

## Features

- 2:1 Mux
- Triple channels
- $\pm 5V$  operation
- Gain of 1 (EL4342C)
- Gain of 2 (EL4346C)
- 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 #
EL4342CU	24-Pin QSOP		MDP0040
EL4346CU	24-Pin QSOP		MDP0040

## General Description

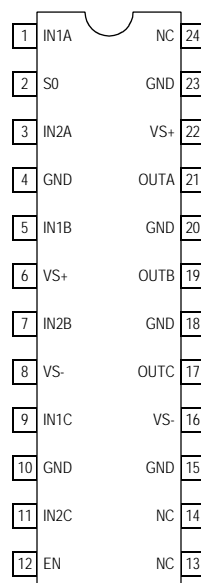
The EL4342C and EL4346C are 600MHz bandwidth multiplexing amplifiers designed primarily for input video switching. The EL4342C and EL4346C contain 2:1 multiplexers.

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 EL4342C has a gain of 1 and the EL4346C has a gain of 2.

The EL4342C and EL4346C are available in a 24-pin QSOP package and are specified for operation over the full  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range.

## Connection Diagram



**EL4342C & EL4346C**  
(24-Pin QSOP)

# EL4342C/EL4346C - Preliminary

## 600MHz Multiplexing Amplifiers

### Absolute Maximum Ratings $(T_A = 25^\circ\text{C})$

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

$V_{S-} - 0.3\text{V}$ ,  $V_{S+} + 0.3\text{V}$

Storage Temperature Range

$-65^\circ\text{C}$  to  $+150^\circ\text{C}$

Ambient Operating Temperature

$-40^\circ\text{C}$  to  $+85^\circ\text{C}$

Operating Junction Temperature

$125^\circ\text{C}$

Power Dissipation

See 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:  $T_J = T_C = T_A$ .

### Specifications

$V_S = +5\text{V}$ ,  $V_{S-} = -5\text{V}$ ,  $\text{GND} = 0\text{V}$ ,  $T_A = 25^\circ\text{C}$ , Input Video =  $1\text{V}_{\text{P-P}}$  &  $R_L = 150\Omega$  to GND, unless otherwise specified.

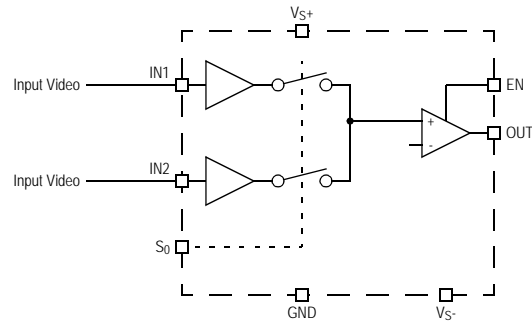
Parameter	Description	Conditions	Min	Typ	Max	Unit
General						
I <sub>S</sub>	Supply Current (per channel)	No Load, V <sub>IN</sub> = 0V		12	14	mA
BW	-3dB Bandwidth	A <sub>V</sub> = 1 (EL4342C)		600		MHz
		A <sub>V</sub> = 2 (EL4346C)		500		MHz
FBW	0.1dB Bandwidth	A <sub>V</sub> = 1 (EL4342C)		100		MHz
		A <sub>V</sub> = 2 (EL4346C)		80		MHz
SR	Slew Rate	25% to 75%, R <sub>L</sub> = 150Ω, A <sub>V</sub> = 1 (EL4342C)		1200		V/μs
		25% to 75%, R <sub>L</sub> = 150Ω, A <sub>V</sub> = 2 (EL4346C)		1400		V/μs
t <sub>SW</sub>	Switching Time	10% to 90%		2		ns
V <sub>OP</sub>	Positive Output Swing		3.3	3.5		V
V <sub>ON</sub>	Negative Output Swing		-3.2	-3.5		V
I <sub>OUT</sub>	Output Current	R <sub>L</sub> = 10Ω to GND	80	100		mA
d <sub>G</sub>	Differential Gain Error	Standard NTSC test, A <sub>V</sub> = 2, R <sub>L</sub> = 150Ω		0.07		%
d <sub>P</sub>	Differential Phase Error	Standard NTSC test, A <sub>V</sub> = 2, R <sub>L</sub> = 150Ω		0.01		°
V <sub>IN</sub>	Input Voltage (video inputs)		-2.8		2.3	V
V <sub>OS</sub>	Offset Voltage		-10		10	mV
e <sub>n</sub>	Voltage Noise			17		nV/√Hz
THD	Total Harmonic Distortion	V <sub>OUT</sub> = 2V <sub>P-P</sub> , R <sub>L</sub> = 150Ω, f = 200MHz		-70		dB
t <sub>S</sub>	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	F = 30MHz		90		dB
V <sub>GLITCH</sub>	Switching Glitch			70	120	mV
I <sub>SDIS</sub>	Disable Supply Current			20		μA
A <sub>V</sub>	Voltage Gain	EL4342C		1		
		EL4346C		2		
Control						
V <sub>H</sub>	Logic Input High Voltage		2.0			V
V <sub>L</sub>	Logic Input Low Voltage				0.8	V

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## 600MHz Multiplexing Amplifiers

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### Block Diagram



Three channels - A, B & C

### Input Selector Truth Table

Inputs		State
EN	S0	
1	0	IN1 Selected
1	1	IN2 Selected
0	X	Standby - Powered Down

***EL4342C/EL4346C - Preliminary******600MHz Multiplexing Amplifiers*****Pin Descriptions**

Pin Number	Pin Name	Pin Type	Pin Description
1	IN1A	High Frequency Signal	Input #1 for channel A
2	S0	Logic Input	Input selection
3	IN2A	High Frequency Signal	Input #2 for channel A
4	GND	Power	Ground
5	IN1B	High Frequency Signal	Input #1 for channel B
6	VS+	Power	Positive power
7	IN2B	High Frequency Signal	Input #2 for channel B
8	VS-	Power	Negative power
9	IN1C	High Frequency Signal	Input #1 for channel C
10	GND	Power	Ground
11	IN2C	High Frequency Signal	Input #2 for channel C
12	EN	Logic Input	Logic high to enable
13	NC		No connection
14	NC		No connection
15	GND	Power	Ground
16	VS-	Power	Negative power
17	OUTC	High Frequency Signal	Output from channel B
18	GND	Power	Ground
19	OUTB	High Frequency Signal	Output from channel B
20	GND	Power	Ground
21	OUTA	High Frequency Signal	Output from Channel A
22	VS+	Power	Positive power
23	GND	Power	Ground
24	NC		No connection

**EL4342C/EL4346C - Preliminary****600MHz Multiplexing Amplifiers****General Disclaimer**

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