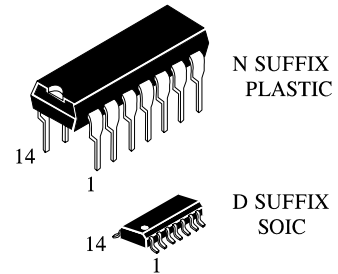


**IN74LS06**

## Hex Inverted Buffers with Open-Collector Outputs

This device contains hex inverted buffers with open-collector. It performs the Boolean function  $Y = \overline{A}$  in positive Logic.

- High Output Voltage (30 V)
- High Speed (  $t_{PD} = 8.5$  ns typical)
- Low Power Dissipation ( $P_D = 18$  mW per Gate)



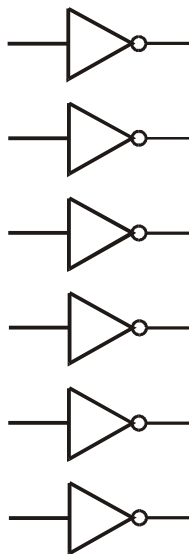
**ORDERING INFORMATION**

IN74LS06N Plastic

IN74LS06D SOIC

$T_A = 0^\circ$  to  $70^\circ$  C for all packages

**LOGIC DIAGRAM**



PIN 14 =  $V_{CC}$   
PIN 7 = GND

**PIN ASSIGNMENT**

A1	1	14	$V_{CC}$
Y1	2	13	A6
A2	3	12	Y6
Y2	4	11	A5
A3	5	10	Y5
Y3	6	9	A4
GND	7	8	Y4

**FUNCTION TABLE**

Inputs	Output
A	Y
H	L
L	H

**MAXIMUM RATINGS\***

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Supply Voltage	7.0	V
V <sub>IN</sub>	Input Voltage	5.5	V
V <sub>OUT</sub>	Output Voltage	30	V
T <sub>stg</sub>	Storage Temperature Range	-65 to +150	°C

\*Maximum Ratings are those values beyond which damage to the device may occur. Functional operation should be restricted to the Recommended Operating Conditions.

**RECOMMENDED OPERATING CONDITIONS**

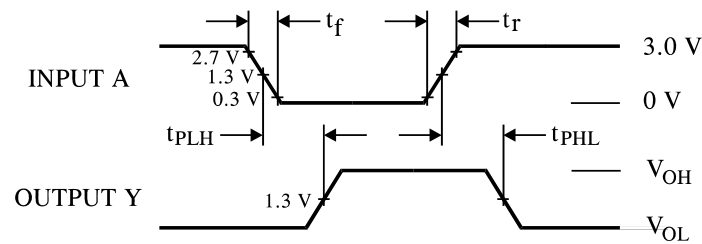
Symbol	Parameter	Min	Max	Unit
V <sub>CC</sub>	Supply Voltage	4.75	5.25	V
V <sub>IH</sub>	High Level Input Voltage	2.0		V
V <sub>IL</sub>	Low Level Input Voltage		0.8	V
V <sub>OH</sub>	High Level Output Voltage		30	V
I <sub>OL</sub>	Low Level Output Current		40	mA
T <sub>A</sub>	Ambient Temperature Range	0	+70	°C

**DC ELECTRICAL CHARACTERISTICS** over full operating conditions

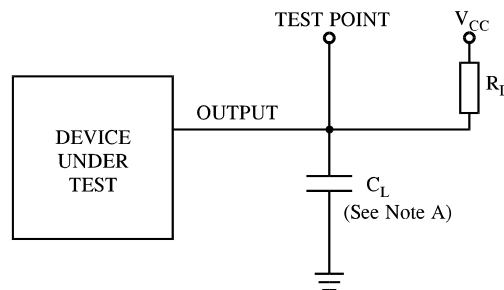
Symbol	Parameter	Test Conditions	Guaranteed Limit		Unit
			Min	Max	
V <sub>IK</sub>	Input Clamp Voltage	V <sub>CC</sub> = min, I <sub>IN</sub> = -18 mA		-1.5	V
I <sub>OH</sub>	High Level Output Current	V <sub>CC</sub> = min, V <sub>OH</sub> = max		250	μA
V <sub>OL</sub>	Low Level Output Voltage	V <sub>CC</sub> = min, I <sub>OL</sub> = 16 mA		0.4	V
		V <sub>CC</sub> = min, I <sub>OL</sub> = 40 mA		0.7	
I <sub>IH</sub>	High Level Input Current	V <sub>CC</sub> = max, V <sub>IN</sub> = 2.7 V		20	μA
		V <sub>CC</sub> = max, V <sub>IN</sub> = 5.5 V		1	mA
I <sub>IL</sub>	Low Level Input Current	V <sub>CC</sub> = max, V <sub>IN</sub> = 0.4 V		-0.2	mA
I <sub>CC</sub>	Supply Current	V <sub>CC</sub> = max	Total with outputs high	18	mA
			Total with outputs low	60	

**AC ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 5.0\text{ V}$ ,  $C_L = 15\text{ pF}$ ,  
 $R_L = 110\ \Omega$ ,  $t_r = 15\text{ ns}$ ,  $t_f = 6.0\text{ ns}$ )

Symbol	Parameter	Min	Max	Unit
$t_{PLH}$	Propagation Delay, Input A to Output Y		15	ns
$t_{PHL}$	Propagation Delay, Input A to Output Y		20	ns



**Figure 1. Switching Waveforms**



NOTE A.  $C_L$  includes probe and jig capacitance.

**Figure 2. Test Circuit**