

HD74HCT242/HD74HCT243

Quad. Bus Transceivers (with 3-state outputs)

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Description

The HD74HCT242 is an inverting buffer and the HD74HCT243 is a noninverting buffer. Each device has one active high enable (GBA), and one active low enable ($\overline{\text{GAB}}$). GBA enables the A outputs and $\overline{\text{GAB}}$ enables the B outputs.

The device does not have schmitt trigger inputs.

Features

- LSTTL Output Logic Level Compatibility as well as CMOS Output Compatibility
- High Speed Operation: t_{pd} (A to Y) = 9.5 ns typ ($C_L = 50$ pF)
- High Output Current: Fanout of 15 LSTTL Loads
- Wide Operating Voltage: $V_{CC} = 4.5$ to 5.5 V
- Low Input Current: 1 μA max
- Low Quiescent Supply Current: I_{CC} (static) = 4 μA max ($T_a = 25^\circ\text{C}$)

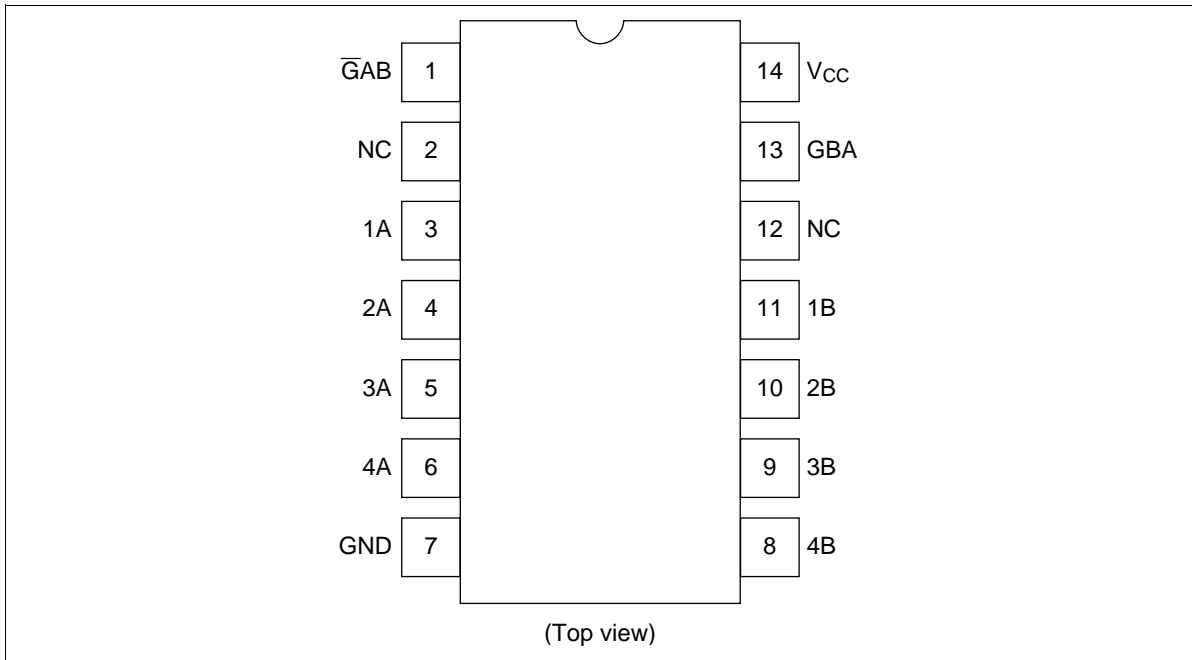
Function Table

		HD74HCT242		HD74HCT243	
Control Inputs		Data Port Status		Data Port Status	
$\overline{\text{GAB}}$	GBA	A	B	A	B
H	H	$\overline{\text{O}}$	I	O	I
L	H	Z	Z	Z	Z
H	L	Z	Z	Z	Z
L	L	I	$\overline{\text{O}}$	I	O

- I : Input
O : Output
 $\overline{\text{O}}$: Inverting Output
Z : High Impedance

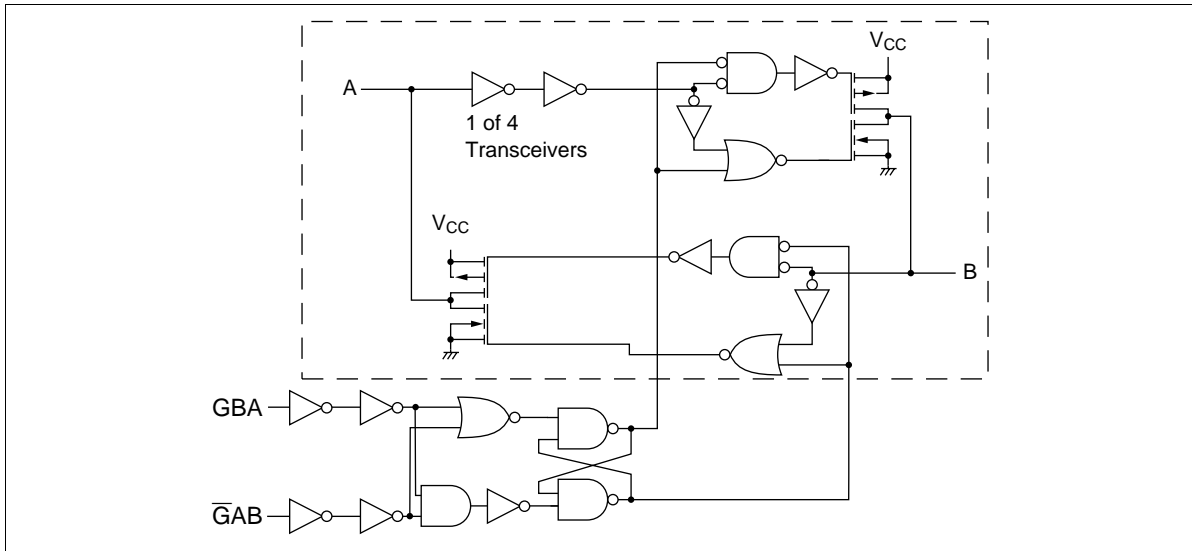
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Pin Arrangement



Block Diagram

HD74HCT242



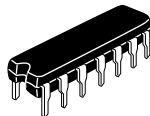
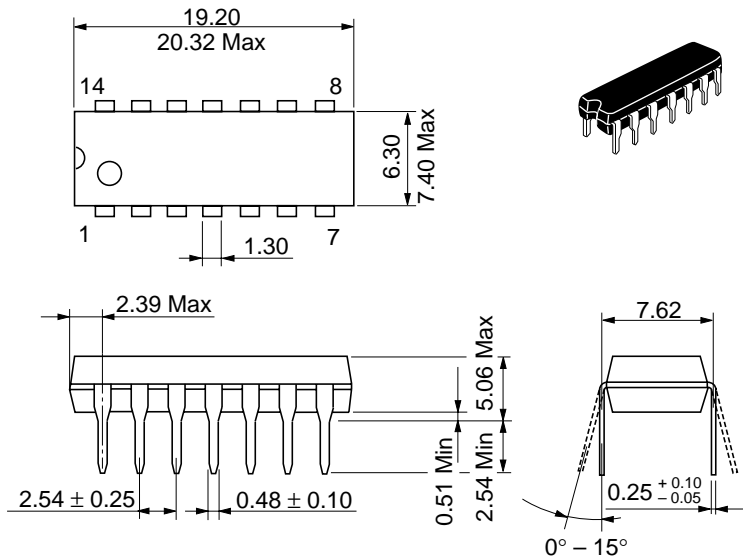
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DC Characteristics

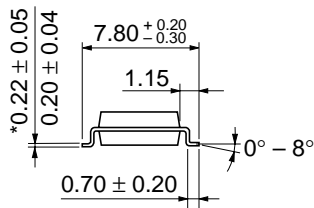
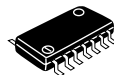
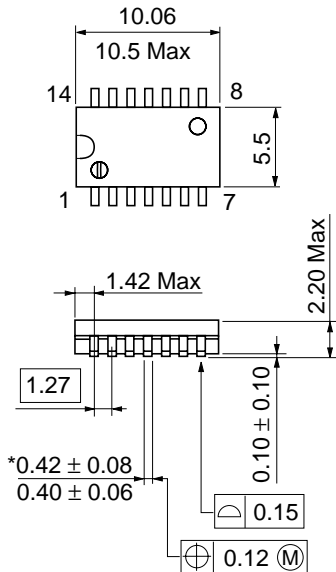
Item	Symbol	Ta = 25°C			Ta = -40 to +85°C		Unit	Test Conditions	
		Min	Typ	Max	Min	Max		V _{cc} (V)	
Input voltage	V _{IH}	2.0	—	—	2.0	—	V	4.5 to 5.5	
	V _{IL}	—	—	0.8	—	0.8	V	4.5 to 5.5	
Output voltage	V _{OH}	4.4	—	—	4.4	—	V	4.5	Vin = V _{IH} or V _{IL} I _{OH} = -20 μA
		4.18	—	—	4.13	—		4.5	I _{OH} = -6 mA
	V _{OL}	—	—	0.1	—	0.1	V	4.5	Vin = V _{IH} or V _{IL} I _{OL} = 20 μA
		—	—	0.26	—	0.33		4.5	I _{OL} = 6 mA
Off-state output current	I _{OZ}	—	—	±0.5	—	±5.0	μA	5.5	Vin = V _{IH} or V _{IL} , Vout = V _{cc} or GND
Input current	I _{in}	—	—	±0.1	—	±1.0	μA	5.5	Vin = V _{cc} or GND
Quiescent current	I _{cc}	—	—	4.0	—	40	μA	5.5	Vin = V _{cc} or GND, Iout = 0 μA

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

Item	Symbol	Ta = 25°C			Ta = -40 to +85°C		Unit	Test Conditions	
		Min	Typ	Max	Min	Max		V _{cc} (V)	
Propagation delay time	t _{PHL}	—	10	18	—	22	ns	4.5	
	t _{PLH}	—	9	18	—	22		4.5	
Output enable time	t _{ZL}	—	14	30	—	38	ns	4.5	
	t _{ZH}	—	13	30	—	38		4.5	
Output disable time	t _{LZ}	—	16	30	—	38	ns	4.5	
	t _{HZ}	—	17	30	—	38		4.5	
Output rise/fall time	t _{TLH} t _{THL}	—	4	12	—	15	ns	4.5	
Input capacitance	C _{in}	—	5	10	—	10	pF	—	

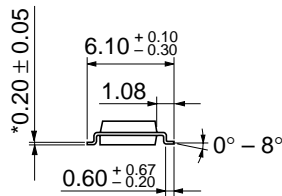
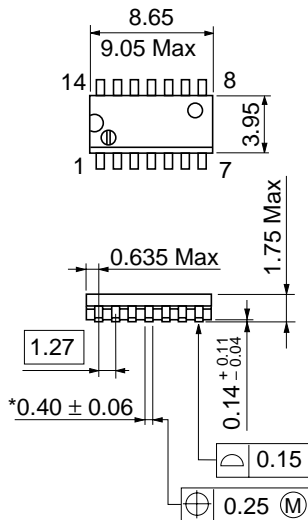


Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g



Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

*Dimension including the plating thickness
Base material dimension



Hitachi Code	FP-14DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.13 g

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