

Features

- Industry standard driver replacement
- Improved response times
- Matched rise and fall times
- Reduced clock skew
- Low output impedance
- Low input capacitance
- High noise immunity
- Improved clocking rate
- Low supply current
- Wide operating voltage range

Applications

- Clock/line drivers
- CCD Drivers
- Ultra-sound transducer drivers
- Power MOSFET drivers
- Switch mode power supplies
- Class D switching amplifiers
- Ultrasonic and RF generators
- Pulsed circuits

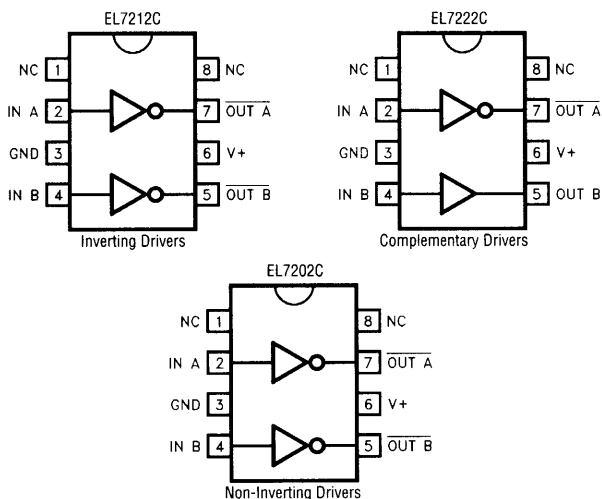
Ordering Information

Part No.	Package	Tape & Reel	Outline #
EL7202CN	PDIP-8	-	MDP0031
EL7202CS	SO-8	-	MDP0027
EL7202CS-T7	SO-8	7 in	MDP0027
EL7202CS-T13	SO-8	13 in	MDP0027
EL7212CN	PDIP-8	-	MDP0031
EL7212CS	SO-8	-	MDP0027
EL7212CS-T7	SO-8	7 in	MDP0027
EL7212CS-T13	SO-8	13 in	MDP0027
EL7222CN	PDIP-8	-	MDP0031
EL7222CS	SO-8	-	MDP0027
EL7222CS-T7	SO-8	7 in	MDP0027
EL7222CS-T13	SO-8	13 in	MDP0027

General Description

The EL7202C, EL7212C, EL7222C ICs are matched dual-drivers ICs that improve the operation of the industry standard DS0026 clock drivers. The Elantec Versions are very high speed drivers capable of delivering peak currents of 2.0 amps into highly capacitive loads. The high speed performance is achieved by means of a proprietary "Turbo-Driver" circuit that speeds up input stages by tapping the wider voltage swing at the output. Improved speed and drive capability are enhanced by matched rise and fall delay times. These matched delays maintain the integrity of input-to-output pulse-widths to reduce timing errors and clock skew problems. This improved performance is accompanied by a 10 fold reduction in supply currents over bipolar drivers, yet without the delay time problems commonly associated with CMOS devices. Dynamic switching losses are minimized with non-overlapped drive techniques.

Connection Diagrams



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

EL7202C, EL7212C, EL7222C

High Speed, Dual Channel Power MOSFET Drivers

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	SO	570mW
Storage Temperature Range	-65°C to +150°C	PDIP	1050mW
Ambient Operating Temperature	-40°C to +85°C		

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

$T_A = 25^\circ\text{C}$, $V = 15\text{V}$ 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 Sink	2 2		A
	I_{DC}	Continuous Output Current	Source/Sink	100		mA
Power Supply	I_S	Power Supply Current	Inputs High/7202 Inputs High/7212 Inputs High/7222	4.5 1 2.5	7.5 2.5 5.0	mA
	V_S	Operating Voltage		4.5	15	V

AC Electrical Characteristics

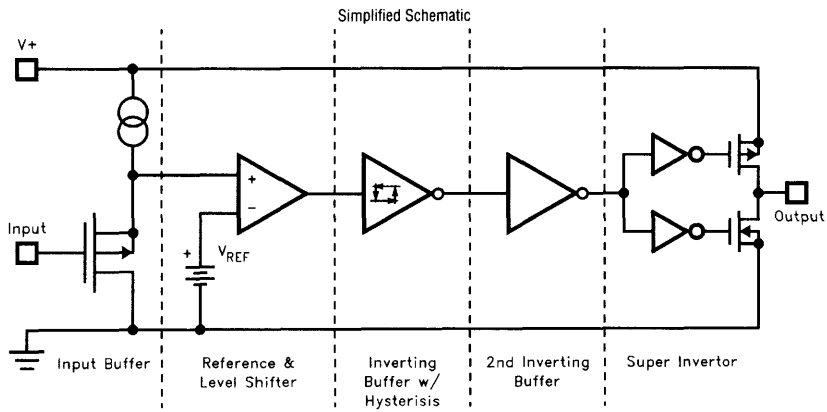
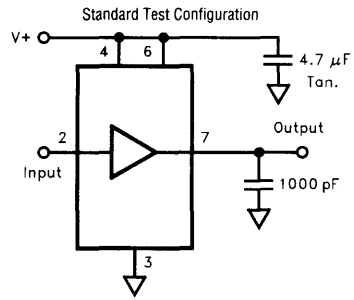
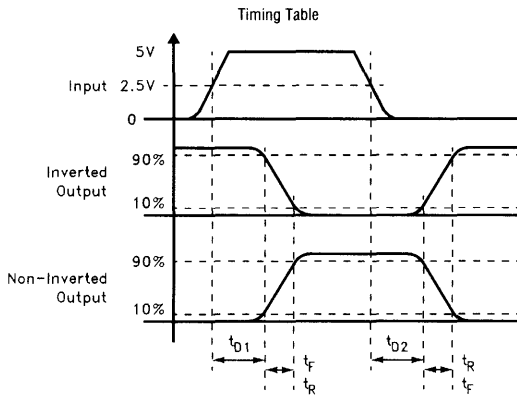
$T_A = 25^\circ\text{C}$, $V = 15\text{V}$ unless otherwise specified

Parameter	Description	Test Conditions	Min	Typ	Max	Units	
Switching Characteristics	t_R	Rise Time	$C_L = 500\text{pF}$ $C_L = 1000\text{pF}$		7.5 10	ns 20	
		Fall Time	$C_L = 500\text{pF}$ $C_L = 1000\text{pF}$		10 13	ns 20	
	t_{D1}	Turn-On Delay Time	See Timing Table		18	25	ns
	t_{D2}	Turn-Off Delay Time	See Timing Table		20	25	ns

EL7202C, EL7212C, EL7222C

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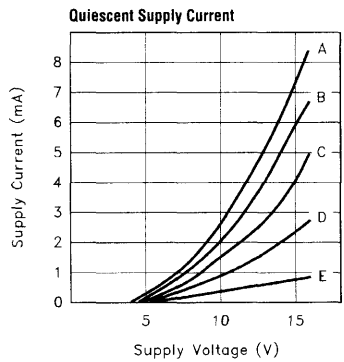
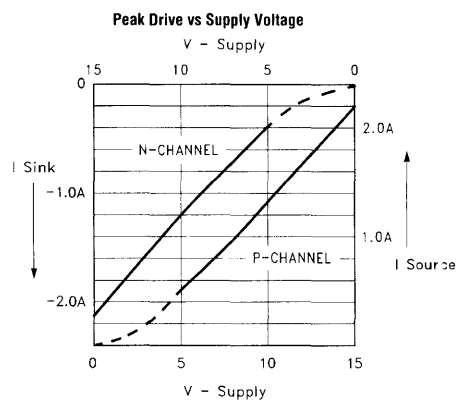
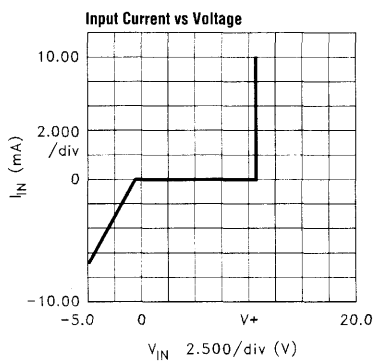
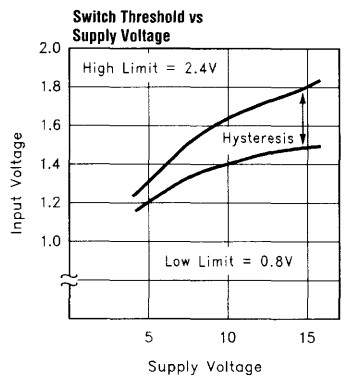
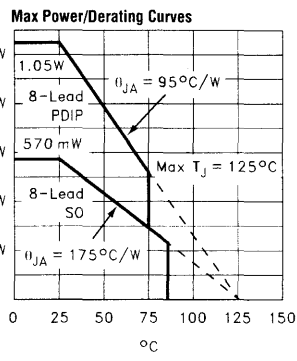


MOSFET Drivers & Comparators

EL7202C, EL7212C, EL7222C

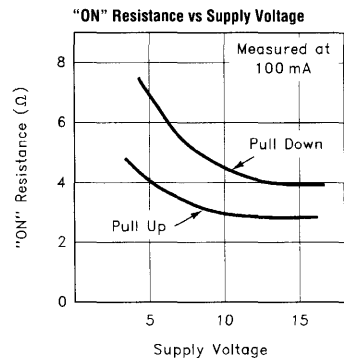
High Speed, Dual Channel Power MOSFET Drivers

Typical Performance Curves



CASE:

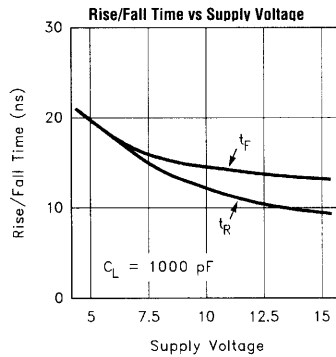
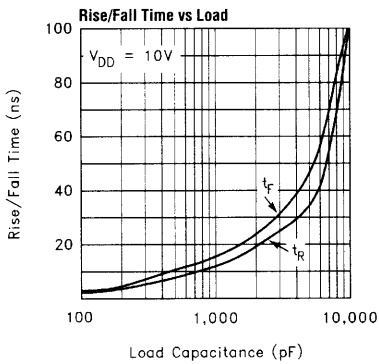
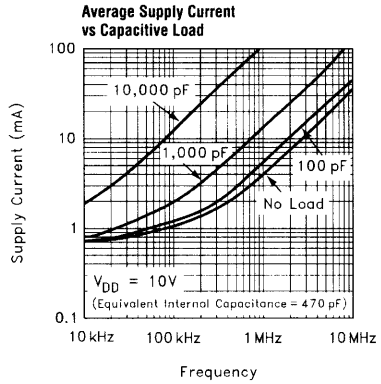
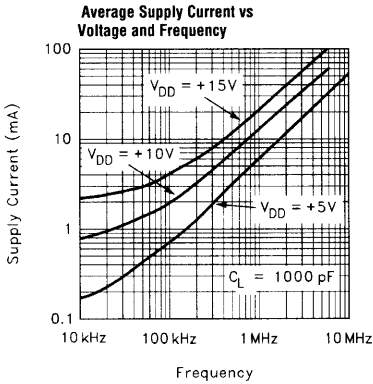
Device	Input Level	Curve
EL7202	GND	A
EL7202	GND, V+	B
EL7202	V+	C
EL7212	GND	C
EL7212	GND, V+	D
EL7212	V+	E
EL7222	GND	B
EL7222	GND, V+	C
EL7222	V+	D



EL7202C, EL7212C, EL7222C

High Speed, Dual Channel Power MOSFET Drivers

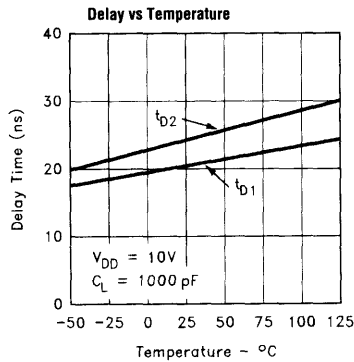
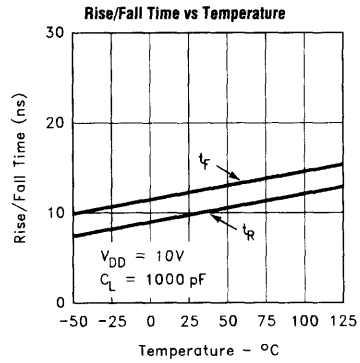
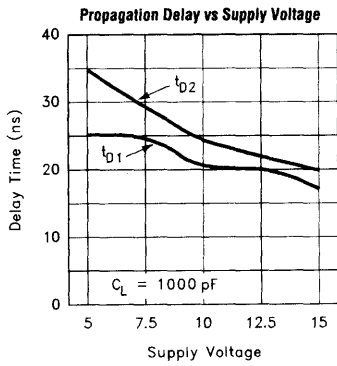
EL7202C, EL7212C, EL7222C



MOSFET Drivers & Comparators

EL7202C, EL7212C, EL7222C

High Speed, Dual Channel Power MOSFET Drivers

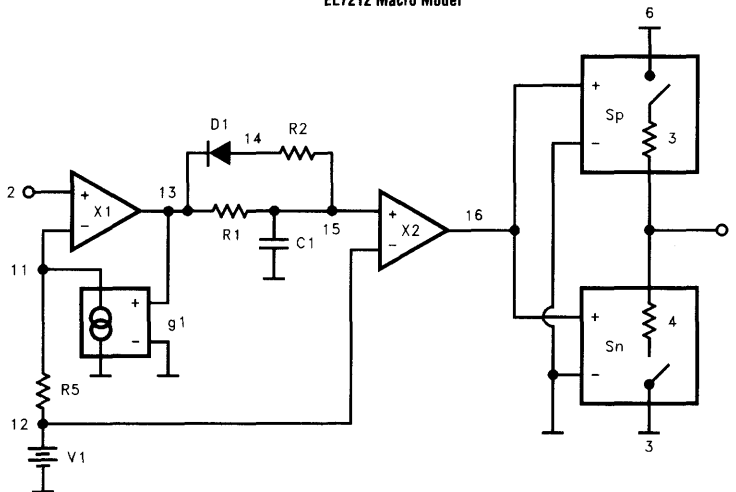


EL7202C, EL7212C, EL7222C

High Speed, Dual Channel Power MOSFET Drivers

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EL7212 Macro Model



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**** EL7212 model ****
*          input
*          |   gnd
*          |   |   Vsupply
*          |   |   |   Vout
.subckt M7212 2 3 6 7
V1 12 3 1.6
R1 13 15 1k
R2 14 15 5k
R5 11 12 100
C1 15 3 43.3 pF
D1 14 13 dmod
X1 13 11 2 3 comp1
X2 16 12 15 3 comp1
sp 6 7 16 3 spmod
sn 7 3 16 3 snmod
g1 11 0 13 0 938u
.model dmod d
.model spmod vswitch ron3 roff2meg von1 voff1.5
.model snmod vswitch ron4 roff2meg von3 voff2
.ends M7212
.subckt compl out inp inm vss
e1 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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MOSFET Drivers & Comparators