

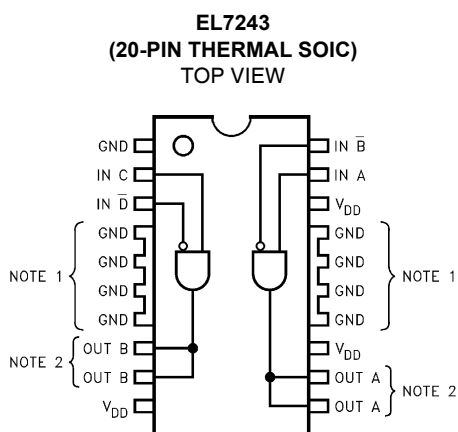
EL7243

Dual Input, High Speed, Dual Channel CCD Driver

FN7286
Rev 1.00
May 13, 2005

The EL7243 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 EL7243 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.

Pinout



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

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
- Pb-Free available (RoHS compliant)

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 NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL7243CM	20-Pin SOIC	-	MDP0027
EL7243CM-T13	20-Pin SOIC	13"	MDP0027
EL7243CMZ (See Note)	20-Pin SOIC (Pb-free)	-	MDP0027
EL7243CMZ-T13 (See Note)	20-Pin SOIC (Pb-free)	13"	MDP0027

NOTE: Intersil Pb-free 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 Current4A
 Storage Temperature Range -65°C to +150°C

Ambient Operating Temperature -40°C to +85°C
 Operating Junction Temperature 125°C
 Power Dissipation
 20-pin "Batwing" SOIC 1500mW

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: $T_J = T_C = T_A$

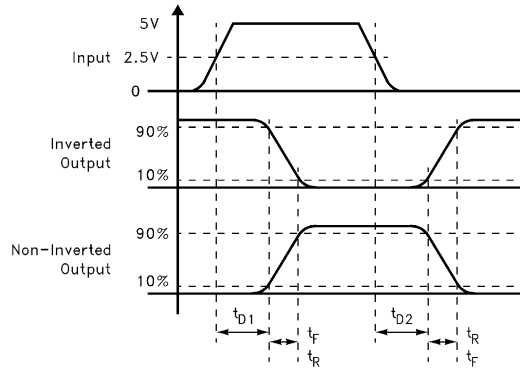
DC Electrical Specifications $T_A = 25^\circ\text{C}$, $V_{DD} = 15\text{V}$ unless otherwise specified

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		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 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

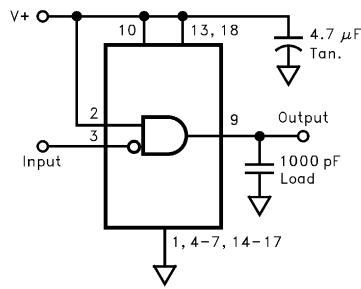
AC Electrical Specifications $T_A = 25^\circ\text{C}$, $V = 15\text{V}$ unless otherwise specified

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
SWITCHING CHARACTERISTICS						
t_R	Rise Time	$C_L = 500\text{pF}$ $C_L = 1000\text{pF}$			10 20	ns
t_F	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

Timing Table

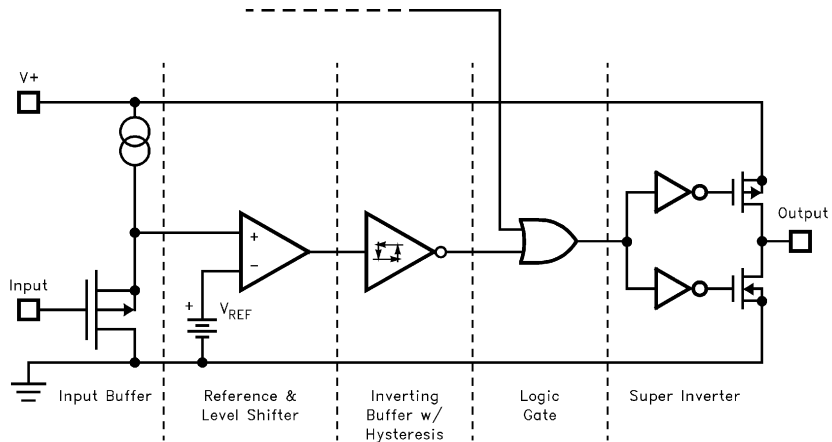


Standard Test Configuration

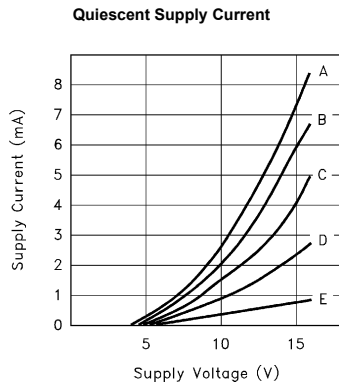
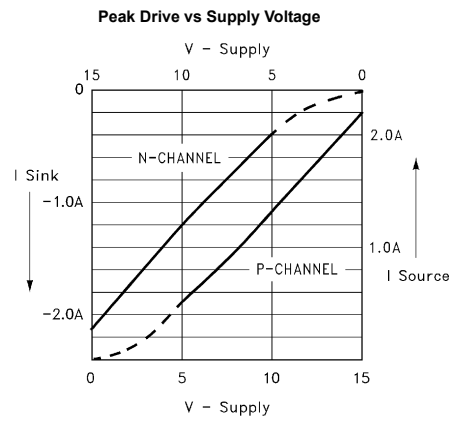
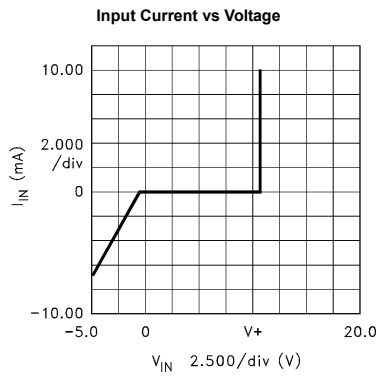
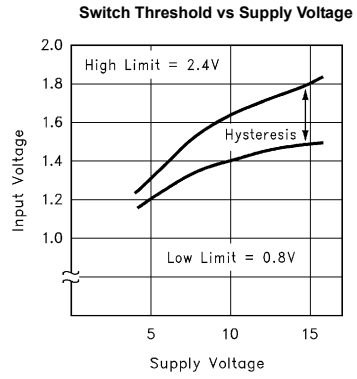
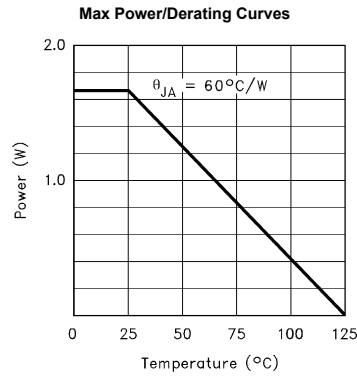


Pins 19, 20 connected to V+

Simplified Schematic

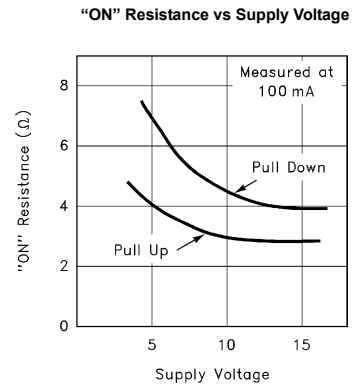


Typical Performance Curves

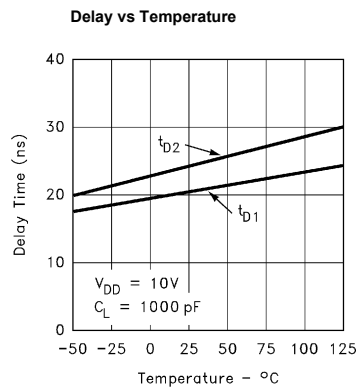
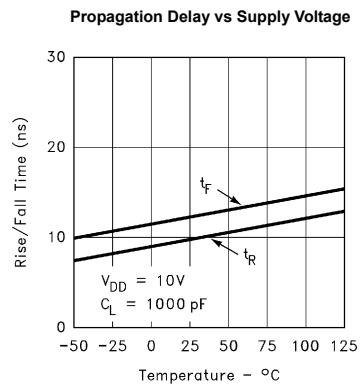
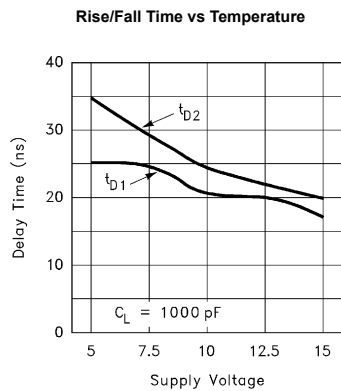
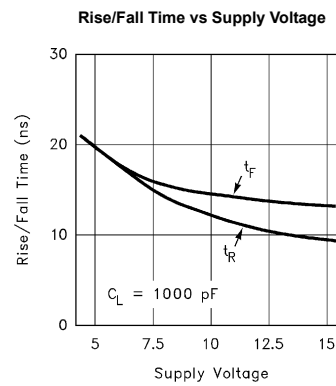
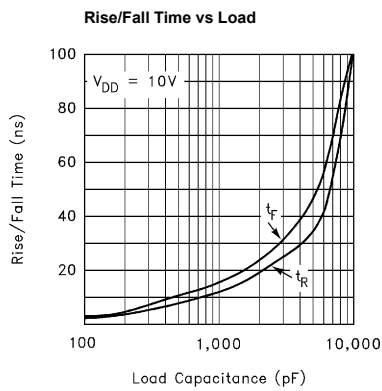
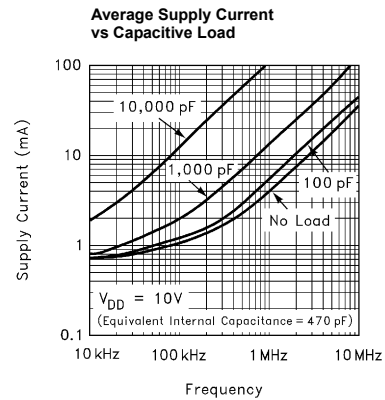
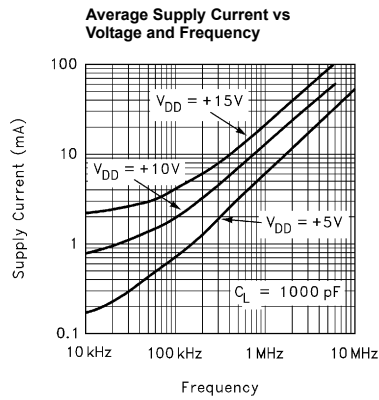


CASE:

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

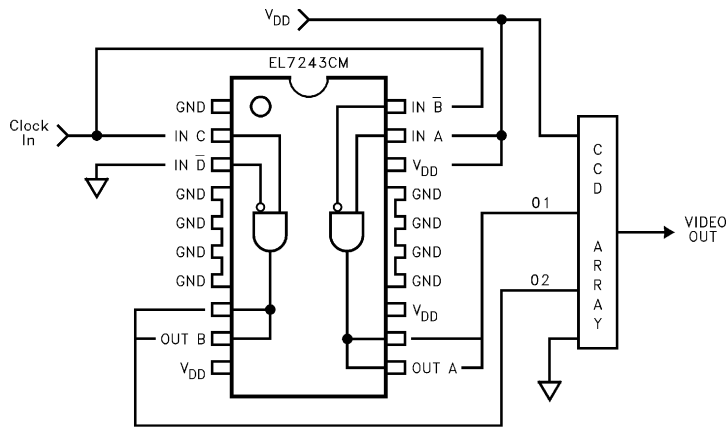


Typical Performance Curves (Continued)



Applications Information

Typical CCD Configuration



EL7243 Macromodel

