

Comlinear™ CLC2600, CLC3600, CLC4600

Dual, Triple, and Quad 300MHz Amplifiers



FEATURES

- 0.1dB gain flatness to 95MHz
- 0.03%/0.04° differential gain/phase error
- 230MHz -3dB bandwidth at G = 2
- 300MHz -3dB bandwidth at G = 1
- 1,300V/μs slew rate
- 50mA output current (easily drives two video loads)
- 3.3mA supply current
- Fully specified at ±5V supplies
- CLC2600: Lead-free SOIC-8
- CLC4600: Lead-free SOIC-14

APPLICATIONS

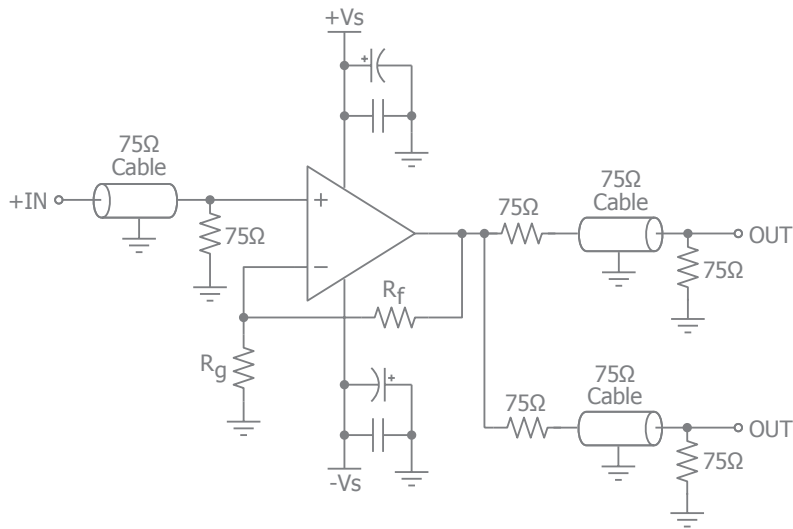
- Video line drivers
- S-Video driver
- Video switchers and routers
- ADC buffer
- Active filters
- Cable drivers
- Twisted pair driver/receiver

General Description

The *Comlinear* CLC2600 (dual), CLC3600 (triple), and CLC4600 (quad) are high-performance, current feedback amplifiers. These amplifiers provide 300MHz unity gain bandwidth, ±0.1dB gain flatness to 95MHz, and provide 1,300V/μs slew rate exceeding the requirements of high-definition television (HDTV) and other multimedia applications. These *Comlinear* high-performance amplifiers also provide ample output current to drive multiple video loads.

The *Comlinear* CLC2600, CLC3600, and CLC4600 are designed to operate from ±5V supplies. They consume only 3.3mA of supply current per channel. The combination of high-speed, low-power, and excellent video performance make these amplifiers well suited for use in many general purpose, high-speed applications including standard definition and high definition video.

Typical Application - Driving Dual Video Loads



Ordering Information

Part Number	Package	Pb-Free	Operating Temperature Range	Packaging Method
CLC2600ISO8X	SOIC-8	Yes	-40°C to +85°C	Reel
CLC2600ISO8	SOIC-8	Yes	-40°C to +85°C	Rail
CLC3600ISO14X	SOIC-14	Yes	-40°C to +85°C	Reel
CLC3600ISO14	SOIC-14	Yes	-40°C to +85°C	Rail
CLC4600ISO14X	SOIC-14	Yes	-40°C to +85°C	Reel
CLC4600ISO14	SOIC-14	Yes	-40°C to +85°C	Rail

Moisture sensitivity level for all parts is MSL-1.

Electrical Characteristics

T_A = 25°C, V_S = ±5V, R_F = 510Ω, R_L = 100Ω, G = 2; unless otherwise noted.

Parameter	Conditions	Min	Typ	Max	Units
Frequency Domain Response					
-3dB Bandwidth	G = +1, R _F = 1.24kΩ V _{OUT} = 0.2V _{pp}		300		MHz
-3dB Bandwidth	G = +2, V _{OUT} = 0.2V _{pp}		230		MHz
Large Signal Bandwidth	G = +2, V _{OUT} = 4V _{pp}		155		MHz
0.1dB Gain Flatness	G = +2, V _{OUT} = 0.2V _{pp}		95		MHz
0.1dB Gain Flatness	G = +2, V _{OUT} = 4V _{pp}		55		MHz
Time Domain Response					
Rise and Fall Time	V _{OUT} = 2V step; (10% to 90%)		1.8		ns
Settling Time to 0.1%	V _{OUT} = 2V step		6		ns
Overshoot	V _{OUT} = 0.2V step		2.5		%
Slew Rate	4V step		1300		V/μs
Distortion/Noise Response					
2nd Harmonic Distortion	2V _{pp} , 1MHz		-80		dBc
3rd Harmonic Distortion	2V _{pp} , 1MHz		-86		dBc
Total Harmonic Distortion	2V _{pp} , 1MHz		-79.5		dB
Differential Gain	NTSC (3.58MHz), DC-coupled, R _L = 150Ω		0.03		%
Differential Phase	NTSC (3.58MHz), DC-coupled, R _L = 150Ω		0.04		°
Input Voltage Noise	> 1MHz		6.4		nV/√Hz
Input Current Noise (+)	> 1MHz		1.0		pA/Hz
Input Current Noise (-)	> 1MHz		9.3		pA/Hz
Crosstalk	Channel-to-Channel 5MHz		-56		dB
DC Performance					
Input Offset Voltage ⁽¹⁾		-6	1.4	+6	mV
Average Drift			15		μV/°C
Input Bias Current Non-Inverting ⁽¹⁾		-2.6	1.3	2.6	μA
Average Drift			2.6		nA/°C
Input Bias Current Inverting ⁽¹⁾		-14	4.4	14	μA
Average Drift			16		nA/°C
Power Supply Rejection Ratio ⁽¹⁾	DC	54	65		dB
Open-Loop Transresistance	V _{OUT} = V _S /2		TBD		mΩ
Supply Current ⁽¹⁾	CLC2600 Total		6.6	9	mA
	CLC3600 Total		13.2	18	mA
	CLC4600 Total		13.2	18	mA
Input Characteristics					
Input Resistance	Non-Inverting		19		mΩ
Input Capacitance			1		pF
Common Mode Input Range			±2.3		V
Common Mode Rejection Ratio ⁽¹⁾	DC	54	57		dB
Output Characteristics					
Output Resistance	Closed Loop, DC		110		mΩ
Output Voltage Swing	R _L = 100Ω	-2.7	±3	2.7	V
	R _L = 1kΩ		±3.3		V
Output Current			50		mA
Short-Circuit Output Current	V _{OUT} = V _S /2		67		mA

Notes:

1. 100% tested at 25°C.

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

CADEKA Headquarters Loveland, Colorado

T: 970.663.5452

T: 877.663.5415 (toll free)

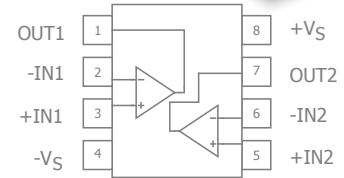
CADEKA, the CADEKA logo design, and Comlinear and the Comlinear logo design, are trademarks or registered trademarks of CADEKA Microcircuit LLC. All other brand and product names may be trademarks of their respective companies.

Copyright ©2007 by CADEKA Microcircuit LLC. All rights reserved. 0707

Available Packages

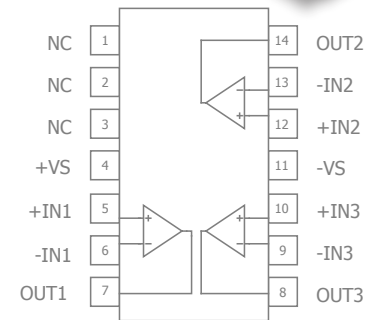
CLC2600 SOIC-8

(not actual size)



CLC3600 SOIC-14

(not actual size)



CLC4600 SOIC-14

(not actual size)

