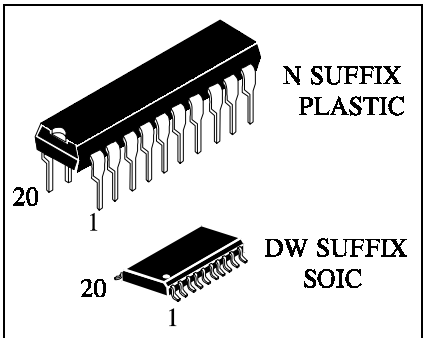
IN74ALS244

Octal 3-State Noninverting Buffer/Line Driver/Line Receiver

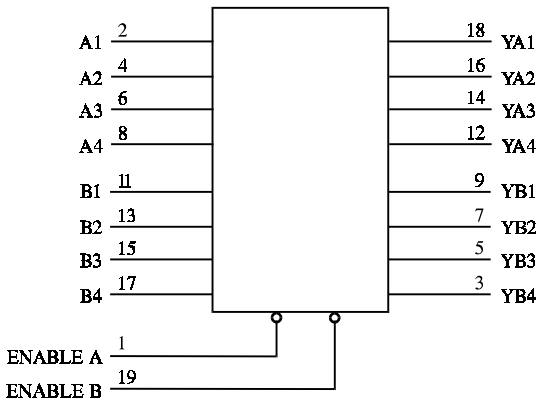
The IN74ALS244 is Octal Buffers and Line Drivers designed to be used as memory address drivers, clock drivers and busoriented transmitters/receivers which provide improved PC board density.

- Switching response specified into 500Ω/50 pF
- Switching specifications guaranteed over full temperature and V_{CC} range
- Low level drive current:
  54ALS = 12 mA, 74ALS = 24 mA



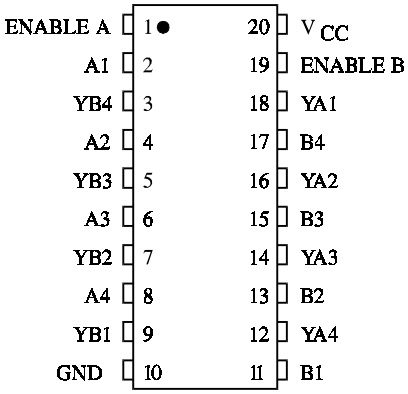
ORDERING INFORMATION
IN74ALS244N Plastic
IN74ALS244DW SOIC
T_A = -10° to 70° C
for all packages

LOGIC DIAGRAM



PIN 20=V_{CC}
PIN 10 = GND

PIN ASSIGNMENT



FUNCTION TABLE

Inputs		Outputs
Enable A, Enable B	A,B	YA,YB
L	L	L
L	H	H
H	X	Z

X=don't care
Z = high impedance

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	7.0	V
V_{IN}	Input Voltage	7.0	V
V_{OUT}	Output Voltage	5.5	V
Tstg	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_{CC}	Supply Voltage	4.5	5.5	V
V_{IH}	High Level Input Voltage	2.0		V
V_{IL}	Low Level Input Voltage		0.8	V
I_{OH}	High Level Output Current		-15	mA
I_{OL}	Low Level Output Current		24	mA
T_A	Ambient Temperature Range	-10	+70	°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Test Conditions		Guaranteed Limit		Unit
				Min	Max	
V_{IK}	Input Clamp Voltage	V_{CC} = min, I_{IN} = -18 mA			-1.5	V
V_{OH}	High Level Output Voltage	V_{CC} = min, I_{OH} = -0.4 mA		2.5		V
		V_{CC} = min, I_{OH} = -3.0 mA		2.4		
		V_{CC} = min, I_{OH} = -15 mA		2.0		
V_{OL}	Low Level Output Voltage	V_{CC} = min, I_{OL} = 12 mA			0.4	V
		V_{CC} = min, I_{OL} = 24 mA			0.5	
I_{OZH}	Output Off Current HIGH	V_{CC} = max, V_{OUT} = 2.7 V			20	µA
I_{OZL}	Output Off Current LOW	V_{CC} = max, V_{OUT} = 0.4 V			-20	µA
I_{IH}	High Level Input Current	V_{CC} = max, V_{IN} = 2.7 V			20	µA
		V_{CC} = max, V_{IN} = 7.0 V			0.1	mA
I_{IL}	Low Level Input Current	V_{CC} = max, V_{IN} = 0.4 V			-0.1	mA
I_O	Output Short Circuit Current	V_{CC} = max, V_O = 2.25 V		-30	-112	mA
I_{CC}	Supply Current	V_{CC} = max	Outputs High		15	mA
			Outputs Low		24	
			3-State (High Z)		27	

AC ELECTRICAL CHARACTERISTICS over full operating conditions (V_{CC} = 5.0 V±10%, C_L = 50 pF, R_{L1} =R_{L2} = 500 Ω, Input t_r = t_f = 2.0 ns)

Symbol	Parameter	Min	Max	Unit
t_{PLH}	Propagation Delay, Data to Output		10	ns
t_{PHL}	Propagation Delay, Data to Output		10	ns
t_{PZH}	Output Enable Time		20	ns
t_{PZL}	Output Enable Time		20	ns
t_{PHZ}	Output Disable Time		40	ns
t_{PLZ}	Output Disable Time		25	ns

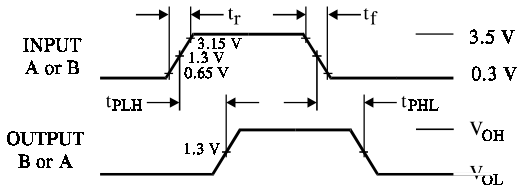
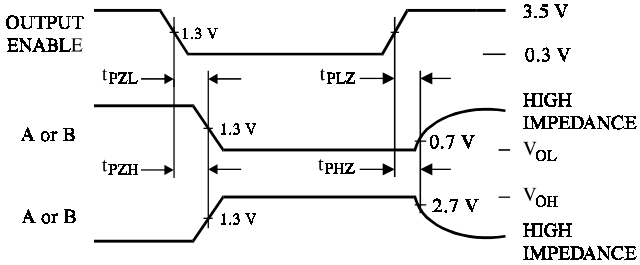
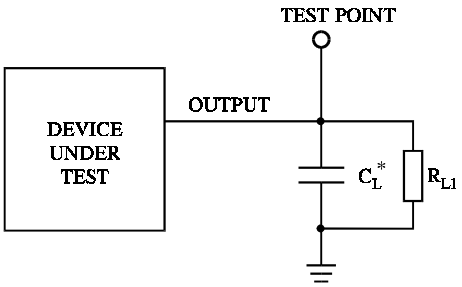


Figure 1. Switching Waveforms



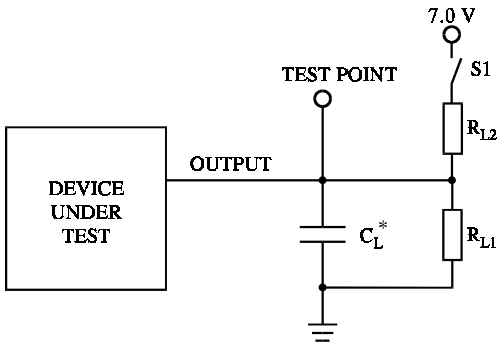
t_{PZL}, t_{PLZ} - S1 closed
t_{PZH}, t_{PHZ} - S1 opened

Figure 2. Switching Waveforms



* Includes all probe and jig capacitance.

Figure 3. Test Circuit



* Includes all probe and jig capacitance.

Figure 4. Test Circuit

EXPANDED LOGIC DIAGRAM