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## EL4344C/EL4348C - Preliminary 600MHz Multiplexing Amplifiers

Absolute Maximum Ratings $\left(\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}\right)$<br>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<br>Supply Voltage ( $\mathrm{V}_{\mathrm{S}_{+}}$to $\mathrm{V}_{\mathrm{S}^{-}}$)<br>Input Voltage<br>Important Note:<br>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

$V_{S}=+5 V, V_{S^{-}}=-5 V, G N D=0 V, T_{A}=25^{\circ} C$, Input Video $=1 V_{P-P} \& R_{L}=150 \Omega$ to $G N D$, unless otherwise specified.

| Parameter | Description | Conditions | Min | Typ | Max | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| General |  |  |  |  |  |  |
| IS | Supply Current (per channel) | No load, $\mathrm{V}_{\text {IN }}=0 \mathrm{~V}$ |  | 16 | 18 | mA |
| BW | -3dB Bandwidth | $\mathrm{A}_{\mathrm{V}}=1$ (EL4344C) |  | 600 |  | MHz |
|  |  | $\mathrm{A}_{\mathrm{V}}=2(\mathrm{EL} 4348 \mathrm{C})$ |  | 500 |  | MHz |
| FBW | 0.1dB Bandwidth | $\mathrm{A}_{\mathrm{V}}=1$ (EL4344C) |  | 100 |  | MHz |
|  |  | $\mathrm{A}_{\mathrm{V}}=2(\mathrm{EL4348C})$ |  | 80 |  | MHz |
| SR | Slew Rate | $25 \%$ to $75 \%, \mathrm{R}_{\mathrm{L}}=150 \Omega, \mathrm{Av}_{\mathrm{V}}=2$ (EL4344C) |  | 1200 |  | V/ $\mu \mathrm{s}$ |
|  |  | $25 \%$ to $75 \%, \mathrm{R}_{\mathrm{L}}=150 \Omega, \mathrm{~A}_{\mathrm{V}}=2(\mathrm{EL} 4348 \mathrm{C})$ |  | 1400 |  | V/ $\mu \mathrm{s}$ |
| tsw | Switching Time | 10\% to $90 \%$ |  | 2 |  | ns |
| $\mathrm{V}_{\text {OP }}$ | Positive Output Swing |  | 3.3 | 3.5 |  | V |
| $\mathrm{V}_{\text {ON }}$ | Negative Output Swing |  | -3.2 | -3.5 |  | V |
| IOUT | Output Current | $\mathrm{R}_{\mathrm{L}}=10 \Omega$ to GND | 80 | 100 |  | mA |
| dG | Differential Gain Error | Standard NTSC test, $\mathrm{A}_{V}=2, \mathrm{R}_{\mathrm{L}}=150 \Omega$ |  | 0.07 |  | \% |
| dP | Differential Phase Error | Standard NTSC test, $\mathrm{A}_{V}=2, \mathrm{R}_{\mathrm{L}}=150 \Omega$ |  | 0.01 |  | - |
| $\mathrm{V}_{\text {IN }}$ | Input Voltage (video inputs) |  | -2.8 |  | 2.3 | V |
| $\mathrm{V}_{\text {OS }}$ | Offset Voltage |  | -10 |  | 10 | mV |
| $\mathrm{e}_{\mathrm{n}}$ | Voltage Noise |  |  | 17 |  | $\mathrm{nV} / \sqrt{ } \mathrm{Hz}$ |
| THD | Total Harmonic Distortion | $\mathrm{V}_{\text {OUT }}=2 \mathrm{~V}_{\mathrm{P}-\mathrm{P}}, \mathrm{R}_{\mathrm{L}}=150 \Omega, \mathrm{f}=200 \mathrm{MHz}$ |  | -70 |  | dB |
| $\mathrm{t}_{\mathrm{S}}$ | 0.1\% Settling Time | Step $=2 \mathrm{~V}$ |  | 6 |  | ns |
| OS | Overshoot | Step $=2 \mathrm{~V}$ |  | 0.1 | 0.6 | V |
| PSRR | Power Supply Rejection Ratio |  | 50 |  |  | dB |
| ISO | Channel Isolation | $\mathrm{F}=30 \mathrm{MHz}$ |  | 90 |  | dB |
| $\mathrm{V}_{\text {GLITCH }}$ | Switching Glitch |  |  | 70 | 120 | mV |
| ISDIS | Disable Supply Current |  |  | 20 |  | $\mu \mathrm{A}$ |
| Av | Voltage Gain | EL4344C |  | 1 |  |  |
|  |  | EL4348C |  | 2 |  |  |
| Control |  |  |  |  |  |  |
| $\mathrm{V}_{\mathrm{H}}$ | Logic Input High Voltage |  | 2.0 |  |  | V |
| $\mathrm{V}_{\mathrm{L}}$ | Logic Input Low Voltage |  |  |  | 0.8 | V |



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| :---: | :---: | :---: | :---: |
| Pin Descriptions |  |  |  |
| Pin Number | Pin Name | Pin Type | Pin Description |
| 1 | S0 | Logic Input | LSB for input selection |
| 2 | IN4A | High Frequency Signal | Input \#4 for channel A |
| 3 | S1 | Logic Input | MSB for input selection |
| 4 | IN1B | High Frequency Signal | Input \#1 for channel B |
| 5 | GND | Power | Ground |
| 6 | IN2B | High Frequency Signal | Input \#2 for channel B |
| 7 | VS+ | Power | Positive power |
| 8 | IN3B | High Frequency Signal | Input \#3 for channel B |
| 9 | VS- | Power | Negative power |
| 10 | IN4B | High Frequency Signal | Input \#4 for channel B |
| 11 | GND | Power | Ground |
| 12 | IN1C | High Frequency Signal | Input \#1 for channel C |
| 13 | EN | Logic Input | Logic high to enable |
| 14 | IN2C | High Frequency Signal | Input \#2 for channel C |
| 15 | GND | Power | Ground |
| 16 | IN3C | High Frequency Signal | Input \#3 for channel C |
| 17 | GND | Power | Ground |
| 18 | IN4C | High Frequency Signal | Input \#4 for channel C |
| 19 | VS- | Power | Negative power |
| 20 | OUTC | High Frequency Signal | Output for channel C |
| 21 | OUTB | High Frequency Signal | Output for channel B |
| 22 | OUTA | High Frequency Signal | Output for channel A |
| 23 | VS+ | Power | Positive power |
| 24 | IN1A | High Frequency Signal | Input \#1 for channel A |
| 25 | GND | Power | Ground |
| 26 | IN2A | High Frequency Signal | Input \#2 for channel A |
| 27 | GND | Power | Ground |
| 28 | IN3A | High Frequency Signal | Input \#3 for channel A |

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