

CLC449

1.1GHz Ultra Wideband Monolithic Op Amp

General Description

The CLC449 is an ultra high speed monolithic op amp, with a typical -3dB bandwidth of 1.1GHz at a gain of +2. This wideband op amp supports rise and fall times less than 1ns, settling time of 6ns (to 0.2%) and slew rate of 2500V/ μs . The CLC449 achieves 2nd harmonic distortion of -68dBc at 5MHz at a low supply current of only 12mA. These performance advantages have been achieved through improvements in National's proven current feedback topology combined with a high speed complementary bipolar process.

The DC to 1.2GHz bandwidth of the CLC449 is suitable for many IF and RF applications as a versatile op amp building block for replacement of AC coupled discrete designs. Operational amplifier functions such as active filters, gain blocks, differentiation, addition, subtraction and other signal conditioning functions take full advantage of the CLC449's unity-gain stable closed-loop performance.

The CLC449 performance provides greater headroom for lower frequency applications such as component video, high resolution workstation graphics, and LCD displays. The amplifier's 0.1dB gain flatness to beyond 200MHz, plus 0.8ns (2V step) rise and fall times are ideal for improved time domain performance. In addition, the 0.03%/0.02° differential gain/phase performance allows system flexibility for handling standard NTSC and PAL signals.

In applications using high speed flash A/D and D/A converters, the CLC449 provides the necessary wide bandwidth (1.1GHz), settling (6ns to 0.02%) and low distortion into 50 Ω loads to improve SFDR.

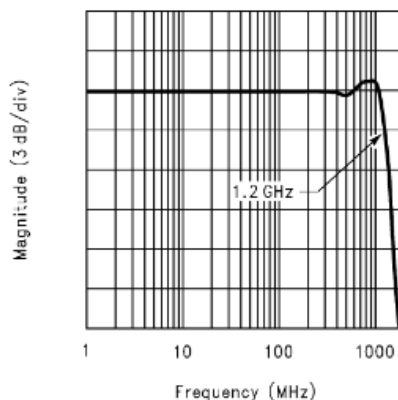
Features

- 1.1GHz small-signal bandwidth ($A_v = +2$)
- 2500V/ μs slew rate
- 0.03%, 0.02° D_G, D_ϕ
- 6ns settling time to 0.2%
- 3rd order intercept, 30dBm @ 70MHz
- Dual $\pm 5\text{V}$ or single 10V supply
- High output current: 80mA
- 2.5dB noise figure

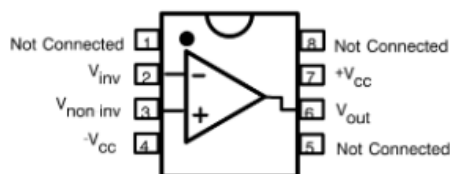
Applications

- High performance RGB video
- RF/IF amplifier
- Instrumentation
- Medical electronics
- Active filters
- High speed A/D driver
- High speed D/A buffer

Frequency Response ($A_v = +2V/V$)



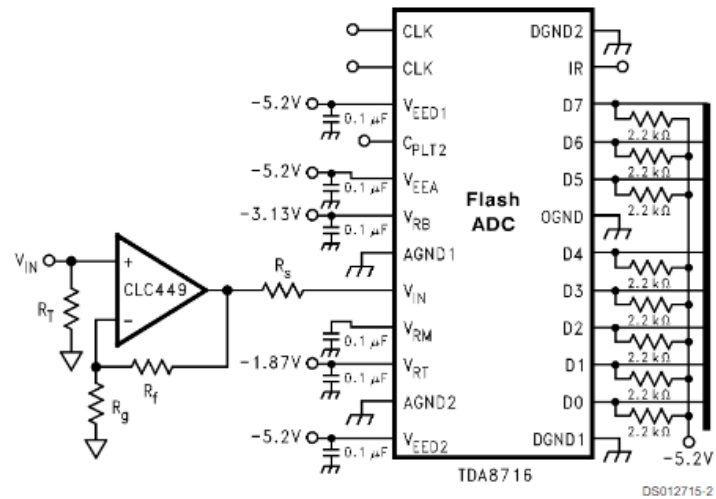
Connection Diagram



Pinout
DIP & SOIC

DS012715-3

Typical Application



120MSPS High Speed Flash ADC Driver

Ordering Information

Package	Temperature Range Industrial	Part Number	Package Marking	NSC Drawing
8-pin plastic DIP	-40°C to +85°C	CLC449AJP	CLC449AJP	N08E
8-pin plastic SOIC	-40°C to +85°C	CLC449AJE	CLC449AJE	M08A