

## Dual Input, High Speed, Dual Channel Power MOSFET Driver

The EL7242/EL7252 dual input, 2-channel drivers achieve the same excellent switching performance of the EL7212 family while providing added flexibility. The 2-input logic and configuration is applicable to numerous power MOSFET drive circuits. As with other Elantec drivers, the EL7242/EL7252 are 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.

### Ordering Information

PART NUMBER	PART MARKING	TAPE & REEL	PACKAGE	PKG. DWG. #
EL7242CN	EL7242CN	-	8-Pin PDIP	MDP0031
EL7242CNZ (See Note)	EL7242CNZ	-	8-Pin PDIP* (Pb-free)	MDP0031
EL7242CS	7242CS	-	8-Pin SOIC	MDP0027
EL7242CS-T7	7242CS	7"	8-Pin SOIC	MDP0027
EL7242CS-T13	7242CS	13"	8-Pin SOIC	MDP0027
EL7242CSZ (See Note)	7242CSZ	-	8-Pin SOIC (Pb-free)	MDP0027
EL7242CSZ-T7 (See Note)	7242CSZ	7"	8-Pin SOIC (Pb-free)	MDP0027
EL7242CSZ-T13 (See Note)	7242CSZ	13"	8-Pin SOIC (Pb-free)	MDP0027
EL7252CN	EL7252CN	-	8-Pin PDIP	MDP0031
EL7252CS	7252CS	-	8-Pin SOIC	MDP0027
EL7252CS-T7	7252CS	7"	8-Pin SOIC	MDP0027
EL7252CS-T13	7252CS	13"	8-Pin SOIC	MDP0027
EL7252CSZ (See Note)	7252CSZ	-	8-Pin SOIC (Pb-free)	MDP0027
EL7252CSZ-T7 (See Note)	7252CSZ	7"	8-Pin SOIC (Pb-free)	MDP0027
EL7252CSZ-T13 (See Note)	7252CSZ	13"	8-Pin SOIC (Pb-free)	MDP0027

\*Pb-free PDIPs can be used for through hole wave solder processing only. They are not intended for use in Reflow solder processing applications.

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.

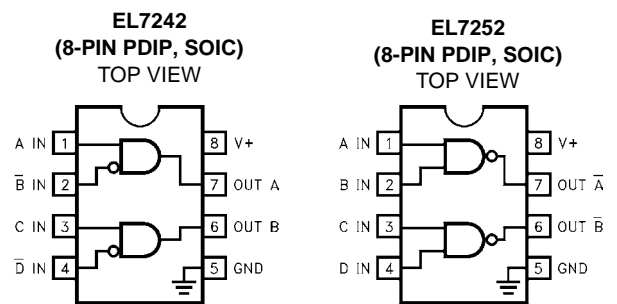
### Features

- Logic AND/NAND input
- 3V and 5V Input compatible
- Clocking speeds up to 10MHz
- 20ns Switching/delay time
- 2A Peak drive
- Isolated drains
- Low output impedance
- Low quiescent current
- Wide operating voltage — 4.5V to 16V
- Pb-free plus anneal available (RoHS compliant)

### Applications

- 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

### Pinouts



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

## EL7242, EL7252

### Absolute Maximum Ratings (T<sub>A</sub> = 25°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°C

Ambient Operating Temperature ..... -40°C to +85°C  
 Operating Junction Temperature ..... 125°C  
 Power Dissipation  
     SOIC ..... .570mW  
     PDIP\* ..... 1050mW

\*Pb-free PDIPs can be used for through hole wave solder processing only. They are not intended for use in Reflow solder processing applications.

*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<sub>J</sub> = T<sub>C</sub> = T<sub>A</sub>*

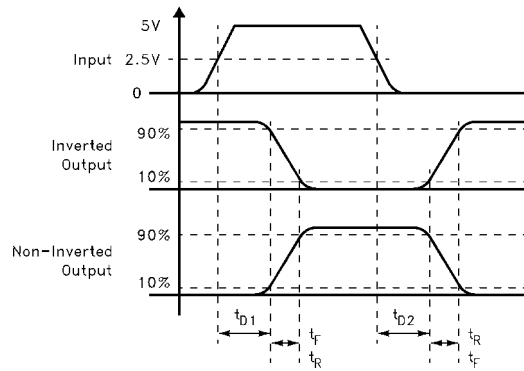
### DC Electrical Specifications T<sub>A</sub> = 25°C, V = 15V unless otherwise specified

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>INPUT</b>						
V <sub>IH</sub>	Logic "1" Input Voltage		2.4			V
I <sub>IH</sub>	Logic "1" Input Current	@V+		0.1	10	μA
V <sub>IL</sub>	Logic "0" Input Voltage				0.8	V
I <sub>IL</sub>	Logic "0" Input Current	@0V		0.1	10	μA
V <sub>HVS</sub>	Input Hysteresis			0.3		V
<b>OUTPUT</b>						
R <sub>OH</sub>	Pull-Up Resistance	I <sub>OUT</sub> = -100mA		3	6	Ω
R <sub>OL</sub>	Pull-Down Resistance	I <sub>OUT</sub> = +100mA		4	6	Ω
I <sub>PK</sub>	Peak Output Current	Source Sink		2 2		A
I <sub>DC</sub>	Continuous Output Current	Source/Sink	100			mA
<b>POWER SUPPLY</b>						
I <sub>S</sub>	Power Supply Current	Inputs High		1	2.5	mA
V <sub>S</sub>	Operating Voltage		4.5		16	V

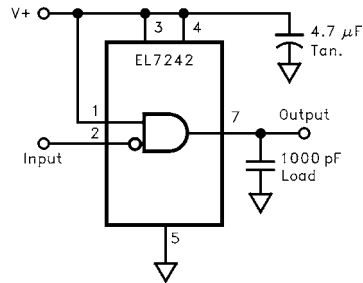
### AC Electrical Specifications T<sub>A</sub> = 25°C, V = 15V unless otherwise specified

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
<b>SWITCHING CHARACTERISTICS</b>						
t <sub>R</sub>	Rise Time	C <sub>L</sub> = 500pF C <sub>L</sub> = 1000pF			10 20	ns
t <sub>F</sub>	Fall Time	C <sub>L</sub> = 500pF C <sub>L</sub> = 1000pF			10 20	ns
t <sub>D-ON</sub>	Turn-On Delay Time			20	25	ns
t <sub>D-OFF</sub>	Turn-Off Delay Time			20	25	ns

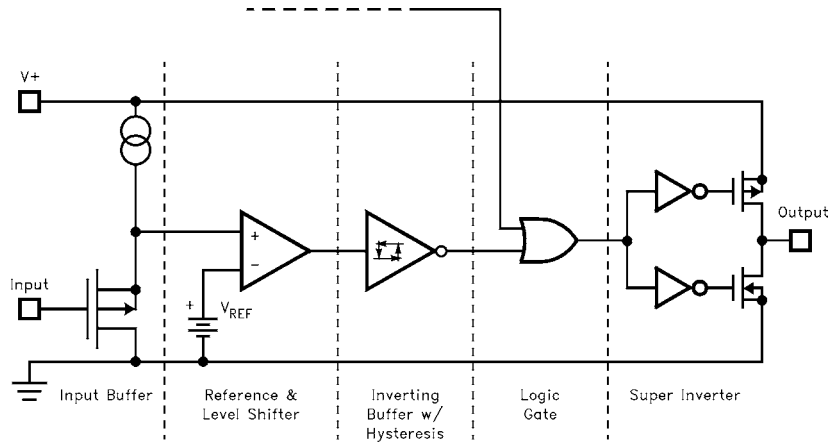
**Timing Table**



**Standard Test Configuration**

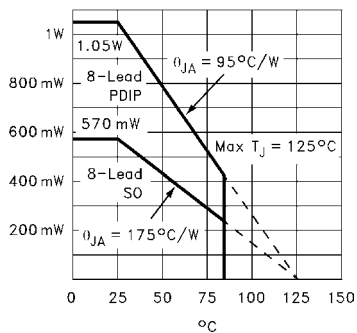


**Simplified Schematic**

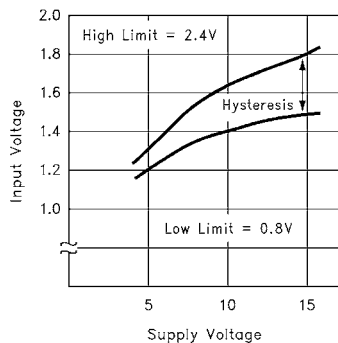


Typical Performance Curves

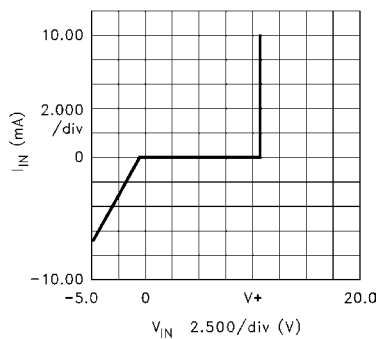
Max Power/Derating Curves



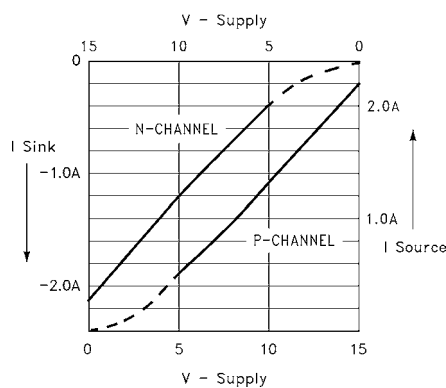
Switch Threshold vs Supply Voltage



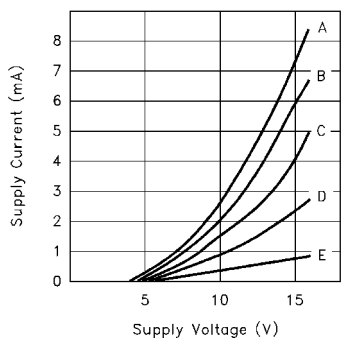
Input Current vs Voltage



Peak Drive vs Supply Voltage



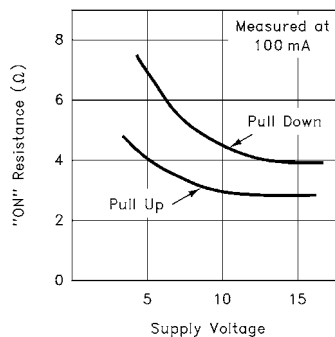
Quiescent Supply Current



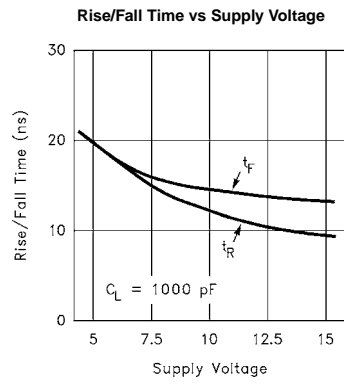
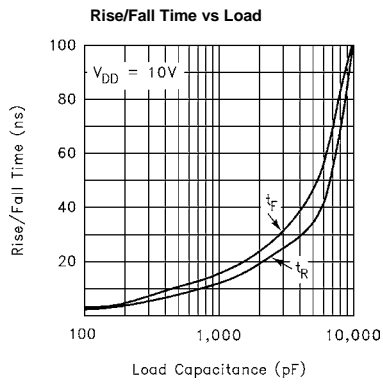
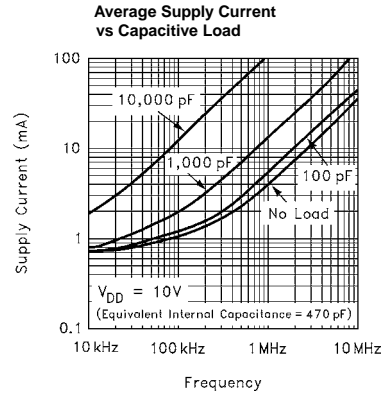
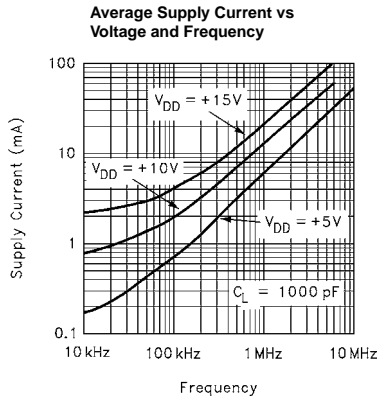
CASE:

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

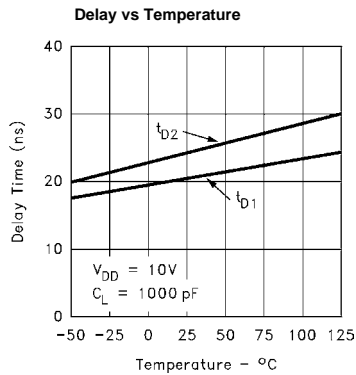
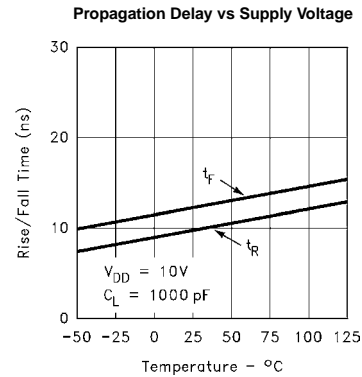
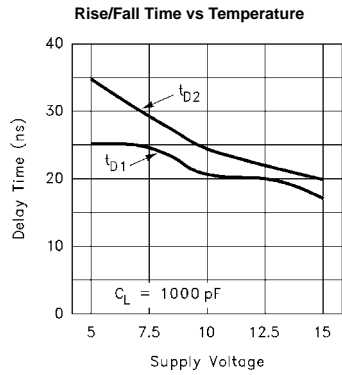
"ON" Resistance vs Supply Voltage



Typical Performance Curves (Continued)



Typical Performance Curves (Continued)



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