

Comlinear™ CLC1602, CLC3602

Single and Triple 1.8GHz, Low Distortion Amplifiers



FEATURES

- 0.1dB gain flatness to 115MHz
- 0.01%/0.01° differential gain/phase error
- 1280MHz -3dB bandwidth at G = 2
- 1.8GHz -3dB bandwidth at G = 1
- 7,400V/μs slew rate
- 200mA output current
- -76/-90dBc 2nd/3rd harmonics at 20MHz
- -61/-67dBc 2nd/3rd harmonics at 70MHz
- Fully specified at 5V and ±5V supplies
- CLC1602: Lead-free SOT23-6
- Future option CLC3602: Lead-free TSSOP-14

APPLICATIONS

- Professional video
- High resolution video graphics
- Video switchers and routers
- Communication receivers
- Active filters
- IF/RF gain stage
- Instrumentation
- CCD imaging

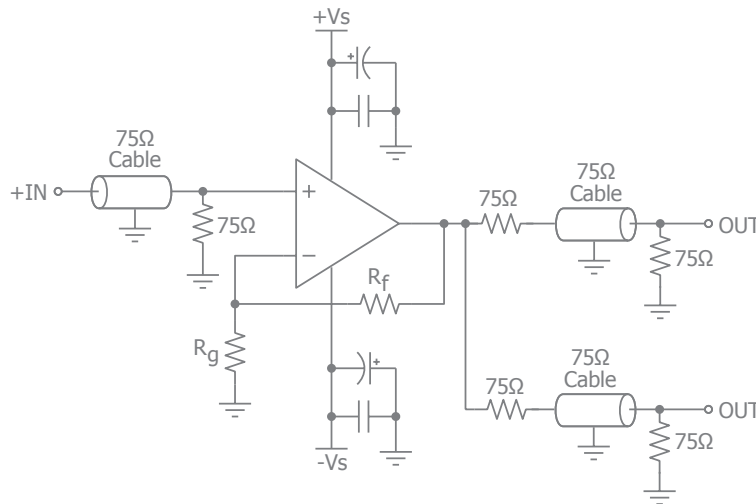
General Description

The *Comlinear* CLC1602 (single) and CLC3602 (triple) are high-performance, current feedback amplifiers. These amplifiers provide 1.8GHz unity gain bandwidth and provide 7,400V/μs slew rate exceeding the requirements of high-definition television (HDTV) and other multimedia applications.

These *Comlinear* high-performance amplifiers offer excellent video specifications: 0.1dB gain flatness to 115MHz with ample output current to drive multiple video loads. Radar and communication receivers will benefit from the low harmonic distortion performance (-61/-67dBc HD2/HD3 at 70MHz) of the CLC1602 family of amplifiers.

With 7,400V/μs slew rate, 0.5ns rise/fall times, and 4ns settling time to 0.1% the *Comlinear* CLC1602 and CLC3602 are well suited for pulse amplifying and instrumentation applications.

Typical Application - Driving Dual Video Loads



Ordering Information

Part Number	Package	Pb-Free	Operating Temperature Range	Packaging Method
CLC1602IST6X†	SOT23-6	Yes	-40°C to +125°C	Reel
CLC1602IST6†	SOT23-6	Yes	-40°C to +125°C	Rail
CLC3602ITP14X*	TSSOP-14	Yes	-40°C to +125°C	Reel
CLC3602ITP14*	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.

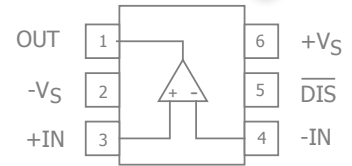
Parameter	Conditions	Min	Typ	Max	Units
Frequency Domain Response					
-3dB Bandwidth	G = +1, V _{OUT} = 0.2V _{pp}		1800		MHz
-3dB Bandwidth	G = +2, V _{OUT} = 0.2V _{pp}		1280		MHz
Large Signal Bandwidth	G = +2, V _{OUT} = 4V _{pp}		800		MHz
0.1dB Gain Flatness	G = +2, V _{OUT} = 0.2V _{pp}		115		MHz
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%)		0.5		ns
Settling Time to 0.1%	V _{OUT} = 2V step		4		ns
Overshoot	V _{OUT} = 0.2V step		2		%
Slew Rate	4V step		7400		V/μs
Distortion/Noise Response					
2nd Harmonic Distortion	2V _{pp} , 5MHz		-81		dBc
	2V _{pp} , 20MHz		-76		dBc
	2V _{pp} , 70MHz		-61		dBc
3rd Harmonic Distortion	2V _{pp} , 5MHz		-92		dBc
	2V _{pp} , 20MHz		-90		dBc
	2V _{pp} , 70MHz		-67		dBc
Input Voltage Noise	> 1MHz		2.3		nV/√Hz
DC Performance					
Input Offset Voltage ⁽¹⁾		-5	2	+5	mV
Input Bias Current ⁽¹⁾	Non-inverting	-30	5	30	μA
Input Bias Current ⁽¹⁾	Inverting	-60	25	60	μA
Power Supply Rejection Ratio ⁽¹⁾	DC	80	87		dB
Open-Loop Transimpedance	V _{OUT} = V _S / 2		110		kΩ
Supply Current ⁽¹⁾	per channel		12	16	mA
Disable Supply Current	DIS pin is grounded		0.14		mA
Input Characteristics					
Input Resistance	Non-inverting		TBD		MΩ
Input Capacitance			1.5		pF
Common Mode Input Range			±3.8		V
Common Mode Rejection Ratio ⁽¹⁾	DC	55	60		dB
Output Characteristics					
Output Resistance	Closed Loop, DC		TBD		mΩ
Output Voltage Swing	R _L = 150Ω ⁽¹⁾	-3.5	±3.8	3.5	V
	R _L = 1kΩ		TBD		V
Output Current			±200		mA
Short-Circuit Output Current	V _{OUT} = V _S / 2		TBD		mA


Notes:

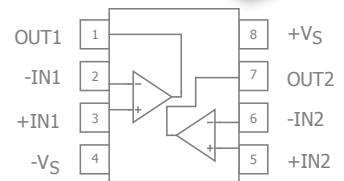
1. 100% tested at 25°C. Refer to the data sheet for complete product specifications.

Available Packages

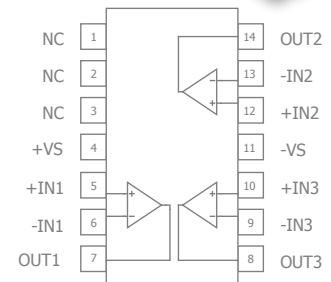
CLC1602 SOT23-6
(not actual size) 



CLC2007 SOIC-8
(future option/
not actual size) 



CLC3602 TSSOP-14
(future option/
not actual size) 



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

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