

HD74HCT241

Octal Buffers/Line Drivers/Line Receivers
(with noninverted 3-state outputs)

HITACHI

ADE-205-551 (Z)
1st. Edition
Sep. 2000

Description

The HD74HCT241 is a noninverting buffer and has one active low enable and one active high enable. Each enable independently controls 4 buffers.

This 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) = 10 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: $1 \mu A$ max
- Low Quiescent Supply Current: I_{CC} (static) = $4 \mu A$ max ($T_a = 25^\circ C$)

Function Table

Inputs			Output
$1\bar{G}$	2G	A	Y
H	L	X	Z
L	H	H	H
L	H	L	L

H : High level

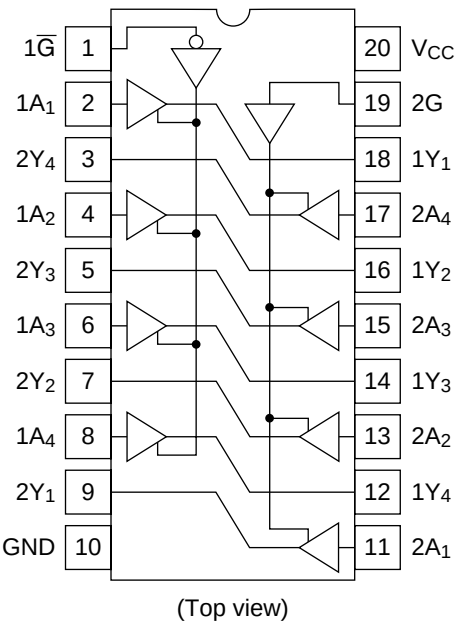
L : Low level

X : Irrelevant

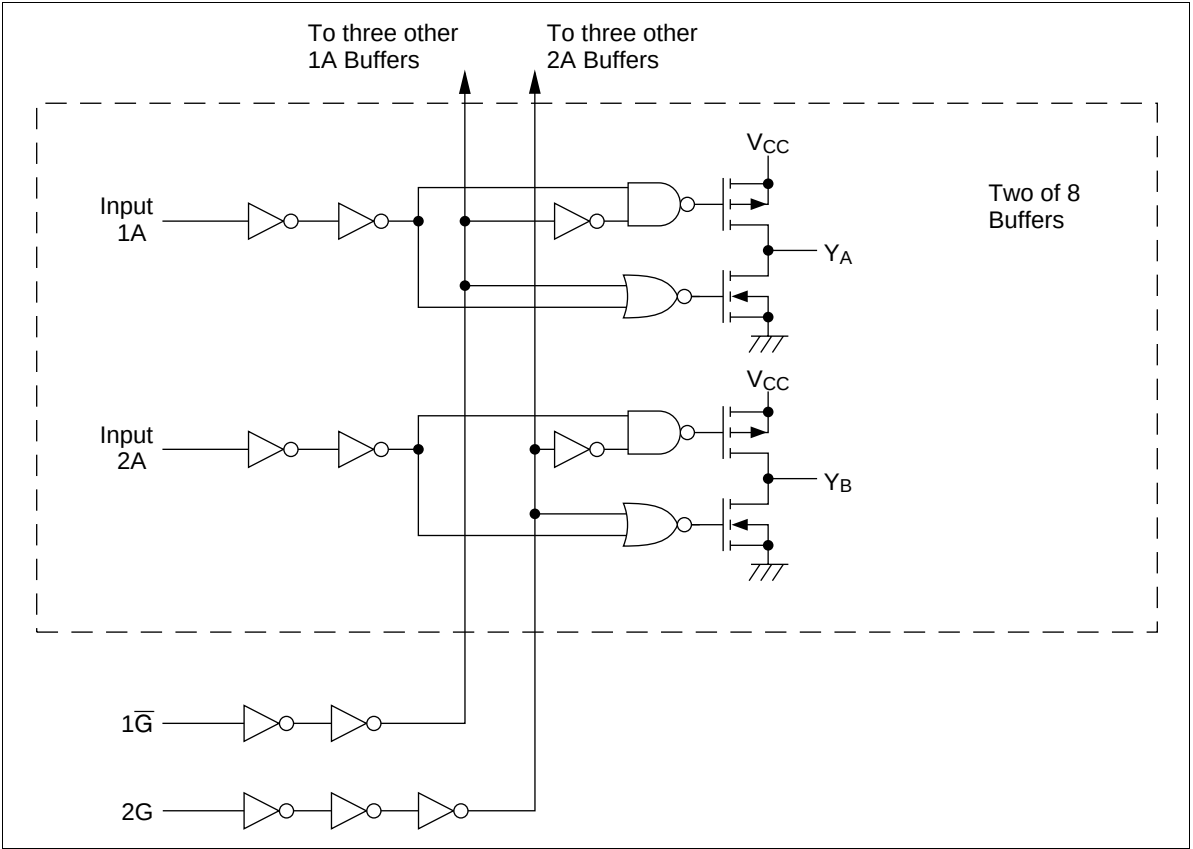
Z : Off (high impedance) state of a 3-state output

HD74HCT241

Pin Arrangement



Block 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

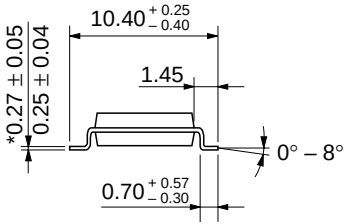
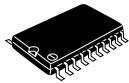
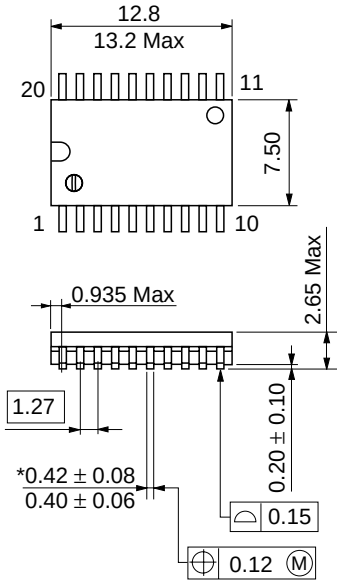
DC Characteristics

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 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}	—	11	20	—	25	ns	4.5	
	t _{PLH}	—	9	20	—	25		4.5	
Output enable time	t _{ZL}	—	14	30	—	38	ns	4.5	
	t _{ZH}	—	12	30	—	38		4.5	
Output disable time	t _{LZ}	—	13	30	—	38	ns	4.5	
	t _{HZ}	—	17	30	—	38		4.5	
Output rise/fall time	t _{TLH}	—	4	12	—	15	ns	4.5	
	t _{THL}	—	—	—	—	—		—	
Input capacitance	C _{in}	—	5	10	—	10	pF	—	

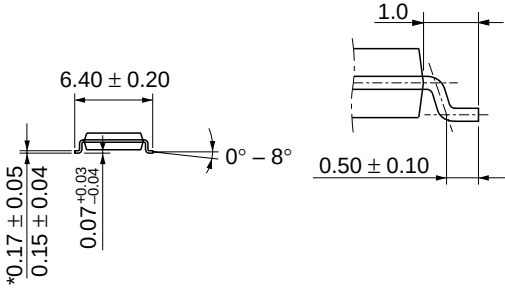
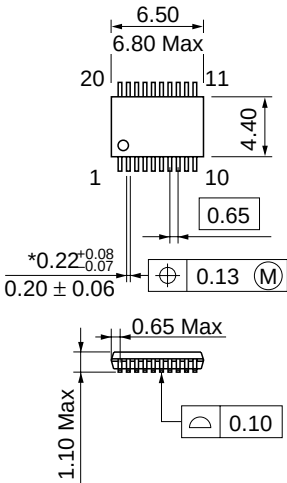
Unit: mm



*Dimension including the plating thickness
Base material dimension

Hitachi Code	FP-20DB
JEDEC	Conforms
EIAJ	—
Mass (reference value)	0.52 g

Unit: mm



*Dimension including the plating thickness
Base material dimension

Hitachi Code	TTP-20DA
JEDEC	—
EIAJ	—
Mass (reference value)	0.07 g

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