

## ADVANCE INFORMATION

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

6/95

# MAXIM

## 380MHz, Gain of +1/Gain of +2 High-Speed Buffers

MAX4177/MAX4277

### General Description

The MAX4177/MAX4277 are wide-bandwidth, fast-settling buffer amplifiers featuring high slew rate, high precision, high output current, and low differential gain and phase errors. The MAX4177 is preset for unity voltage gain (0dB), and has a small-signal -3dB bandwidth of 380MHz. The MAX4277 is preset for a voltage gain of +2 (6dB), and has a small-signal -3dB bandwidth of 350MHz.

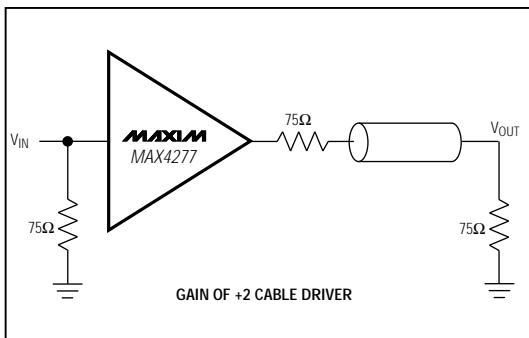
The MAX4177/MAX4277 feature the high slew rate and low power of current-mode feedback amplifiers. However, unlike conventional current-mode feedback amplifiers, these devices have a unique input stage that combines the benefits of current-feedback topology with those of the traditional voltage-feedback topology. This combination of architectures results in low input offset voltage and bias current, and high gain precision and power-supply rejection.

The MAX4177/MAX4277 are ideally suited for driving 50Ω or 75Ω loads. They are the perfect choice for high-speed cable-driving applications such as video routing. In addition, the devices incorporate a shutdown mode that can be used to disable the output in multiplexer applications and to conserve power. The MAX4177/MAX4277 are available in 8-pin DIP, SO and μMAX packages.

### Applications

- Broadcast and High-Definition TV Systems
- Video Switching and Routing
- High-Speed Cable Drivers
- Communications
- Medical Imaging
- Precision High-Speed DAC/ADC Buffers

### Typical Operating Circuit



### Features

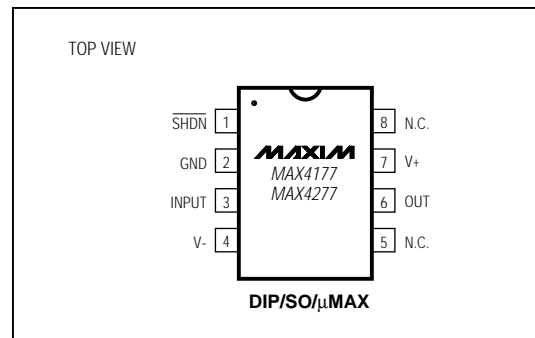
- ♦ **High Speed:**
  - 380MHz -3dB Bandwidth (MAX4177)
  - 350MHz -3dB Bandwidth (MAX4277)
  - 200MHz Full-Power Bandwidth (MAX4177, V<sub>OUT</sub> = 2V<sub>p-p</sub>)
  - 150MHz Full-Power Bandwidth (MAX4277, V<sub>OUT</sub> = 2V<sub>p-p</sub>)
  - 150MHz 0.1dB Flatness Bandwidth (MAX4177)
  - 120MHz 0.1dB Flatness Bandwidth (MAX4277)
- ♦ **Low Differential Gain and Phase Error: 0.01%/0.01°**
- ♦ **High Slew Rate: 1800V/μs (MAX4177)**
- ♦ **Low Power: 8mA Quiescent Supply Current**  
**400μA in Shutdown Mode**
- ♦ **High-Impedance Output in Shutdown Mode**
- ♦ **Low Input Bias Current: 2μA**
- ♦ **Low Input Offset Voltage: 0.5mV**
- ♦ **Low Input-Referred Voltage Noise: 5nV/√Hz**
- ♦ **High Gain Precision: 1.5% Max with 50Ω Load**
- ♦ **High PSRR: 75dB**

### Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX4177CPA	0°C to +70°C	8 Plastic DIP
MAX4177CSA	0°C to +70°C	8 SO
MAX4177CUA	0°C to +70°C	8 μMAX

Ordering Information continued on next page.

### Pin Configuration



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Call toll free 1-800-998-8800 for free samples or literature.

## 380MHz, Gain of +1/Gain of +2 High-Speed Buffers

MAX4177/MAX4277

\_Ordering Information (continued)

PART	TEMP. RANGE	PIN-PACKAGE
MAX4177EPA	-40°C to +85°C	8 Plastic DIP
MAX4177ESA	-40°C to +85°C	8 SO
MAX4177EUA	-40°C to +85°C	8 $\mu$ MAX
MAX4177MJA	-55°C to +125°C	8 CERDIP
<b>MAX4277</b> CPA	0°C to +70°C	8 Plastic DIP
MAX4277CSA	0°C to +70°C	8 SO
MAX4277CUA	0°C to +70°C	8 $\mu$ MAX
MAX4277EPA	-40°C to +85°C	8 Plastic DIP
MAX4277ESA	-40°C to +85°C	8 SO
MAX4277EUA	-40°C to +85°C	8 $\mu$ MAX
MAX4277MJA	-55°C to +125°C	8 CERDIP