

Features

- 2:1 and 4:1 Mux Available
- Single and Triple Channels
- $\pm 5V$ Operation
- Gain of 1
- 600MHz Bandwidth
- Supply Current of 11mA/Channel

Applications

- HDTV/DTV Analog Inputs
- Video Projectors
- Computer Monitors
- Set Top Boxes
- Security Video
- Broadcast Video Equipment

Ordering Information

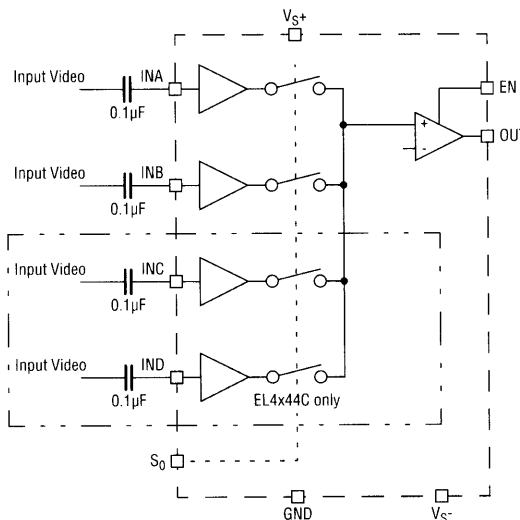
Part No.	Package	Tape & Reel	Outline #
EL4142CY	8-Pin MSOP	-	MDP0043
EL4144CU	16-Pin QSOP	-	MDP0040
EL4342CU	24-Pin QSOP	-	MDP0040
EL4344CU	28-Pin QSOP	-	MDP0040

General Description

The EL4142C, EL4342C, EL4144C, and EL4344C are 600MHz bandwidth multiplexing amplifiers designed primarily for input video switching. The EL4142C and EL4342C contain 2:1 multiplexers whereas the EL4144C and EL4344C contain 4:1 multiplexing amplifiers. The EL4142C and EL4144C have one channel per package and three channel versions can be found in the EL4342C and EL4344C.

The gain of the MUX amp is nominally set to 1. The EN pin can be used to tri-state the MUX output, enabling parts to be paralleled for a greater number of inputs. All logic inputs are referenced to the GND pin.

The EL4142C is available in the 8-pin MSOP package, the EL4144C in a 16-pin QSOP, the EL4342C in a 24-pin QSOP, and the EL4344C in a 28-pin QSOP. All parts are specified for operation over the full $-40^{\circ}C$ to $+85^{\circ}C$ temperature range.



EL4142C, EL4342C, EL4144C, EL4344C

600MHz Multiplexing Amplifiers - Gain of 1

Absolute Maximum Ratings (T_A = 25°C)

Values beyond absolute maximum ratings can cause the device to be prematurely damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Supply Voltage (V_{S+} to V_{S-}) 11V
 Input Voltage V_{S-} - 0.3V, V_{S+} +0.3V

Storage Temperature Range -65°C to +150°C
 Ambient Operating Temperature -40°C to +85°C
 Operating Junction Temperature 125°C
 Power Dissipation Se: Curves

Important Note:

All parameters having Min/Max specifications are guaranteed. Typ values are for information purposes only. Unless otherwise noted, all tests are at the specified temperature and are pulsed tests, therefore: T_T = T_C = T_A

Simulation Specifications

V_S = +5V, V_{S-} = -5V, GND = 0V, T_A = 25°C, Input Video = 1V_{p-p} & R_L = 150Ω to GND, unless otherwise specified.

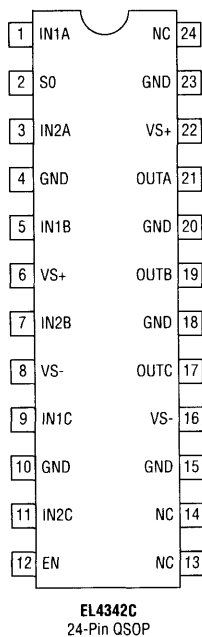
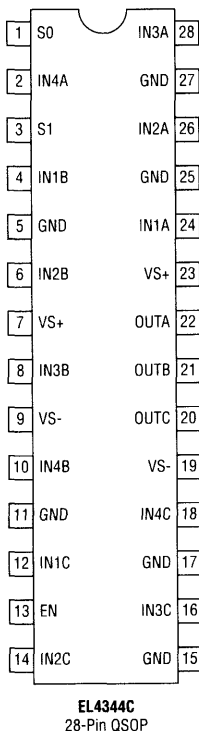
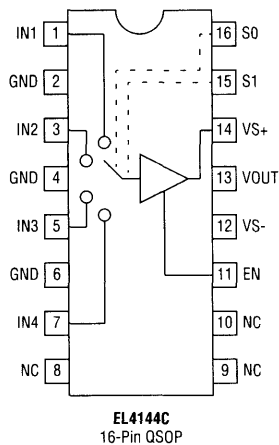
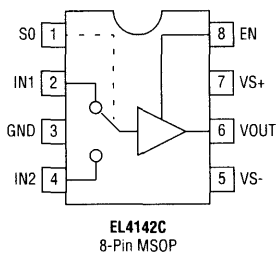
Parameter	Description	Conditions	Min	Typ	Max	Unit
General						
I _S	Supply Current (per channel)	No Load, V _{IN} = 0V		12	14	mA
BW	-3dB Bandwidth			600		MHz
FBW	0.1dB Bandwidth			200		MHz
SR	Slew Rate	25% to 75%, R _L = 150Ω	1200	1600		V/μs
t _{SW}	Switching Time	10% to 90%		2		ns
V _{OP}	Positive Output Swing		3.3	3.5		V
V _{ON}	Negative Output Swing			-3.5	3.2	V
I _{OUT}	Output Current	R _L = 10Ω to GND	80	100		mA
dG	Differential Gain Error	Standard NTSC test, A _V = 2, R _L = 150Ω		0.07		%
dP	Differential Phase Error	Standard NTSC test, A _V = 2, R _L = 150Ω		0.01		°
V _{IN}	Input Voltage (video inputs)		2.8		2.3	V
V _{OS}	Offset Voltage		-1		1	mV
V _H	Input High Voltage (logic inputs)		2			V
V _L	Input Low Voltage (logic inputs)				0.8	V
e _n	Voltage Noise			17		nV/√Hz
THD	Total Harmonic Distortion	V _{OUT} = 2V _{p-p} , R _L = 150Ω, f = 200MHz		-70		dB
t _S	0.1% Settling Time	Step = 2V		6		ns
OS	Overshoot	Step = 2V		0.1	0.6	V
PSRR	Power Supply Rejection Ratio		50			dB
ISO	Channel Isolation	Γ = 30MHz	90			dB
V _{GLITCH}	Switching Glitch			70	120	mV
I _{SDIS}	Disable Supply Current				30	nA
A _V	Voltage Gain			1		nA

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Pin Configuration Diagrams



Video