Data Sheet | April 11, 2005 | FN7283.1

Dual Channel, High Speed, High Current Line Driver w/3-State

The EL7232 3-state drivers are particularly well suited for ATE and microprocessor based applications. The low quiescent power dissipation makes this part attractive in battery applications. The 2A peak drive capability, makes the EL7232 an excellent choice when driving high speed capacitive lines, as well. The input circuitry provides level shifting from TTL levels to the supply rails. The EL7232 is available in 8-pin PDIP and 8-lead SO packages.

Ordering Information

PART NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL7232CN	8-Pin PDIP	-	MDP0031
EL7232CS	8-Pin SO	-	MDP0027
EL7232CS-T7	8-Pin SO	7”	MDP0027
EL7232CS-T13	8-Pin SO	13”	MDP0027
EL7232CSZ (See Note)	8-Pin SO (Pb-free)	-	MDP0027
EL7232CSZ-T7 (See Note)	8-Pin SO (Pb-free)	7”	MDP0027
EL7232CSZ-T13 (See Note)	8-Pin SO (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.

Features

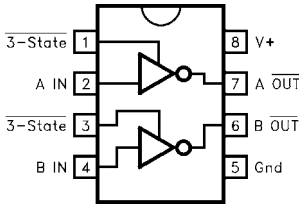
- 3-State output
- 3V and 5V input compatible
- Clocking speeds up to 10MHz
- 20ns Switching/delay time
- 2A Peak drive
- Low, matched output impedance—5Ω
- Low quiescent current — 2.5mA
- Wide operating voltage — 4.5V-16V
- Pb-Free available (RoHS compliant)

Applications

- Parallel bus line drivers
- EPROM and PROM programming
- Motor controls
- Charge pumps
- Sampling circuits
- Pin drivers
- Bridge circuits

Pinout

EL7232
(8-PIN PDIP, SO)
TOP VIEW



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

Truth Table

3-STATE	INPUT	OUTPUT
1	0	1
1	1	0
0	0	Open
0	1	Open

Absolute Maximum Ratings (T_A = 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

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: $T_J = T_C = T_A$

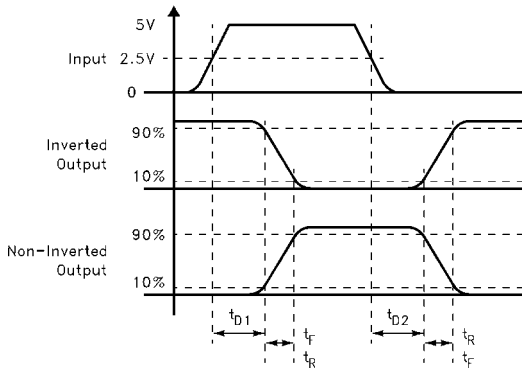
DC Electrical Specifications T_A = 25°C, V = 15V unless otherwise specified

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 mA		3	6	Ω
R_{OL}	Pull-Down Resistance	I_{OUT} = +100 mA		4	6	Ω
I_{OFF}	3-State Output Leakage	V_{OUT} = V+ V_{OUT} = 0V	0.2		10	µA
I_{PK}	Peak Output Current	Source Sink		2.0 2.0		A
I_{DC}	Continuous Output Current	Source/Sink	100			mA
POWER SUPPLY						
I_S	Power Supply Current	Inputs High		1	2.5	mA
V_S	Operating Voltage		4.5		16	V

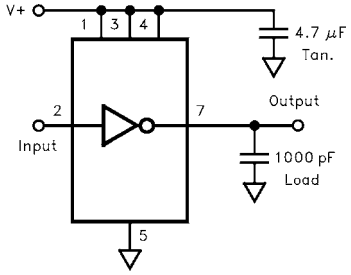
AC Electrical Specifications T_A = 25°C, V = 15V unless otherwise specified

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

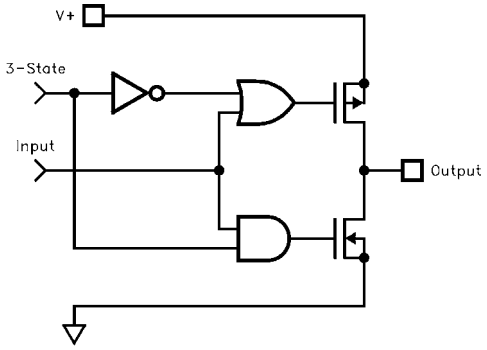
Timing Table



Standard Test Configuration

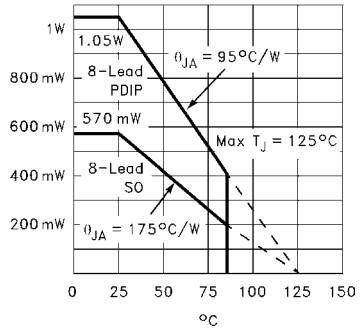


Simplified Schematic

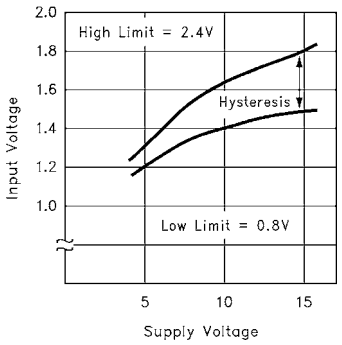


Typical Performance Curves

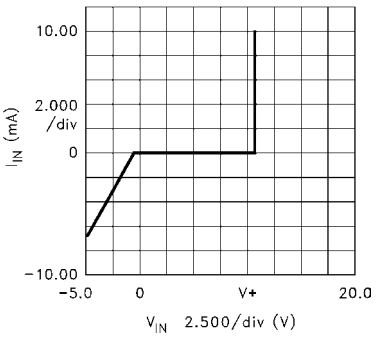
Max Power/Derating Curves



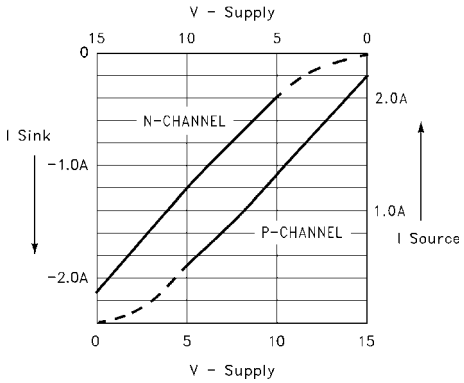
Switch Threshold vs Supply Voltage



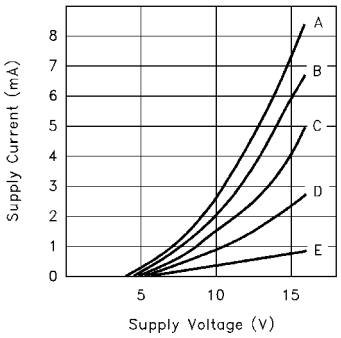
Input Current vs Voltage



Peak Drive vs Supply Voltage



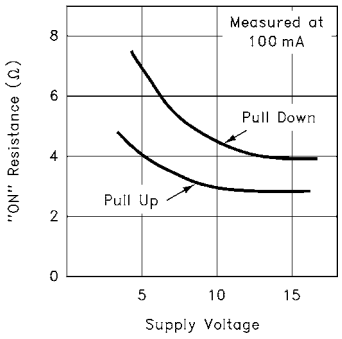
Quiescent Supply Current



CASE:

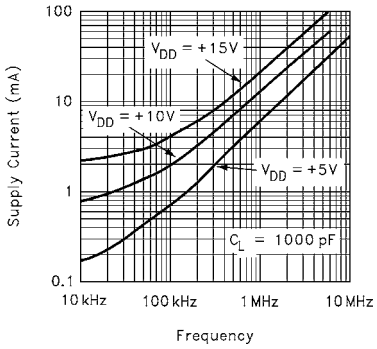
A	ALL INPUTS GND
B	3 INPUTS GND
C	2 INPUTS GND
D	1 INPUTS GND
E	ALL INPUTS V+

"ON" Resistance vs Supply Voltage

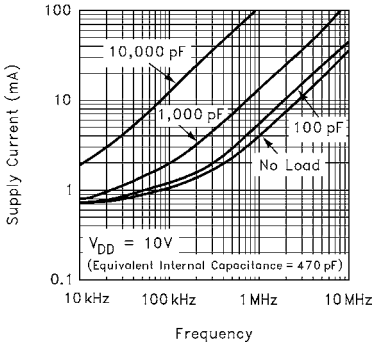


Typical Performance Curves (Continued)

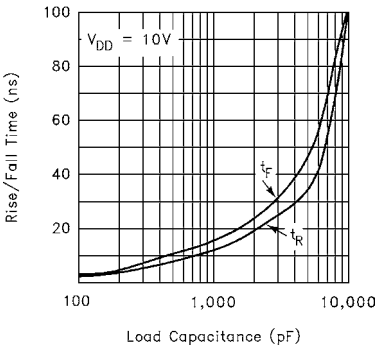
Average Supply Current vs Voltage and Frequency



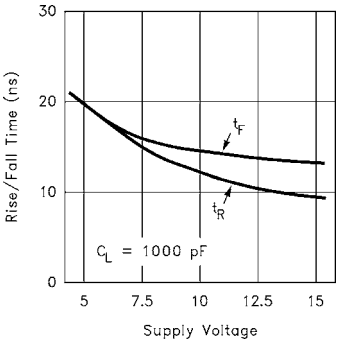
Average Supply Current vs Capacitive Load



Rise/Fall Time vs Load

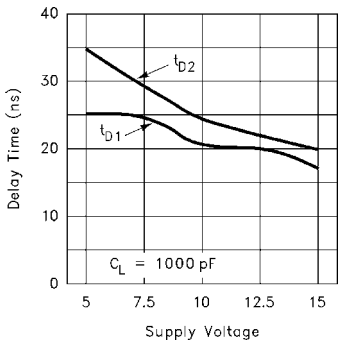


Rise/Fall Time vs Supply Voltage

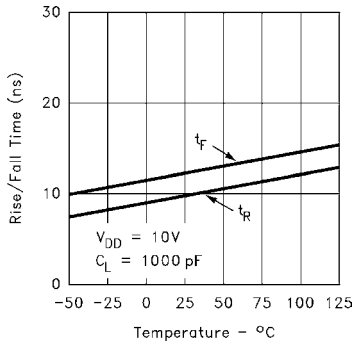


Typical Performance Curves (Continued)

Rise/Fall Time vs Temperature



Propagation Delay vs Supply Voltage



Propagation Delay vs Temperature