

Features

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

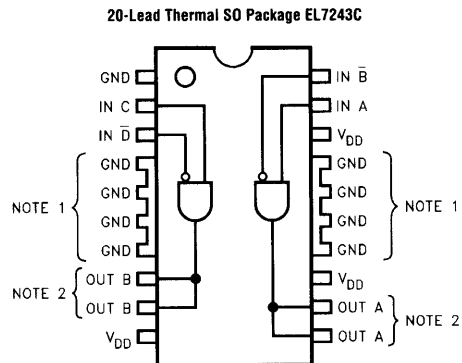
Ordering Information

Part No.	Package	Tape & Reel	Outline #
EL7243CM	SO-20	-	MDP0027*
EL7243CM-T13	SO-20	13 in	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 MOS-FET 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 Diagrams



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

Dual Input, High Speed, Dual Channel CCD Driver**Absolute Maximum Ratings** ($T_A = 25^\circ\text{C}$)

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

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: $T_J = T_C = T_A$

DC Electrical Characteristics

$T_A = 25^\circ\text{C}$, $V_{DD} = 15\text{V}$ 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_{DD}	0.1	10	μA
	V_{IL}	Logic "0" Input Voltage			0.8	V
	I_{IL}	Logic "0" Input Current	@0V		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 Sink	2 2		A
	I_{DC}	Continuous Output Current	Source/Sink	200		mA
Power Supply	I_S	Power Supply Current	Inputs High	1	2.5	mA
	V_S	Operating Voltage		4.5	16	V

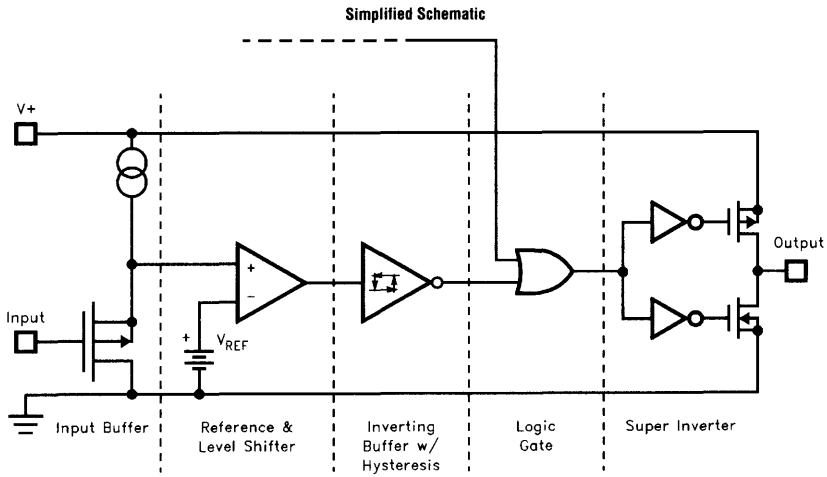
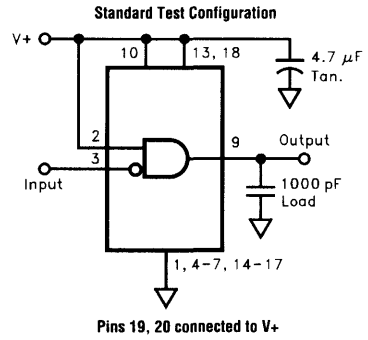
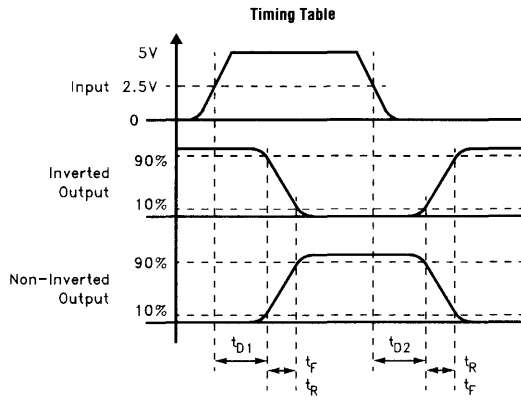
AC Electrical Characteristics

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

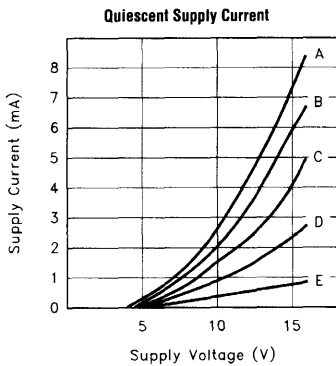
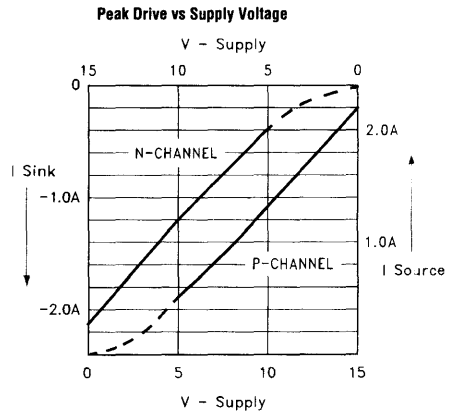
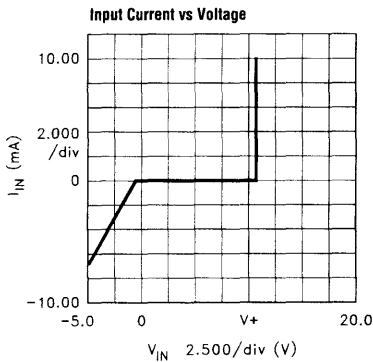
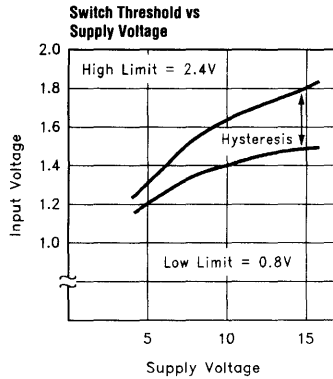
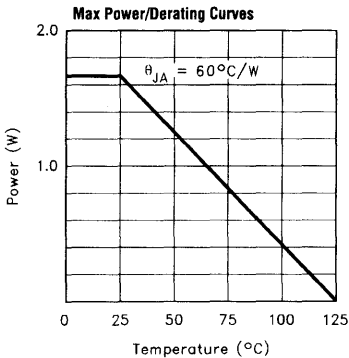
Parameter	Description	Test Conditions	Min	Typ	Max	Units
Switching Characteristics	t_R	Rise Time	$C_L = 500\text{pF}$ $C_L = 1000\text{pF}$		10 20	ns
		Fall Time	$C_L = 500\text{pF}$ $C_L = 1000\text{pF}$		10 20	ns
	t_{D-ON}	Turn-On Delay Time		20	25	ns
	t_{D-OFF}	Turn-Off Delay Time		20	25	ns

EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

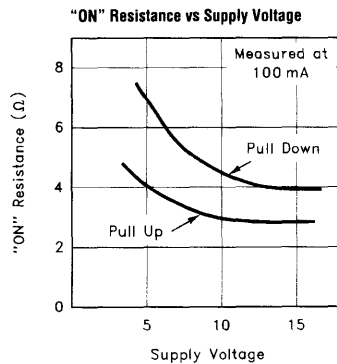


Typical Performance Curves



CASE:

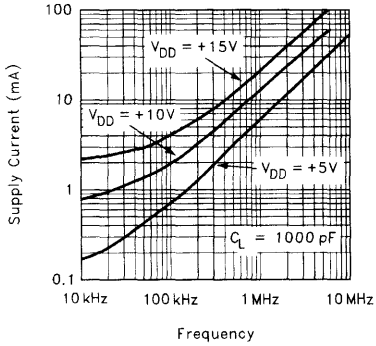
A	ALL INPUTS GND
B	3 INPUTS GND
C	2 INPUTS GND
D	1 INPUT GND
E	ALL INPUTS V+



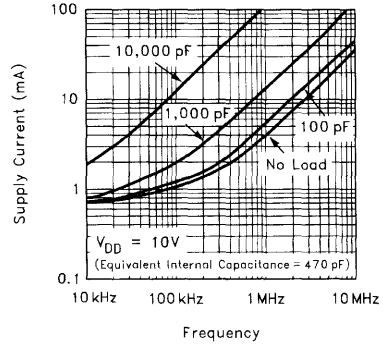
EL7243C

Dual Input, High Speed, Dual Channel CCD Driver

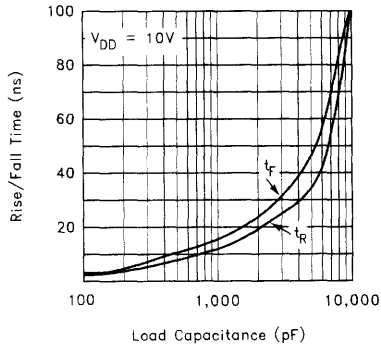
Average Supply Current vs Voltage and Frequency



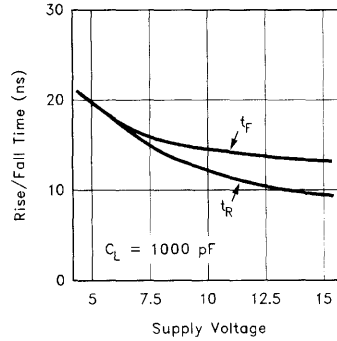
Average Supply Current vs Capacitive Load

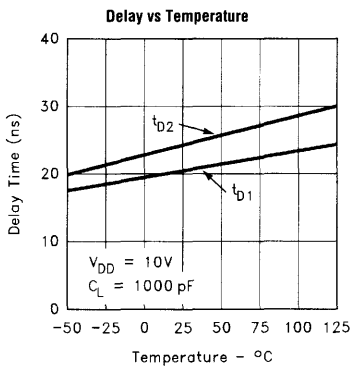
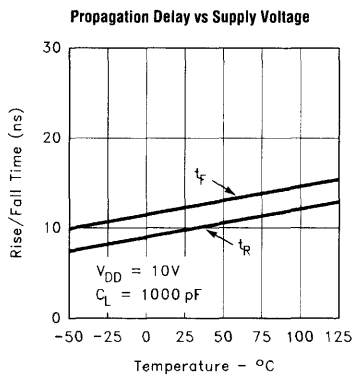
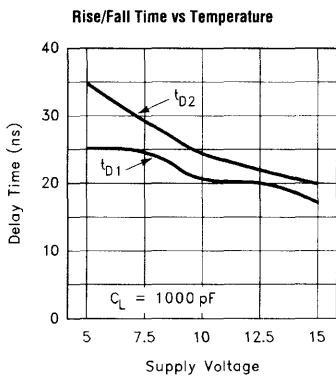


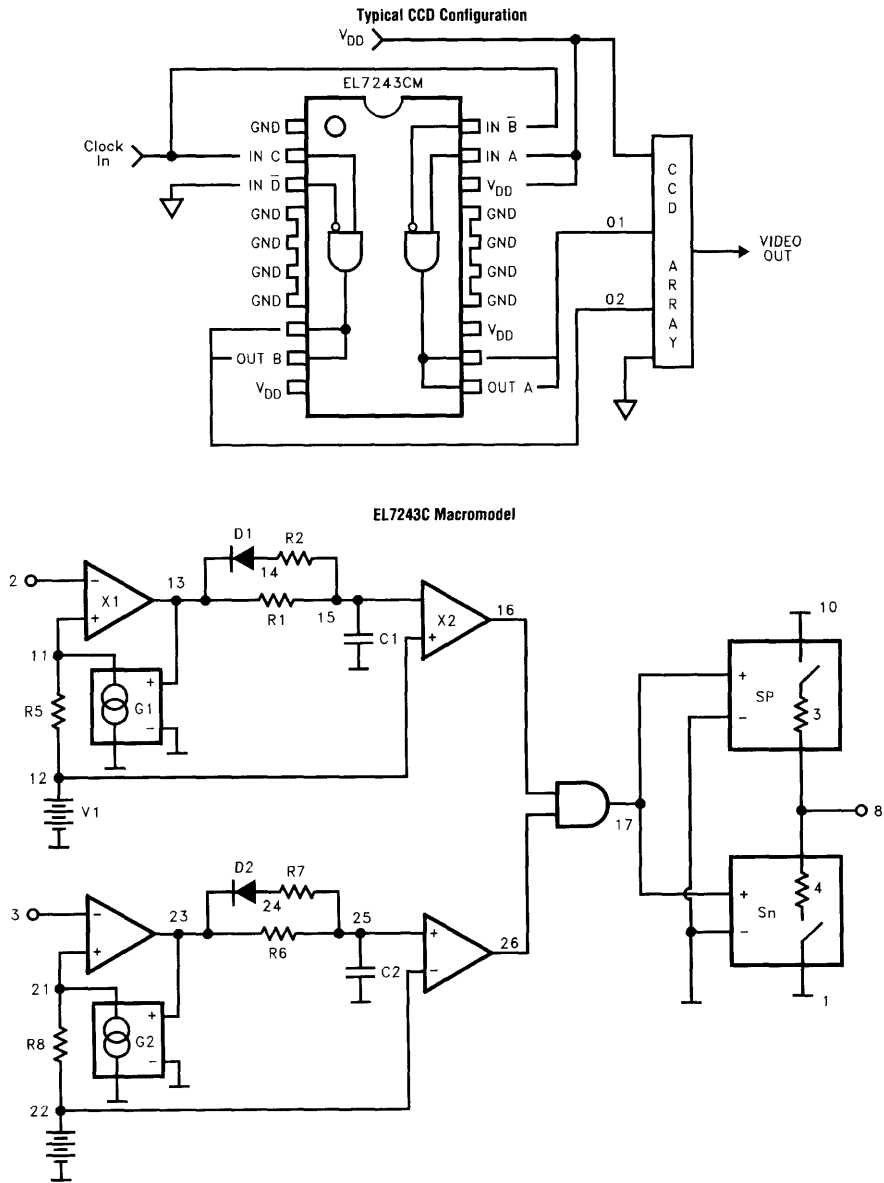
Rise/Fall Time vs Load



Rise/Fall Time vs Supply Voltage





EL7243C**Dual Input, High Speed, Dual Channel CCD Driver****Applications Information**

EL7243C Macromodel

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* EL7243C Macromodel
* Revision A, January 1996
* Connections          Gnd
*
*                    |
*                    |           Inp+
*                    |           |
*                    |           |           Inp-
*                    |           |           |
*                    |           |           |           out
*                    |           |           |           |
*                    |           |           |           |           Vcc
*                    |           |           |           |           10
*.subckt M7243          1           2           3           8           10
V1 12 1 1.6
R1 13 15 1k
R2 14 15 5k
R5 11 12 100
C1 15 1 43.3pF
D1 14 13 dmod
X1 13 11 2 1 compl
X2 16 12 15 1 compl
V2 22 1 1.6
R6 23 25 1K
R7 24 25 5K
R8 21 22 100
C2 25 1 43.3pF
D2 24 23 dmod
X3 23 21 3 1 compl
X4 26 25 22 1 compl
X5 16 26 17 1 And-gate
sp 10 8 17 1 spmod
sn 8 1 17 1 snmod
g1 11 1 13 1 938u
g2 21 1 23 1 938u
.model dmod d
.model spmod vswitch ron=3 roff=2meg von=1 voff=1.5
.model snmod vswitch ron=4 roff=2meg von=3 voff=2
.ends M7243
* AND Gate Subcircuit*
.subckt And-gate inp1 inp2 out-AS Vss-A
el out-A Vss-A table {v(inp1)*v(inp2)} = (0, 3.2) (3.2, 0)
Rout-a out-a vss-a 10 meg
rinpa inp1 vss-a 10 meg
rinpb inp2 vss-a 10 meg
.ends and-gate
* Comparator Subcircuit *
.subckt compl out inm vss
el out vss table {(v(inp)-v(inm))*5000} = (0,0) (3.2, 3.2)
Rout out vss 10meg
Rinp inp vss 10meg
Rinm inm vss 10meg
.ends compl
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