

LM7171 Very High Speed High Output Current Voltage Feedback Amplifier

General Description

The LM7171 is a voltage feedback amplifier optimally designed for $A_v > 1$ operation. It provides a very high slew rate at $4100\text{V}/\mu\text{s}$ and a wide gain-bandwidth product bandwidth of 200 MHz while consuming only 6.5 mA of supply current. It is ideal for video and high speed signal processing applications such as ultrasound and pulse amplifiers. With 100 mA output current, the LM7171 can be used for video distribution, transformer driver and laser diode driver.

The $\pm 15\text{V}$ power supplies allow for large signal swings and give greater dynamic range and signal-to-noise ratio. The LM7171 offers low SFDR and THD, ideal for ADC/DAC systems. In addition, the LM7171 is specified for $\pm 5\text{V}$ operation for portable applications.

The LM7171 is built on Nationals advanced VIPTM III (Vertically integrated PNP) complementary bipolar process.

Features (Typical Unless Otherwise Noted)

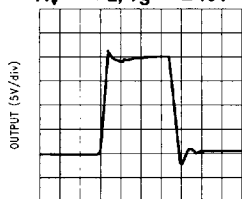
- Easy-To-Use Voltage Feedback Topology
- Very High Slew Rate 4100V/ μs
- Wide Gain-Bandwidth Product 200 MHz
- -3 dB Frequency @ $A_v = +2$ 220 MHz
- Low Supply Current 6.5 mA
- High Open Loop Gain 85 dB
- High Output Current 100 mA
- Differential Gain and Phase 0.01%, 0.02°
- Specified for $\pm 15\text{V}$ and $\pm 5\text{V}$ Operation

Applications

- HDSD and ADSL Drivers
- Multimedia Broadcast Systems
- Professional Video Cameras
- Video Amplifiers
- Copiers/Scanners/Fax
- HDTV Amplifiers
- Pulse Amplifiers and Peak Detectors
- CATV/Fiber Optics Signal Processing

Typical Performance

Large Signal Pulse Response
 $A_v = +2, V_S = \pm 15\text{V}$

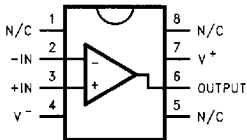


TIME (20 ns/div)

TL/H/12351-7

Connection Diagrams

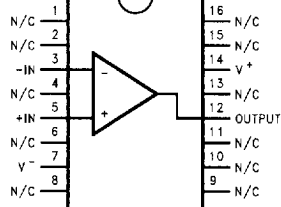
8-Pin DIP/SO



Top View

TL/H/12351-1

16-Pin Wide Body SO



Top View

TL/H/12351-2

Ordering Information

Package	Temperature Range		Transport Media	NSC Drawing
	Industrial -40°C to +85°C	Military -55°C to +125°C		
8-Pin DIP	LM7171AIN, LM7171BIN		Rails	N08E
8-Pin CDIP		5962-9553601QPA*	Rails	J08A
8-Pin Small Outline	LM7171AIM, LM7171BIM		Rails	M08A
	LM7171AIMX, LM7171BIMX		Tape and Reel	
16-Pin Small Outline	LM7171AIWM, LM7171BIWM		Rails	M16B
	LM7171AWMX, LM7171BWMX		Tape and Reel	

*For the military temperature grade, please refer to the Military Datasheet: MNL7171AMJ/883