Product Brief

CADEKA
Amplify the Human Experience

Comlinear® CLC2601, CLC3601, CLC4601

Dual, Triple, and Quad 550MHz Amplifiers

FEATURES

- 0.1dB gain flatness to 120MHz
- 0.01%/0.06° differential gain/ phase error
- 335MHz -3dB bandwidth at G = 2
- 550MHz -3dB bandwidth at G = 1
- 1,500V/µs slew rate
- 52mA output current (easily drives two video loads)
- 5.2mA supply current
- Fully specified at ±5V supplies
- CLC2601: Pb-free SOIC-8
- CLC3601/CLC4601: Pb-free SOIC-14

APPLICATIONS

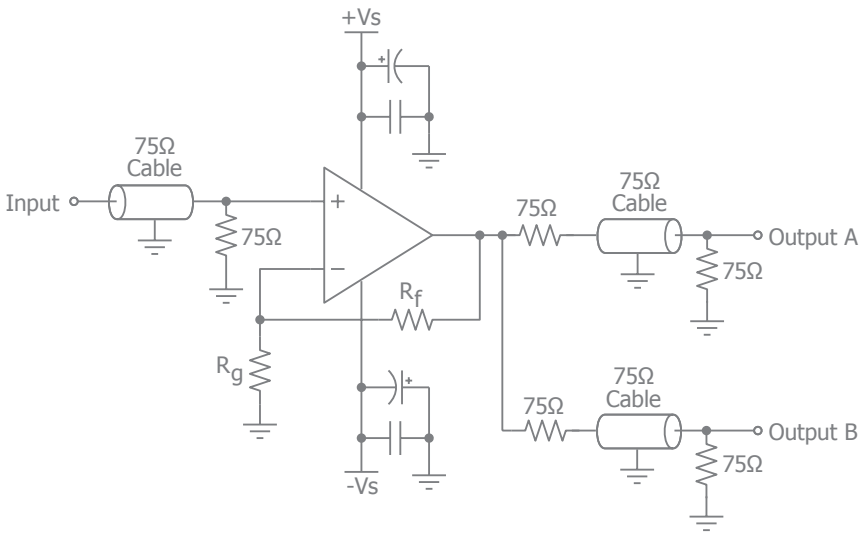
- Video line drivers
- S-Video driver
- Video switchers and routers
- ADC buffer
- Active filters
- Cable drivers
- Twisted pair driver/receiver

General Description

The *Comlinear* CLC2601 (dual), CLC3601 (triple), and CLC4601 (quad) are high-performance, current feedback amplifiers. These amplifiers provide 450MHz unity gain bandwidth, ±0.1dB gain flatness to 120MHz, and provide 1,500V/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* CLC2601, CLC3601, and CLC4601 are designed to operate from ±5V supplies. They consume only 5.2mA of supply current per channel. The combination of high-speed, low-power, and excellent video perfomance 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	RoHS Compliant	Operating Temperature Range	Packaging Method
CLC2601ISO8X	SOIC-8	Yes	Yes	-40°C to +85°C	Reel
CLC2601ISO8	SOIC-8	Yes	Yes	-40°C to +85°C	Rail
CLC3601ISO14X	SOIC-14	Yes	Yes	-40°C to +85°C	Reel
CLC3601ISO14	SOIC-14	Yes	Yes	-40°C to +85°C	Rail
CLC4601ISO14X	SOIC-14	Yes	Yes	-40°C to +85°C	Reel
CLC4601ISO14	SOIC-14	Yes	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 = 1kΩ V_{OUT} = 0.2V_{pp}		550		MHz
-3dB Bandwidth	G = +2, V_{OUT} = 0.2V_{pp}		335		MHz
Large Signal Bandwidth	G = +2, V_{OUT} = 4V_{pp}		200		MHz
0.1dB Gain Flatness	G = +2, V_{OUT} = 0.2V_{pp} (R_f = 453Ω for CLC4601)		120		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%)		1.4		ns
Settling Time to 0.1%	V_{OUT} = 2V step		20		ns
Overshoot	V_{OUT} = 0.2V step		1.5		%
Slew Rate	V_{OUT} = 4V step		1500		V/µs
Distortion/Noise Response					
2nd Harmonic Distortion	2V_{pp}, 1MHz		-82		dBc
3rd Harmonic Distortion	2V_{pp}, 1MHz		-83		dBc
Total Harmonic Distortion	2V_{pp}, 1MHz		-80		dB
Differential Gain	NTSC (3.58MHz), DC-coupled, R_L = 150Ω		0.01		%
Differential Phase	NTSC (3.58MHz), DC-coupled, R_L = 150Ω		0.06		°
Input Voltage Noise	> 1MHz		7		nV/√Hz
Input Current Noise (+)	> 1MHz		1.3		pA/√Hz
Input Current Noise (-)	> 1MHz		11		pA/√Hz
Crosstalk	Channel-to-Channel 5MHz		-56		dB
DC Performance					
Input Offset Voltage[1]		-7.5	2.7	7.5	mV
Average Drift			15		µV/°C
Input Bias Current Non-Inverting[1]		-7.0	2.6	7.0	µA
Average Drift			6		nA/°C
Input Bias Current Inverting[1]		-30	7.4	30	µA
Average Drift			15		nA/°C
Power Supply Rejection Ratio[1]	DC	57	61		dB
Open-Loop Transresistance	V_{OUT} = V_S/2		420		mΩ
Supply Current[1]	CLC2601 Total		10.4	14	mA
	CLC3601 Total		20.8	28	mA
	CLC4601 Total		20.8	28	mA
Input Characteristics					
Input Resistance	Non-Inverting		8		mΩ
Input Capacitance			1		pF
Common Mode Input Range			±2.3		V
Common Mode Rejection Ratio[1]	DC	50	54		dB
Output Characteristics					
Output Resistance	Closed Loop, DC		90		mΩ
Output Voltage Swing	R_L = 100Ω	-2.6	±2.95	2.6	V
	R_L = 1kΩ		±3.35		V
Output Current			52		mA
Short-Circuit Output Current	V_{OUT} = V_s/2		65		mA

Notes:
1. 100% tested at 25°C.
Refer to the data sheet for complete product specifications.

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

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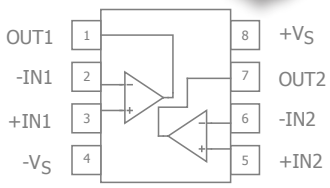
Available Packages

CLC2601 SOIC-8
(not actual size)



CLC3601 SOIC-14
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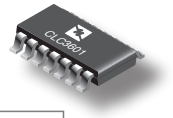

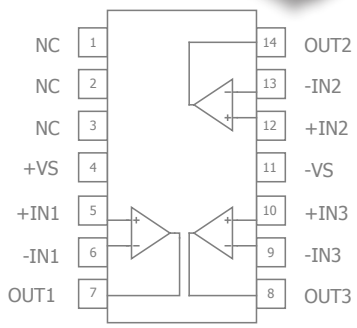

CLC4601 SOIC-14
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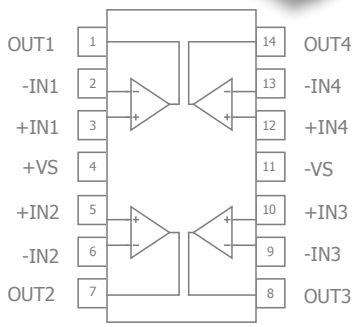

Comlinear CLC2601, CLC3601, CLC4601 Dual, Triple, and Quad 550MHz Amplifiers Rev 1D

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