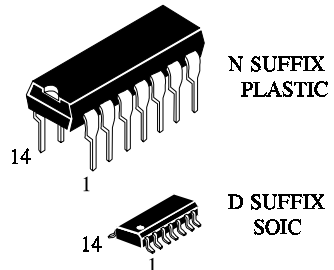


**IN74LS07**

**Hex Non-Inverted Buffers with Open-Collector Outputs**

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

- High Output Voltage (30 V)
- High Speed (  $t_{PD} = 12$  ns typical)
- Low Power Dissipation ( $P_D = 13$  mW per Gate)

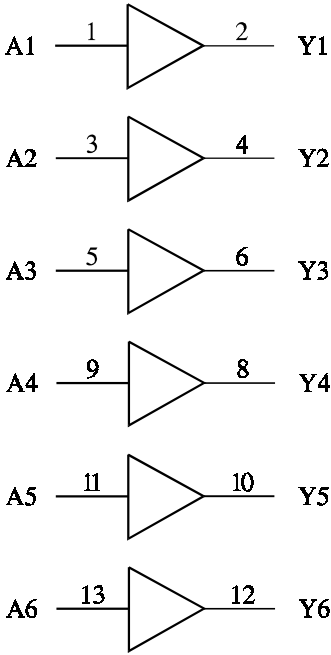


N SUFFIX PLASTIC

D SUFFIX SOIC

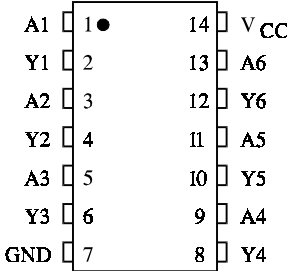
**ORDERING INFORMATION**  
 IN74LS07N Plastic  
 IN74LS07D SOIC  
 $T_A = 0^\circ$  to  $70^\circ$  C for all packages

**LOGIC DIAGRAM**



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

**PIN ASSIGNMENT**



**FUNCTION TABLE**

Inputs	Output
A	Y
H	H
L	L

**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		14	mA
			Total with outputs low		45	

**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		10	ns
$t_{PHL}$	Propagation Delay, Input A to Output Y		30	ns

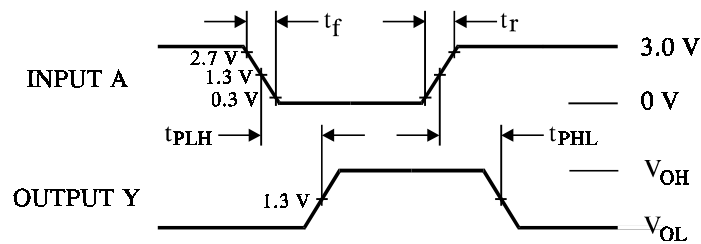
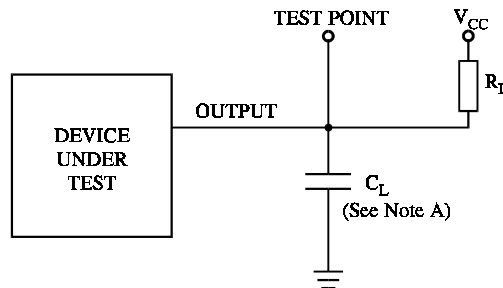


Figure 1. Switching Waveforms



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

Figure 2. Test Circuit