

HD74HC242 ● Quad. Bus Transceivers (with 3-state outputs)

HD74HC243 ● Quad. Bus Transceivers (with noninverted 3-state outputs)

The HD74HC242 is an inverting buffer and the HD74HC243 is a noninverting buffer. Each device has one active high enable (GBA), and one active low enable ($\bar{G}AB$). GBA enables the A outputs and $\bar{G}AB$ enables the B outputs. The device does not have schmitt trigger inputs.

FEATURES

- High Speed Operation: $t_{pd}=10\text{ns}$ typ. ($C_L=50\text{pF}$)
- High Output Current: Fanout of 15 LSTTL Loads
- Wide Operating Voltage: $V_{CC}=2\sim 6\text{V}$
- Low Input Current: $1\mu\text{A}$ max.
- Low Quiescent Supply Current: I_{CC} (static) = $4\mu\text{A}$ max. ($T_a=25^\circ\text{C}$)

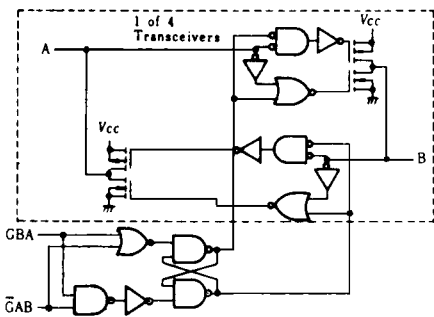
FUNCTION TABLE

Control inputs		HD74HC242		HD74HC243	
		Data Port Status	Data Port Status	Data Port Status	Data Port Status
$\bar{G}AB$	GBA	A	B	A	B
H	H	\bar{O}	I	O	I
L	H	Z	Z	Z	Z
H	L	Z	Z	Z	Z
L	L	I	\bar{O}	I	O

I = Input
O = Output
 \bar{O} = Inverting Output
Z = High Impedance

LOGIC DIAGRAM

HD74HC242

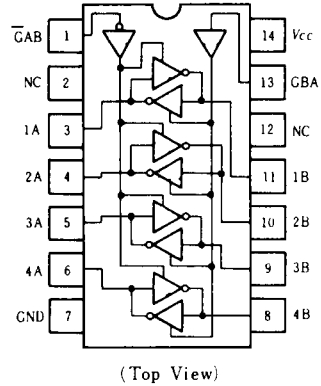


ABSOLUTE MAXIMUM RATINGS

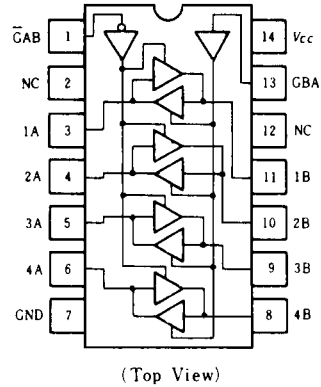
Item	Symbol	Rating	Unit
Supply Voltage Range	V_{CC}	-0.5 ~ +7.0	V
Input Voltage	V_{IN}	-0.5 ~ $V_{CC}+0.5$	V
Output Voltage	V_{OUT}	-0.5 ~ $V_{CC}+0.5$	V
DC Current Drain per pin	I_{OVT}	± 35	mA
DC Current Drain per V_{CC}, GND	I_{CC}, I_{GND}	± 75	mA
DC Input Diode Current	I_{IK}	± 20	mA
DC Output Diode Current	I_{OK}	± 20	mA
Power Dissipation per Package	P_T	500	mW
Storage Temperature	T_{stg}	-65 ~ +150	$^\circ\text{C}$

PIN ARRANGEMENT

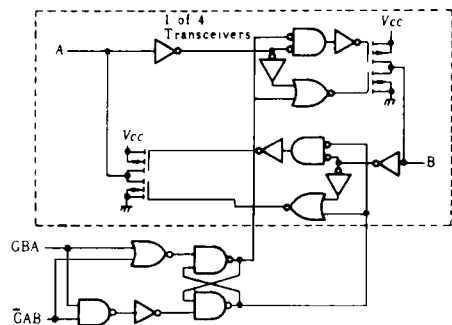
HD74HC242



HD74HC234



HD74HC243



■ DC CHARACTERISTICS

Item	Symbol	V _{CC} (V)	Test Conditions	T _a = 25°C			T _a = -40~+85°C		Unit	
				min	typ	max	min	max		
Input Voltage	V _{IH}	2.0		1.5	—	—	1.5	—	V	
		4.5		3.15	—	—	3.15	—		
		6.0		4.2	—	—	4.2	—		
	V _{IL}	2.0		—	—	0.5	—	0.5	V	
		4.5		—	—	1.35	—	1.35		
		6.0		—	—	1.8	—	1.8		
Output Voltage	V _{OH}	2.0	V _{in} = V _{IH} or V _{IL}	I _{OH} = -20μA	1.9	2.0	—	1.9	—	V
		4.5			4.4	4.5	—	4.4	—	
		6.0			5.9	6.0	—	5.9	—	
		4.5		I _{OH} = -6mA	4.18	—	—	4.13	—	
		6.0		I _{OH} = -7.8mA	5.68	—	—	5.63	—	
	V _{OL}	2.0	V _{in} = V _{IH} or V _{IL}	I _{OL} = 20μA	—	0.0	0.1	—	0.1	V
		4.5			—	0.0	0.1	—	0.1	
		6.0			—	0.0	0.1	—	0.1	
		4.5		I _{OL} = 6mA	—	—	0.26	—	0.33	
		6.0		I _{OL} = 7.8mA	—	—	0.26	—	0.33	
Off-state Output Current	I _{OZ}	6.0	V _{in} = V _{IH} or V _{IL} , V _{out} = V _{CC} or GND	—	—	±0.5	—	±5.0	μA	
Input Current	I _{in}	6.0	V _{in} = V _{CC} or GND	—	—	±0.1	—	±1.0	μA	
Quiescent Supply Current	I _{CC}	6.0	V _{in} = V _{CC} or GND, I _{out} = 0μA	—	—	4.0	—	40	μA	

■ AC CHARACTERISTICS (C_L = 50pF, Input t_r = t_f = 6ns)

Item	Symbol	V _{CC} (V)	Test Conditions	T _a = 25°C			T _a = -40~+85°C		Unit
				min	typ	max	min	max	
Propagation Delay Time	t _{PHL}	2.0		—	—	90	—	115	ns
		4.5		—	10	18	—	23	
		6.0		—	—	15	—	20	
	t _{PLH}	2.0		—	—	90	—	115	ns
		4.5		—	10	18	—	23	
		6.0		—	—	15	—	20	
Output Enable Time	t _{ZL}	2.0		—	—	150	—	190	ns
		4.5		—	14	30	—	38	
		6.0		—	—	26	—	33	
	t _{ZH}	2.0		—	—	150	—	190	ns
		4.5		—	15	30	—	38	
		6.0		—	—	26	—	33	
Output Disable Time	t _{LZ}	2.0		—	—	150	—	190	ns
		4.5		—	18	30	—	38	
		6.0		—	—	26	—	33	
	t _{HZ}	2.0		—	—	150	—	190	ns
		4.5		—	20	30	—	38	
		6.0		—	—	26	—	33	
Output Rise/Fall Time	t _{TLH}	2.0		—	—	60	—	75	ns
	t _{THL}	4.5		—	4	12	—	15	
		6.0		—	—	10	—	13	
Input Capacitance	C _{in}	—		—	5	10	—	10	pF