

Features

- Logic AND/NAND input
- 3V and 5V Input compatible
- Clocking speeds up to 20 MHz
- 20 ns Switching/delay time
- 2A Peak drive
- Isolated drains
- Low output impedance
- Low quiescent current
- Wide operating voltage—4.5V–16V

Applications

- CCD Drivers
- Short circuit protected switching
- Under-voltage shut-down circuits
- Switch-mode power supplies
- Motor controls
- Power MOSFET switching
- Switching capacitive loads
- Shoot-thru protection
- Latching drivers

Ordering Information

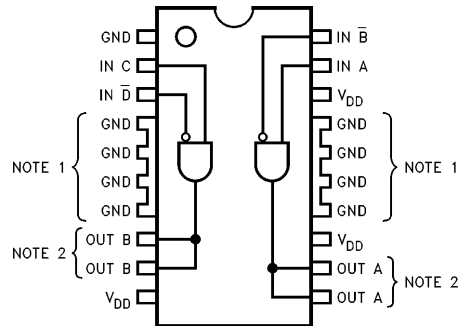
| Part No. | Temp. Range | Pkg. | Outline # |
|----------|----------------|---------------------|-----------|
| EL7243CM | -40°C to +85°C | 20-Lead Thermal SOL | MDP0027* |

General Description

The EL7243C dual input, 2-channel driver achieves the same excellent switching performance of the EL7212 family while providing added flexibility. The power package makes this part extremely well suited for high frequency and heavy loads as in CCD applications. The 2-input logic and configuration is applicable to numerous power MOSFET drive circuits. As with other Elantec drivers, the EL7243C is excellent for driving large capacitive loads with minimal delay and switching times. "Shoot-thru" protection and latching circuits can be implemented by simply "cross-coupling" the 2-channels.

Connection Diagram

20-Lead Thermal SOL Package
EL7243C



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Note 1: Pins 4–7 and 14–17 are electrically connected.
Note 2: Output pins must be tied together.

Manufactured under U.S. Patent Nos. 5,334,883, # 5,341,047

Note: All information contained in this data sheet has been carefully checked and is believed to be accurate as of the date of publication; however, this data sheet cannot be a "controlled document". Current revisions, if any, to these specifications are maintained at the factory and are available upon your request. We recommend checking the revision level before finalization of your design documentation.

EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

Absolute Maximum Ratings

| | | | |
|-------------------------------|-------------------------|--------------------------------|---------|
| Supply (V+ to Gnd) | 16.5V | Operating Junction Temperature | 125°C |
| Input Pins | -0.3V to +0.3V above V+ | Power Dissipation | |
| Combined Peak Output Current | 4A | 20-pin "Batwing" SOIC | 1500 mW |
| Storage Temperature Range | -65°C to +150°C | | |
| Ambient Operating Temperature | -40°C to +85°C | | |

Important Note:

All parameters having Min/Max specifications are guaranteed. The Test Level column indicates the specific device testing actually performed during production and Quality inspection. Elantec performs most electrical tests using modern high-speed automatic test equipment, specifically the LTX77 Series system. Unless otherwise noted, all tests are pulsed tests, therefore $T_J = T_C = T_A$.

| Test Level | Test Procedure |
|------------|---|
| I | 100% production tested and QA sample tested per QA test plan QCX0002. |
| II | 100% production tested at $T_A = 25^\circ\text{C}$ and QA sample tested at $T_A = 25^\circ\text{C}$, T_{MAX} and T_{MIN} per QA test plan QCX0002. |
| III | QA sample tested per QA test plan QCX0002. |
| IV | Parameter is guaranteed (but not tested) by Design and Characterization Data. |
| V | Parameter is typical value at $T_A = 25^\circ\text{C}$ for information purposes only. |

DC Electrical Characteristics $T_A = 25^\circ\text{C}$, $V_{DD} = 15\text{V}$ unless otherwise specified

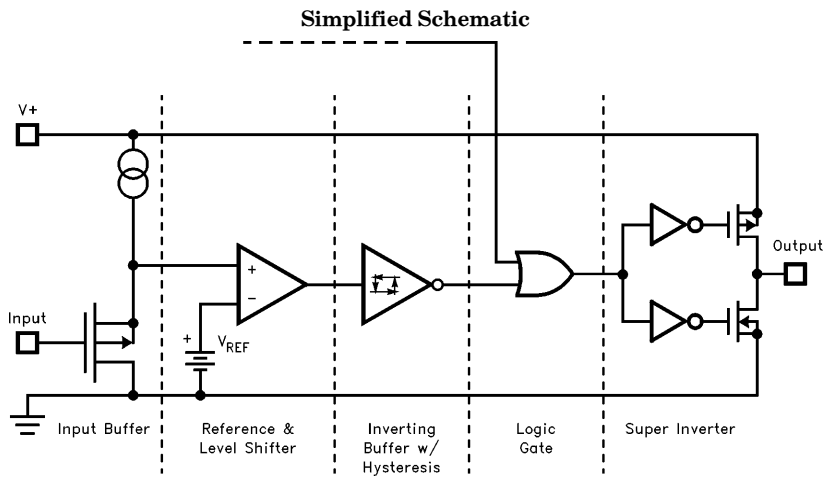
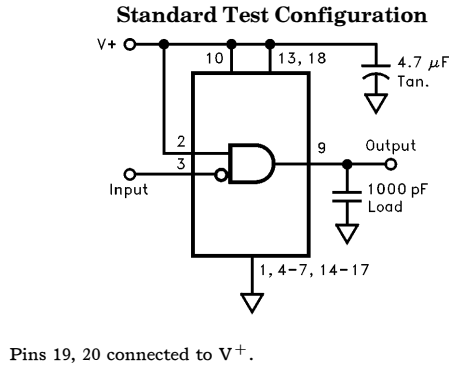
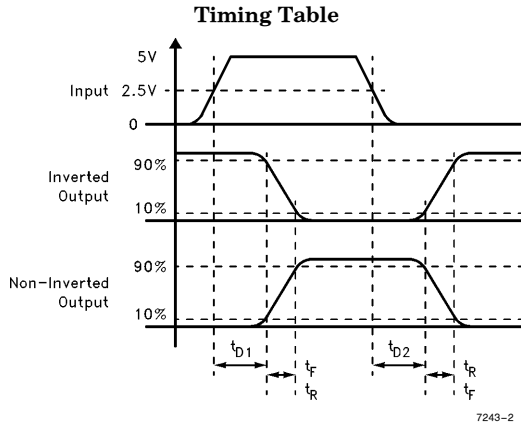
| Parameter | Description | Test Conditions | Min | Typ | Max | Test Level | Units |
|---------------------|---------------------------|----------------------------|-----|--------|-----|------------|---------------|
| Input | | | | | | | |
| V_{IH} | Logic "1" Input Voltage | | 2.4 | | | I | V |
| I_{IH} | Logic "1" Input Current | @ V_{DD} | | 0.1 | 10 | I | μA |
| V_{IL} | Logic "0" Input Voltage | | | | 0.8 | I | V |
| I_{IL} | Logic "0" Input Current | @0V | | 0.1 | 10 | I | μA |
| V_{HVS} | Input Hysteresis | | | 0.3 | | V | V |
| Output | | | | | | | |
| R_{OH} | Pull-Up Resistance | $I_{OUT} = -100\text{ mA}$ | | 3 | 6 | I | Ω |
| R_{OL} | Pull-Down Resistance | $I_{OUT} = +100\text{ mA}$ | | 4 | 6 | I | Ω |
| I_{PK} | Peak Output Current | Source Sink | | 2 2 | | IV | A |
| I_{DC} | Continuous Output Current | Source/Sink | 200 | | | I | mA |
| Power Supply | | | | | | | |
| I_S | Power Supply Current | Inputs High | | 1 | 2.5 | I | mA |
| V_S | Operating Voltage | | 4.5 | | 16 | I | V |

EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

AC Electrical Characteristics $T_A = 25^\circ\text{C}$, $V = 15\text{V}$ unless otherwise specified

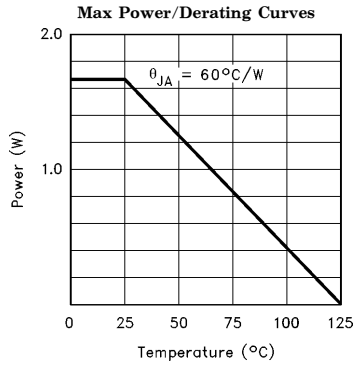
| Parameter | Description | Test Conditions | Min | Typ | Max | Test Level | Units |
|----------------------------------|---------------------|---|-----|-----|----------|------------|-------|
| Switching Characteristics | | | | | | | |
| t_R | Rise Time | $C_L = 500\text{ pF}$ $C_L = 1000\text{ pF}$ | | | 10 20 | IV | ns |
| t_F | Fall Time | $C_L = 500\text{ pF}$ $C_L = 1000\text{ pF}$ | | | 10 20 | IV | ns |
| t_{D-ON} | Turn-On Delay Time | | | 20 | 25 | IV | ns |
| t_{D-OFF} | Turn-Off Delay Time | | | 20 | 25 | IV | ns |



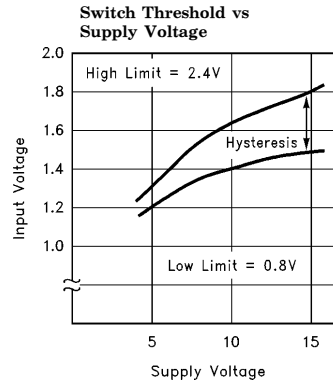
EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

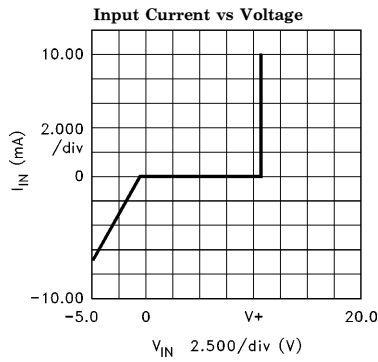
Typical Performance Curves



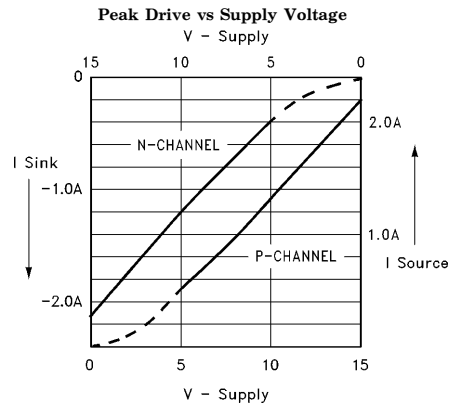
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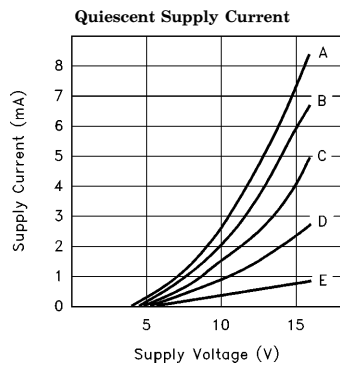
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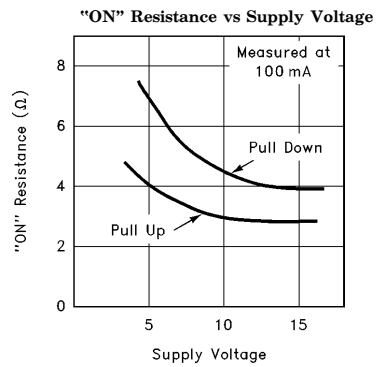


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CASE:

| | |
|---|----------------|
| A | ALL INPUTS GND |
| B | 3 INPUTS GND |
| C | 2 INPUTS GND |
| D | 1 INPUT GND |
| E | ALL INPUTS V+ |



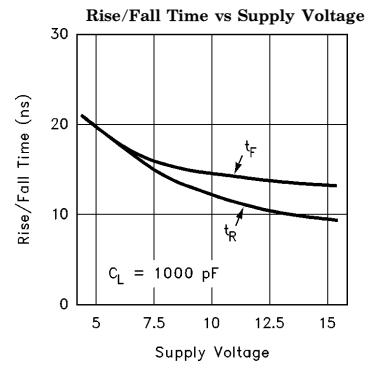
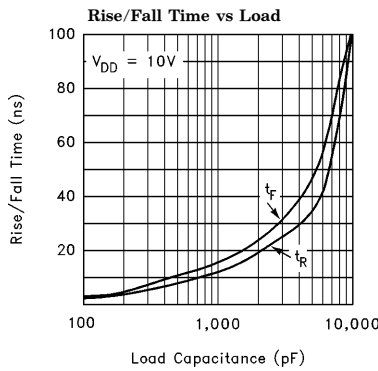
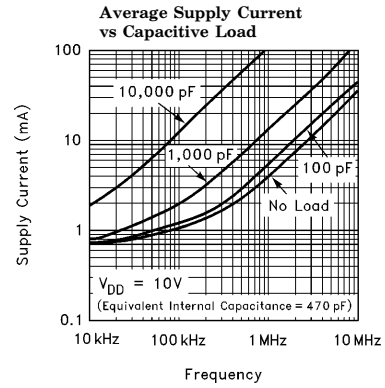
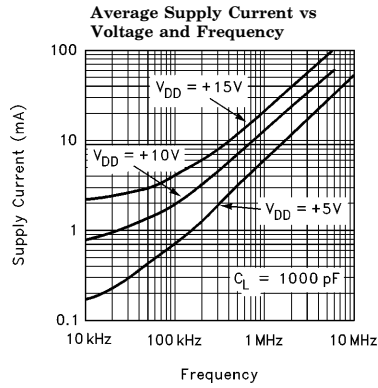
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EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

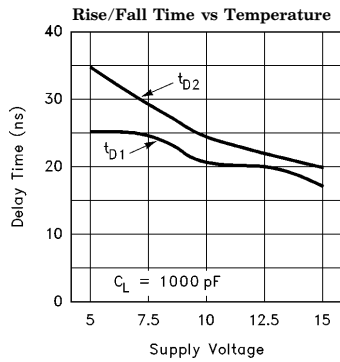
Typical Performance Curves — Contd.



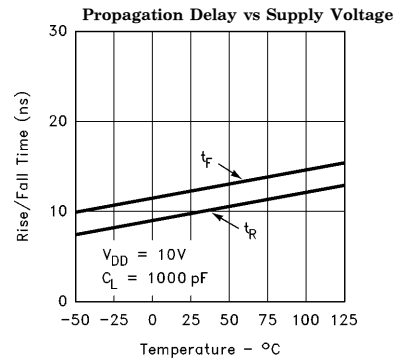
EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

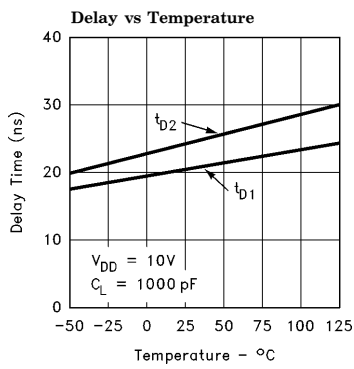
Typical Performance Curves — Contd.



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7243-16



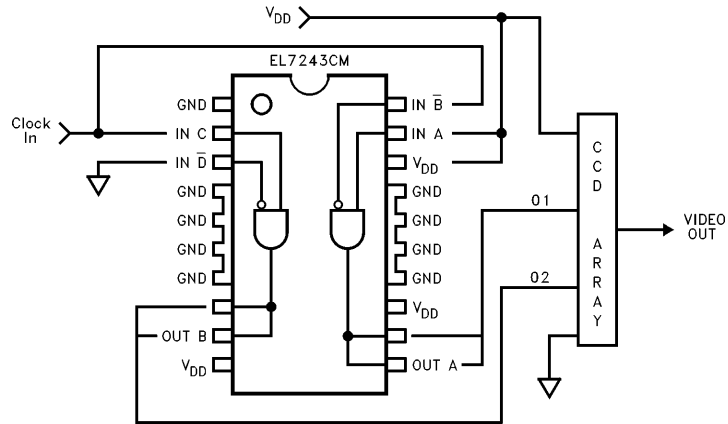
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EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

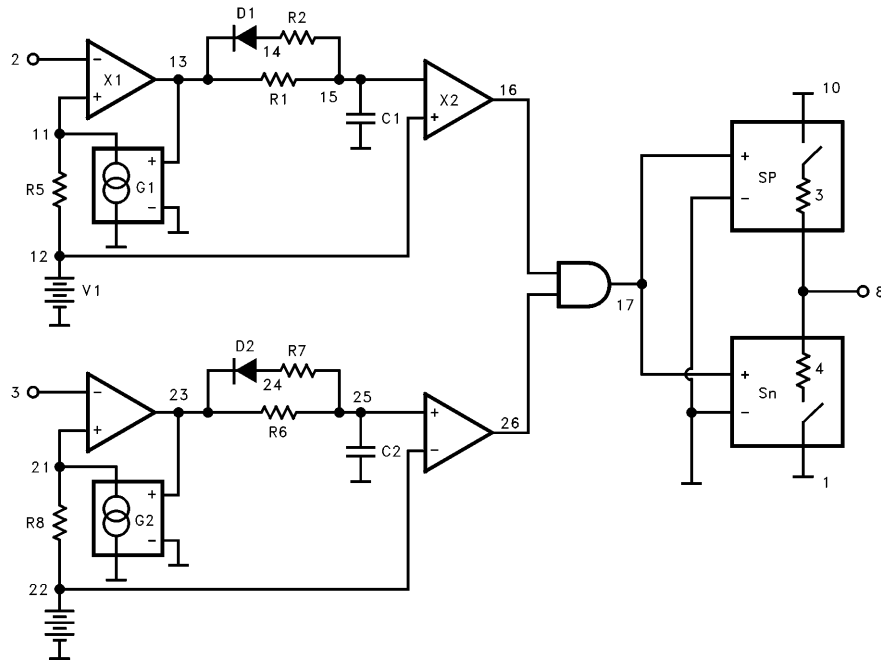
Applications Information

Typical CCD Configuration



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EL7243 Macromodel



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EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

General Disclaimer

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