
HD74HCT449

Quad. Bus Transceivers with Individual Direction Controls

HITACHI

Description

The HD74HCT449 has 4 bus transceivers. The device has direction control inputs with individual. And this control inputs select data transmissible direction.

When $\overline{\text{GBA}}$ is high, A outputs are disable, and when $\overline{\text{GAB}}$ is high, B outputs are disable.

Features

- LSTTL Output Logic Level Compatibility as well as CMOS Output Compatibility
- High Speed Operation: t_{pd} (A to B) = 12.5 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

Enable

$\overline{\text{GBA}}$	$\overline{\text{GAB}}$	Direction DIR	Operation
H	H	X	Isolation
X	L	H	A data to B bus
L	X	L	B data to A bus
X	H	H	Isolation
H	X	L	Isolation

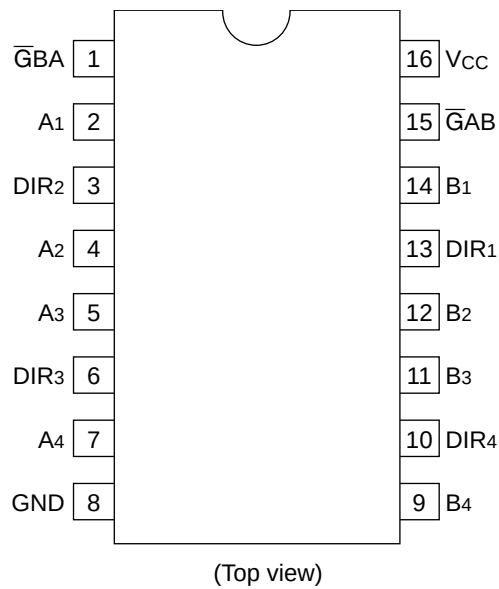
H : High Level

L : Low Level

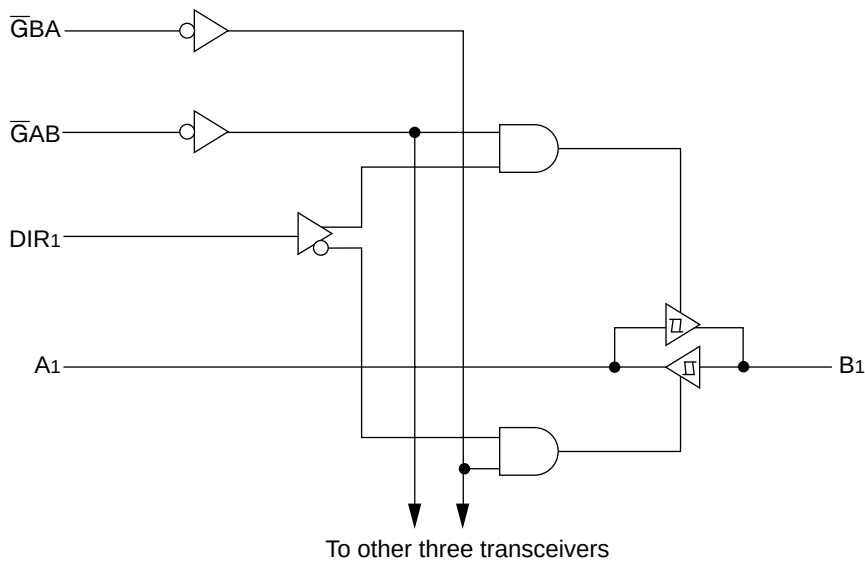
X : Irrelevant.

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Pin Arrangement



Logic Diagram



Absolute Maximum Ratings

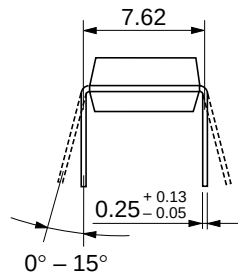
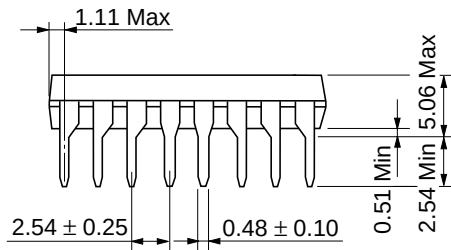
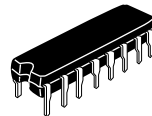
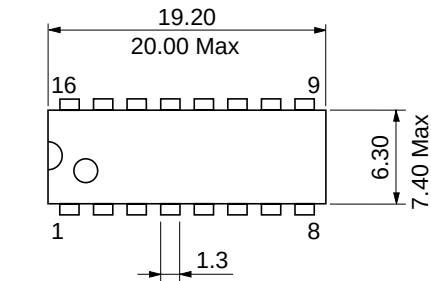
Item	Symbol	Rating	Unit
Supply voltage range	V_{CC}	−0.5 to +7.0	V
Input voltage	V_{IN}	−0.5 to $V_{CC} + 0.5$	V
Output voltage	V_{OUT}	−0.5 to $V_{CC} + 0.5$	V
DC current drain per pin	I_{OUT}	±35	mA
DC current drain per V_{CC} , GND	I_{CC} , I_{GND}	±75	mA
DC input diode current	I_{IK}	±20	mA
DC output diode current	I_{OK}	±20	mA
Power dissipation per package	P_T	500	mW
Storage temperature	Tstg	−65 to +150	°C

DC Characteristics

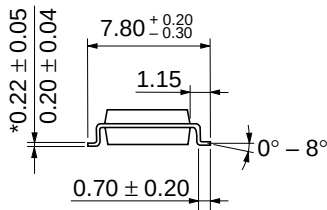
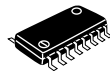
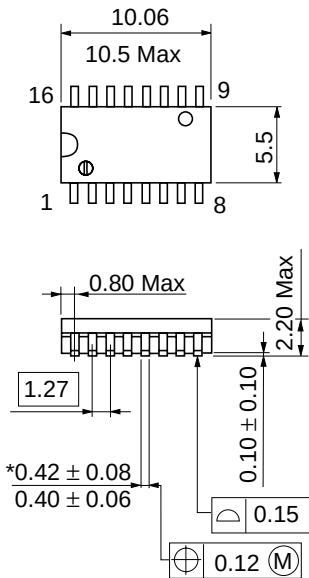
Item	Symbol	Ta = 25°C		Ta = −40 to +85°C		Unit	Test Conditions	
		Min	Typ	Max	Min	Max	V_{CC} (V)	
Input voltage	V_{IH}	2.0	—	—	2.0	—	V	4.5 to 5.5
	V_{IL}	—	—	0.8	—	0.8	V	4.5 to 5.5
Output voltage	V_{OH}	4.4	—	—	4.4	—	V	4.5 Vin = V_{IH} or V_{IL} $I_{OH} = -20 \mu A$
		4.18	—	—	4.13	—		4.5 $I_{OH} = -6 mA$
	V_{OL}	—	—	0.1	—	0.1	V	4.5 Vin = V_{IH} or V_{IL} $I_{OL} = 20 \mu A$
		—	—	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 supply 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}	—	14	25	—	31	ns	4.5
	t _{PLH}	—	11	25	—	31		4.5
Output enable time	t _{ZL}	—	18	30	—	39	ns	4.5
	t _{ZH}	—	14	30	—	39		4.5
Output disable time	t _{LZ}	—	17	30	—	39	ns	4.5
	t _{HZ}	—	16	30	—	39		4.5
Output rise/fall time	t _{TLH}	—	4	12	—	15	ns	4.5
	t _{THL}	—	4	12	—	15		4.5
Input capacitance	C _{in}	—	5	10	—	10	pF	—

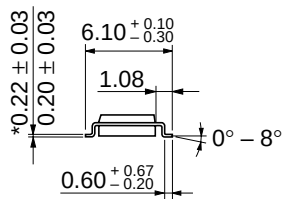
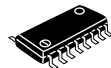
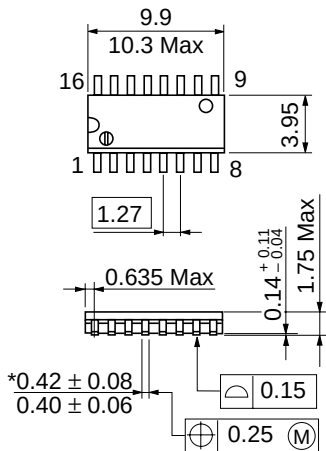


Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-16DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.24 g



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-16DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.15 g

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