élantec
HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS

# EL7182C
## 2-Phase, High Speed CCD Driver

## Features
- 3V and 5V Input compatible
- Clocking speeds up to 10 MHz
- Reduced clock skew
- 20 ns Switching/delay time
- 2A Peak drive
- Low quiescent current
- Wide operating voltage—4.5V–16V

## Applications
- CCD Drivers requiring high-contrast imaging
- Differential line drivers
- Push-pull circuits

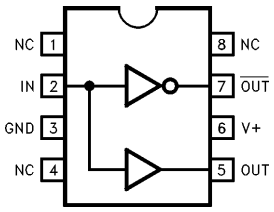
## Ordering Information

| Part No. | Temp. Range | Pkg. | Outline # |
|---|---|---|---|
| EL7182CN | −40°C to +85°C | 8-Pin P-DIP | MDP0031 |
| EL7182CS | −40°C to +85°C | 8-Pin SO | MDP0027 |

## General Description
The EL7182C is extremely well suited for driving CCD's, especially where high contrast imaging is desirable. The 16V supply rating is attractive for higher voltage CCD applications, as in color fax machines. The input is TTL and 3V compatible. The low quiescent current requirement is advantageous in portable/battery powered systems. The EL7182 is available in 8-pin P-DIP and 8-lead SO packages.

## Connection Diagram

**EL7182C**




7182–1

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

## 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 | SOIC | 570 mW |
| Storage Temperature Range | −65°C to +150°C | PDIP | 1050 mW |
| 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°C and QA sample tested at $T_A$ = 25°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°C for information purposes only. |

## DC Electrical Characteristics $T_A$ = 25°C, V = 15V unless otherwise specified

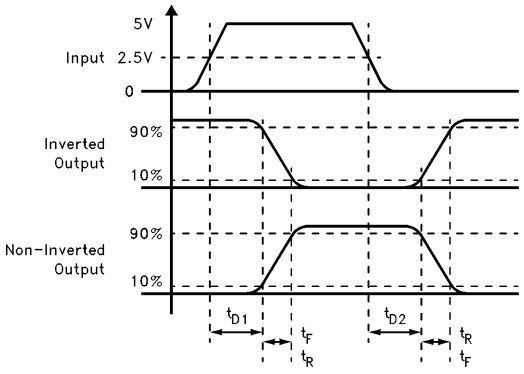
| Parameter | Description | Test Conditions | Min | Typ | Max | Test Level | Units |
|---|---|---|---|---|---|---|---|
| **Input** | | | | | | | |
| $V_{IH}$ | Logic "1" Input Voltage | | 2.4 | | | I | V |
| $I_{IH}$ | Logic "1" Input Current | @V+ | | 0.1 | 10 | I | µA |
| $V_{IL}$ | Logic "0" Input 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 mA | | 3 | 6 | I | Ω |
| $R_{OL}$ | Pull-Down Resistance | $I_{OUT}$ = +100 mA | | 4 | 6 | I | Ω |
| $I_{PK}$ | Peak Output Current | Source<br>Sink | | 2<br>2 | | IV | A |
| $I_{DC}$ | Continuous Output Current | Source/Sink | 100 | | | I | mA |
| **Power Supply** | | | | | | | |
| $I_S$ | Power Supply Current | Input High | | 2.5 | 5 | I | mA |
| $V_S$ | Operating Voltage | | 4.5 | | 16 | I | V |

TD is 3.1in

## AC Electrical Characteristics $T_A$ = 25°C, V = 15V unless otherwise specified

| Parameter | Description | Test Conditions | Min | Typ | Max | Test Level | Units |
|---|---|---|---|---|---|---|---|
| **Switching Characteristics** | | | | | | | |
| $t_R$ | Rise Time | $C_L$ = 500 pF<br>$C_L$ = 1000 pF | | 7.5<br>10 | <br>20 | IV | ns |
| $t_F$ | Fall Time | $C_L$ = 500 pF<br>$C_L$ = 1000 pF | | 10<br>13 | <br>20 | IV | ns |
| $t_{D-ON}$ | Turn-On Delay Time | | | 18 | 25 | IV | ns |
| $t_{D-OFF}$ | Turn-Off Delay Time | | | 20 | 25 | IV | ns |

### Timing Table

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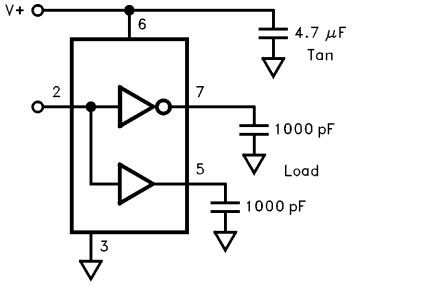
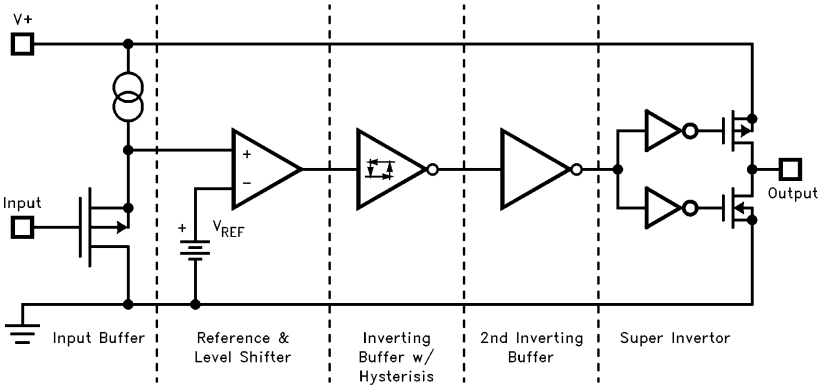
### Standard Test Configuration




7182-3

### Simplified Schematic

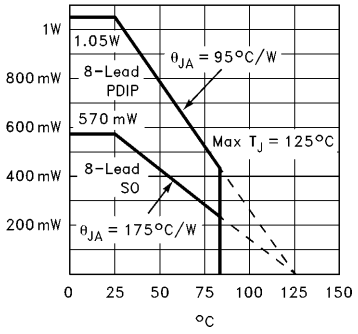



7182-17

TD is 1.5in

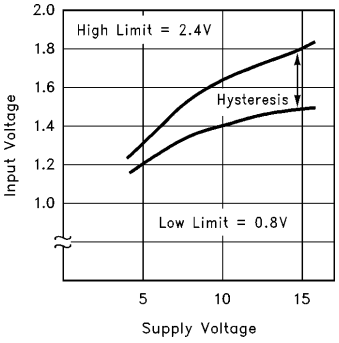
## Typical Performance Curve

**Max Power/Derating Curves**



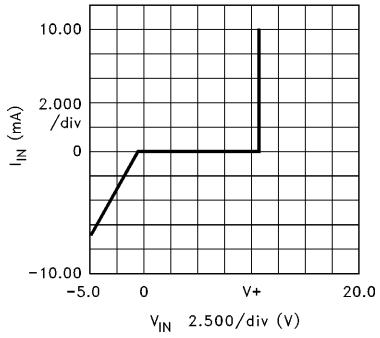

7182-15

**Switch Threshold vs Supply Voltage**



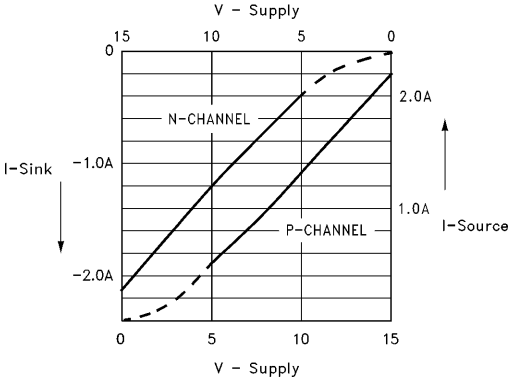

7182-4

**Input Current vs Voltage**



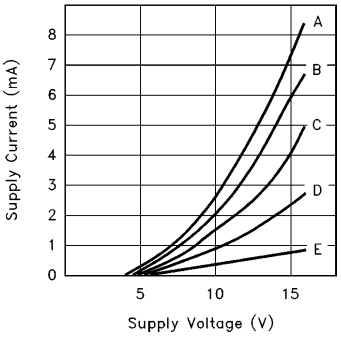

7182-5

**Peak Drive vs Supply Voltage**




7182-6

**Quiescent Supply Current**

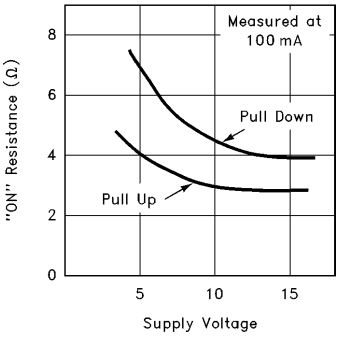



**CASE:**

| Input Level | Curve |
|---|---|
| GND | B |
| V+ | D |

7182-7

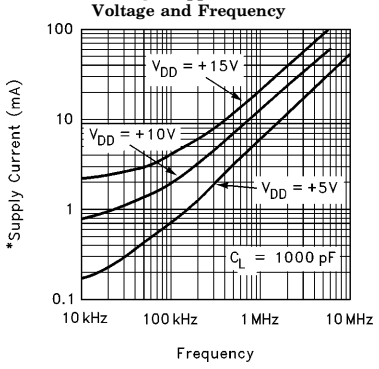
**"ON" Resistance vs Supply Voltage**




7182-16

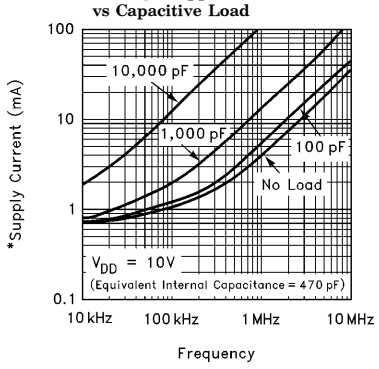
## Typical Performance Curve — Contd.

**Average Supply Current vs Voltage and Frequency**



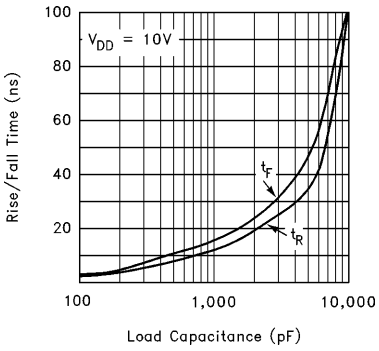

7182–8

**Average Supply Current vs Capacitive Load**



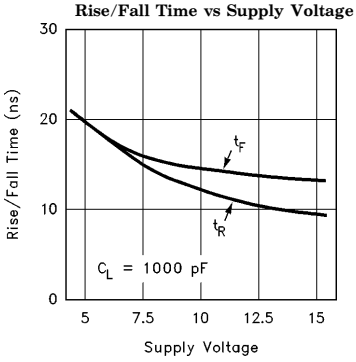

7182–9

**Rise/Fall Time vs Load**




7182–14

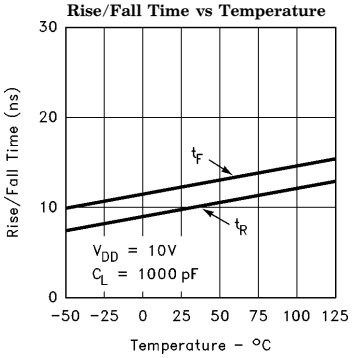
**Rise/Fall Time vs Supply Voltage**




7182–10

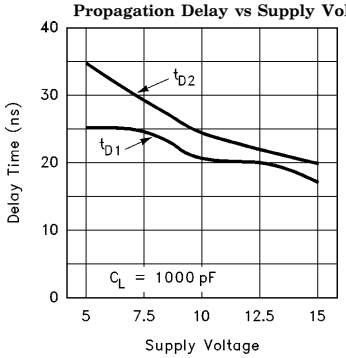
## Typical Performance Curve — Contd.

**Rise/Fall Time vs Temperature**



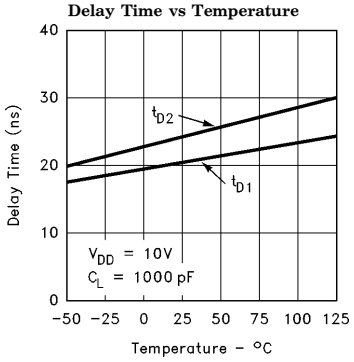

7182−12

**Propagation Delay vs Supply Voltage**




7182−11

**Delay Time vs Temperature**




7182−13

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**General Disclaimer**

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