

Comlinear™ CLC1008, CLC2008, CLC3008

1GHz, 4,800V/μs Voltage Feedback Amplifiers



FEATURES

- 1GHz -3dB bandwidth at G = 1
- 4,800V/μs slew rate
- 0.1dB gain flatness to 52MHz
- 0.01%/0.01° differential gain/phase error
- 300MHz -3dB bandwidth at G = 2
- Fast enable/disable
- 200mA output current (easily drives three video loads)
- Fully specified at 5V and ±5V supplies
- CLC1008: Lead-free SOT23-6
- Future option CLC2008: Lead-free SOIC-8
- Future option CLC3008: Lead-free TSSOP-14

APPLICATIONS

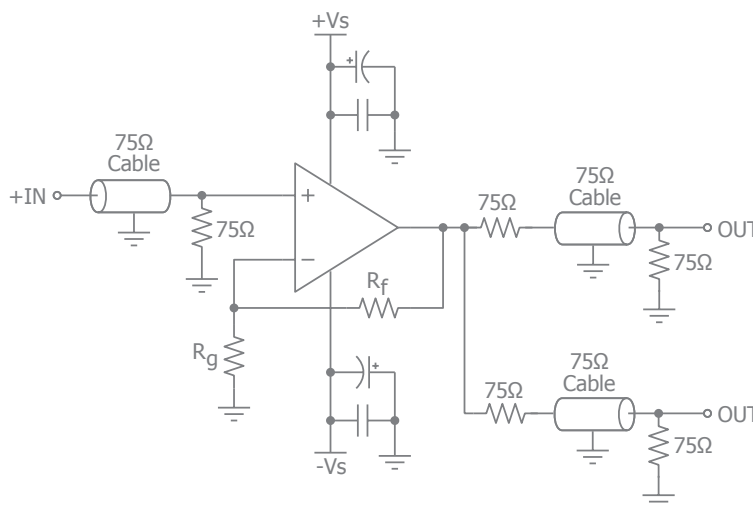
- RGB video line drivers
- High definition video driver
- Video switchers and routers
- ADC driver
- Active filters
- High speed communications
- Imaging applications

General Description

The *Comlinear* CLC1008 (single), CLC2008 (dual), and CLC3008 (triple) are high-performance, voltage feedback amplifiers that offer bandwidth and slew rate usually found in current feedback amplifiers. They provide 1GHz unity gain bandwidth, ±0.1dB gain flatness to 52MHz, and 4,800V/μs slew rate, exceeding the requirements of high-definition television (HDTV) and other broadcast multimedia applications. These *Comlinear* high-performance amplifiers also provide ample output current to drive multiple video loads.

The *Comlinear* CLC1008, CLC2008, and CLC3008 are designed to operate from ±5V or +5V supplies. The combination of high-speed, high slew rate, and fast rise and fall times make these amplifiers well suited for use in pulse amplifying and instrumentation applications. The CLC1008, CLC2008, and CLC3008 offer outputs that can be put into a high impedance disable state to allow for multiplexing or to minimize power consumption.

Typical Application - Driving Dual Video Loads



Ordering Information

Part Number	Package	Pb-Free	Operating Temperature Range	Packaging Method
CLC1008IST6X†	SOT23-6	Yes	-40°C to +125°C	Reel
CLC1008IST6†	SOT23-6	Yes	-40°C to +125°C	Rail
CLC2008ISO8X*	SOIC-8	Yes	-40°C to +125°C	Reel
CLC2008ISO8*	SOIC-8	Yes	-40°C to +125°C	Rail
CLC3008ITP14X*	TSSOP-14	Yes	-40°C to +125°C	Reel
CLC3008ITP14*	TSSOP-14	Yes	-40°C to +125°C	Rail

* Future product offering. † Preliminary.
Moisture sensitivity level for all parts is MSL-1.

Electrical Characteristics

T_A = 25°C, V_S = ±5V, R_F = 250Ω, R_L = 150Ω, G = 2; unless otherwise noted.

Parameter	Conditions	Min	Typ	Max	Units
Frequency Domain Response					
-3dB Bandwidth	G = +1, V _{OUT} = 0.2V _{pp}		1000		MHz
-3dB Bandwidth	G = +2, V _{OUT} = 0.2V _{pp}		300		MHz
Large Signal Bandwidth	G = +2, V _{OUT} = 2V _{pp}		290		MHz
0.1dB Gain Flatness	G = +2, V _{OUT} = 0.2V _{pp}		52		MHz
0.1dB Gain Flatness	G = +2, V _{OUT} = 2V _{pp}		TBD		MHz
Time Domain Response					
Rise and Fall Time	V _{OUT} = 2V step; (10% to 90%)		1.2		ns
Settling Time to 0.1%	V _{OUT} = 2V step		4		ns
Overshoot	V _{OUT} = 0.2V step		0		%
Slew Rate	G=1, 4V step		4800		V/μs
Distortion/Noise Response					
2nd Harmonic Distortion	2V _{pp} , 10MHz		-76		dBc
	2V _{pp} , 20MHz		-70		dBc
	2V _{pp} , 70MHz		-54		dBc
3rd Harmonic Distortion	2V _{pp} , 10MHz		-86		dBc
	2V _{pp} , 20MHz		-86		dBc
	2V _{pp} , 70MHz		-54		dBc
Noise Figure			TBD		dB
Input Voltage Noise	> 1MHz		7.1		nV/√Hz
Input Current Noise	at 10Hz		2.8		nV/√Hz
DC Performance					
Input Offset Voltage ⁽¹⁾		-7	1	7	mV
Average Drift			TBD		μV/°C
Input Bias Current ⁽¹⁾		-32	5	32	μA
Average Drift			TBD		nA/°C
Input Offset Current			0.5		μA
Power Supply Rejection Ratio ⁽¹⁾	DC	57	62		dB
Open-Loop Gain ⁽¹⁾	V _{OUT} = V _S / 2	46	55		dB
Supply Current ⁽¹⁾	per channel		13	17	mA
Disable Supply Current	DIS pin is grounded		0.15		mA
Input Characteristics					
Common Mode Input Range			±3.7		V
Common Mode Rejection Ratio ⁽¹⁾	DC	62	70		dB
Output Characteristics					
Output Voltage Swing	R _L = 150Ω ⁽¹⁾	±3.6	±4		V
	R _L = 1kΩ		TBD		V
Output Current			±200		mA
Short-Circuit Output Current	V _{OUT} = V _S / 2		TBD		mA

Notes:

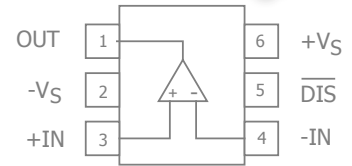
1. 100% tested at 25°C.

Refer to the data sheet for complete product specifications.

Available Packages

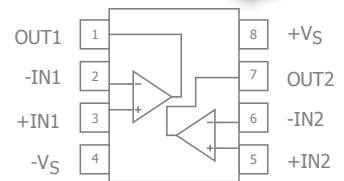
CLC1008 SOT23-6

(not actual size)



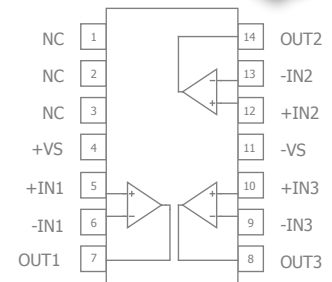
CLC2008 SOIC-8

(future option/
not actual size)



CLC3008 TSSOP-14

(future option/
not actual size)



For additional information regarding our products, please visit the CADEKA at: cadeka.com

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