

Pin Configurations/Functional Diagrams



Typical Application Circuit

