

EL7182

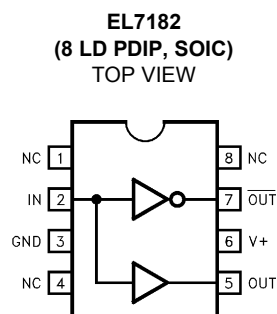
2-Phase, High Speed CCD Driver

NOT RECOMMENDED FOR NEW DESIGNS
NO RECOMMENDED REPLACEMENT
 contact our Technical Support Center at
 1-888-INTERSIL or www.intersil.com/tsc

FN7281
 Rev 1.00
 June 15, 2006

The EL7182 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 Ld PDIP and 8 Ld SOIC packages.

Pinout



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

Features

- 3V and 5V Input compatible
- Clocking speeds up to 10MHz
- Reduced clock skew
- 20ns Switching/delay time
- 2A Peak drive
- Low quiescent current
- Wide operating voltage: 4.5V–16V
- Pb-free plus anneal available (RoHS compliant)

Applications

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

Ordering Information

PART NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
EL7182CN	EL7182CN	-40 to +85	8 Ld PDIP	MDP0031
EL7182CS	7182CS	-40 to +85	8 Ld SOIC	MDP0027
EL7182CSZ (Note)	7182CSZ	-40 to +85	8 Ld SOIC (Pb-free)	MDP0027
EL7182CSZ-T7 (Note)	7182CSZ	8 Ld SOIC (7" Tape and Reel) (Pb-free)		
EL7182CSZ-T13 (Note)	7182CSZ	8 Ld SOIC (7" Tape and Reel) (Pb-free)		

NOTE: Intersil Pb-free plus anneal products employ special Pb-free material sets; molding compounds/die attach materials and 100% matte tin plate termination finish, which are RoHS compliant and compatible with both SnPb and Pb-free soldering operations. Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020.

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

Supply (V_+ to Gnd) 16.5V
 Input Pins -0.3V to +0.3V above V_+
 Combined Peak Output Current 4A
 Storage Temperature Range -65°C to $+150^\circ\text{C}$
 Ambient Operating Temperature -40°C to $+85^\circ\text{C}$

Operating Junction Temperature 125°C
 Power Dissipation
 SOIC 570mW
 PDIP 1050mW

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

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

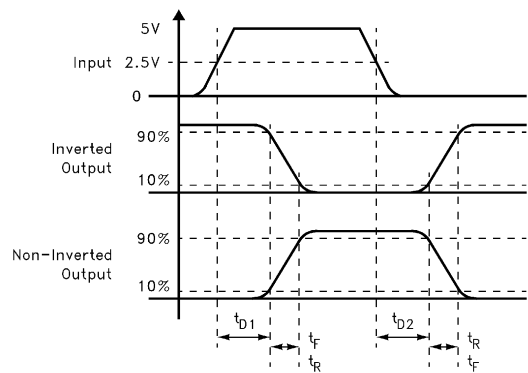
Electrical Specifications $T_A = 25^\circ\text{C}$, $V = 15\text{V}$ unless otherwise specified

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_{IH}	Logic "1" Input Voltage		2.4			V
I_{IH}	Logic "1" Input Current	@ V_+		0.1	10	μA
V_{IL}	Logic "0" Input Voltage				0.8	V
I_{IL}	Logic "0" Input Current	@0V		0.1	10	μA
V_{HVS}	Input Hysteresis			0.3		V
OUTPUT						
R_{OH}	Pull-Up Resistance	$I_{OUT} = -100\text{mA}$		3	6	Ω
R_{OL}	Pull-Down Resistance	$I_{OUT} = +100\text{mA}$		4	6	Ω
I_{PK}	Peak Output Current	Source		2		A
		Sink		2		A
I_{DC}	Continuous Output Current	Source/Sink	100			mA
POWER SUPPLY						
I_S	Power Supply Current	Input High		2.5	5	mA
V_S	Operating Voltage		4.5		16	V

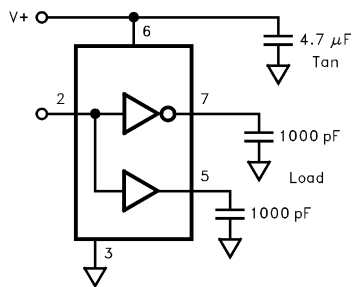
AC Electrical Specifications $T_A = 25^\circ\text{C}$, $V = 15\text{V}$ unless otherwise specified

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
SWITCHING CHARACTERISTICS						
t_R	Rise Time	$C_L = 500\text{pF}$		7.5		ns
		$C_L = 1000\text{pF}$		10	20	ns
t_F	Fall Time	$C_L = 500\text{pF}$		10		ns
		$C_L = 1000\text{pF}$		13	20	ns
t_{D-ON}	Turn-On Delay Time			18	25	ns
t_{D-OFF}	Turn-Off Delay Time			20	25	ns

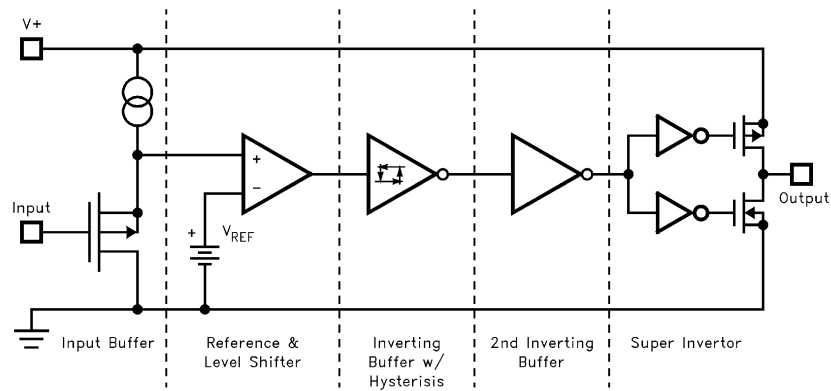
Timing Table



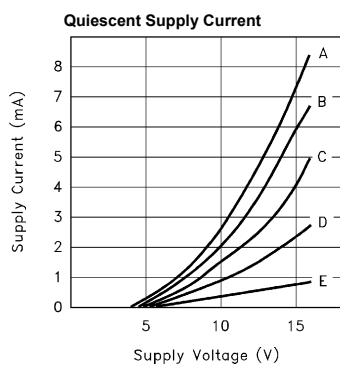
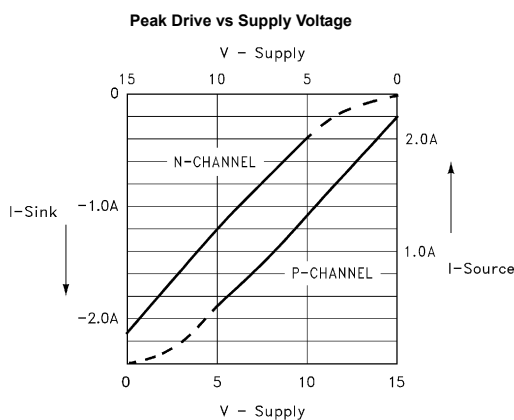
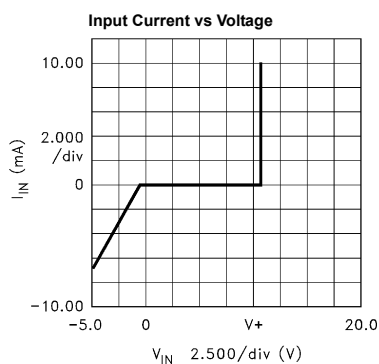
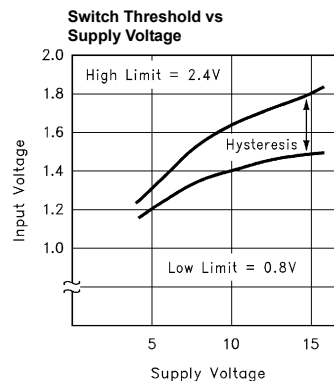
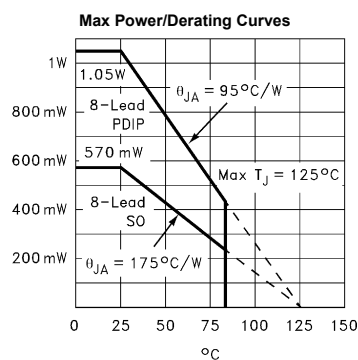
Standard Test Configuration



Simplified Schematic

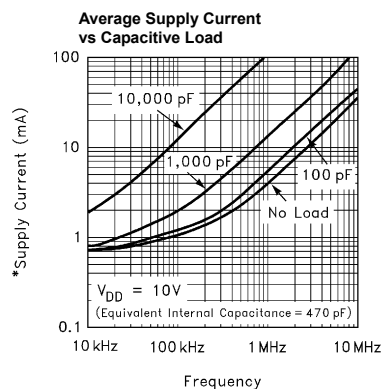
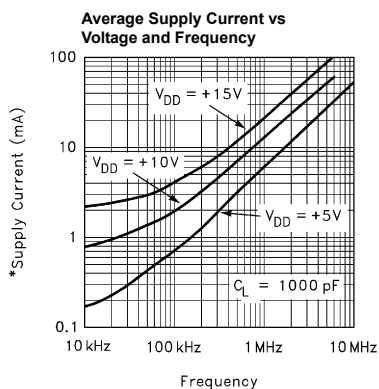
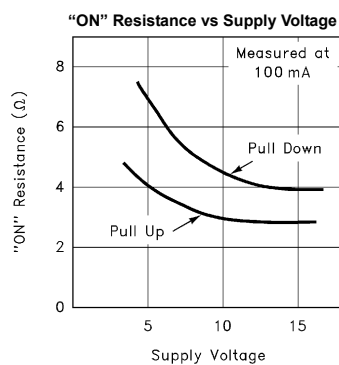


Typical Performance Curves

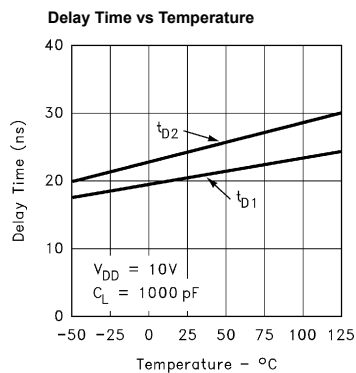
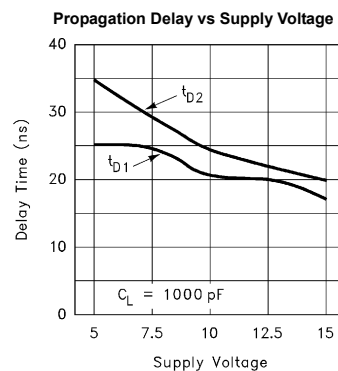
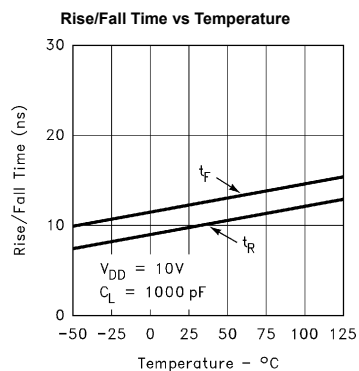
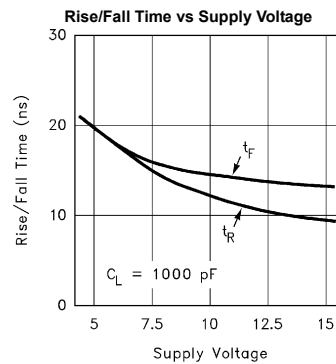
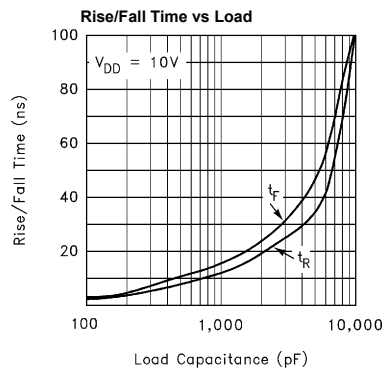


CASE:

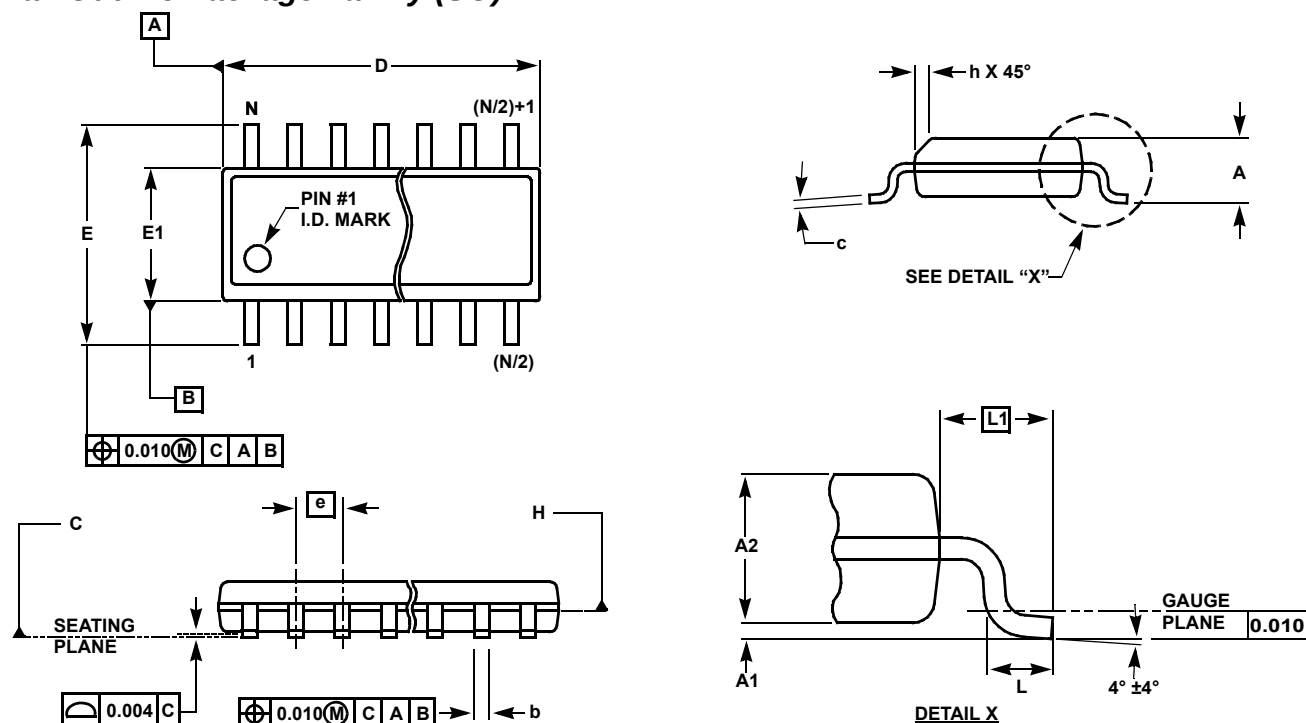
Input Level	Curve
GND	B
V+	D



Typical Performance Curves (Continued)



Small Outline Package Family (SO)



MDP0027

SMALL OUTLINE PACKAGE FAMILY (SO)

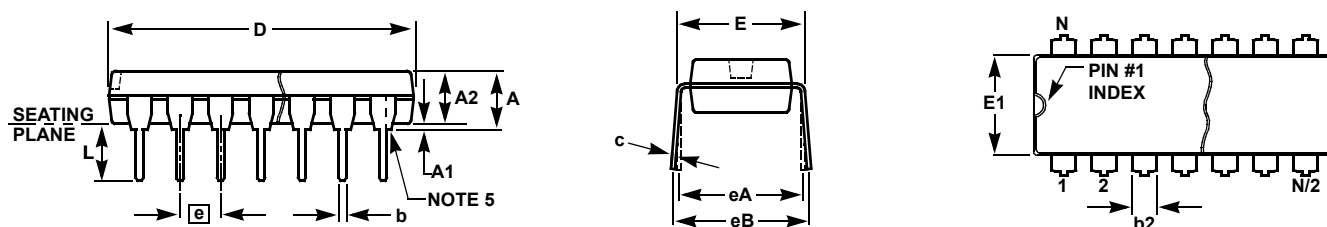
SYMBOL	SO-8	SO-14	SO16 (0.150")	SO16 (0.300") (SOL-16)	SO20 (SOL-20)	SO24 (SOL-24)	SO28 (SOL-28)	TOLERANCE	NOTES
A	0.068	0.068	0.068	0.104	0.104	0.104	0.104	MAX	-
A1	0.006	0.006	0.006	0.007	0.007	0.007	0.007	±0.003	-
A2	0.057	0.057	0.057	0.092	0.092	0.092	0.092	±0.002	-
b	0.017	0.017	0.017	0.017	0.017	0.017	0.017	±0.003	-
c	0.009	0.009	0.009	0.011	0.011	0.011	0.011	±0.001	-
D	0.193	0.341	0.390	0.406	0.504	0.606	0.704	±0.004	1, 3
E	0.236	0.236	0.236	0.406	0.406	0.406	0.406	±0.008	-
E1	0.154	0.154	0.154	0.295	0.295	0.295	0.295	±0.004	2, 3
e	0.050	0.050	0.050	0.050	0.050	0.050	0.050	Basic	-
L	0.025	0.025	0.025	0.030	0.030	0.030	0.030	±0.009	-
L1	0.041	0.041	0.041	0.056	0.056	0.056	0.056	Basic	-
h	0.013	0.013	0.013	0.020	0.020	0.020	0.020	Reference	-
N	8	14	16	16	20	24	28	Reference	-

Rev. L 2/01

NOTES:

1. Plastic or metal protrusions of 0.006" maximum per side are not included.
2. Plastic interlead protrusions of 0.010" maximum per side are not included.
3. Dimensions "D" and "E1" are measured at Datum Plane "H".
4. Dimensioning and tolerancing per ASME Y14.5M-1994

Plastic Dual-In-Line Packages (PDIP)



MDP0031

PLASTIC DUAL-IN-LINE PACKAGE

SYMBOL	PDIP8	PDIP14	PDIP16	PDIP18	PDIP20	TOLERANCE	NOTES
A	0.210	0.210	0.210	0.210	0.210	MAX	
A1	0.015	0.015	0.015	0.015	0.015	MIN	
A2	0.130	0.130	0.130	0.130	0.130	± 0.005	
b	0.018	0.018	0.018	0.018	0.018	± 0.002	
b2	0.060	0.060	0.060	0.060	0.060	$+0.010/-0.015$	
c	0.010	0.010	0.010	0.010	0.010	$+0.004/-0.002$	
D	0.375	0.750	0.750	0.890	1.020	± 0.010	1
E	0.310	0.310	0.310	0.310	0.310	$+0.015/-0.010$	
E1	0.250	0.250	0.250	0.250	0.250	± 0.005	2
e	0.100	0.100	0.100	0.100	0.100	Basic	
eA	0.300	0.300	0.300	0.300	0.300	Basic	
eB	0.345	0.345	0.345	0.345	0.345	± 0.025	
L	0.125	0.125	0.125	0.125	0.125	± 0.010	
N	8	14	16	18	20	Reference	

Rev. B 2/99

NOTES:

1. Plastic or metal protrusions of 0.010" maximum per side are not included.
2. Plastic interlead protrusions of 0.010" maximum per side are not included.
3. Dimensions E and eA are measured with the leads constrained perpendicular to the seating plane.
4. Dimension eB is measured with the lead tips unconstrained.
5. 8 and 16 lead packages have half end-leads as shown.

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