

HD74HCT240

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

HITACHI

ADE-205-550 (Z)
1st. Edition
Sep. 2000

Description

The HD74HCT240 is an inverting buffer and has two active low enables ($\overline{1G}$ and $2\overline{G}$). 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) = 11 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
$\overline{G}$	A	Y
H	X	Z
L	H	L
L	L	H

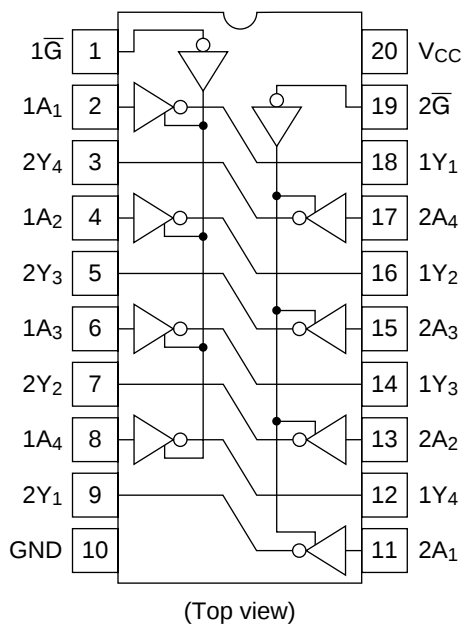
H : High level

L : Low level

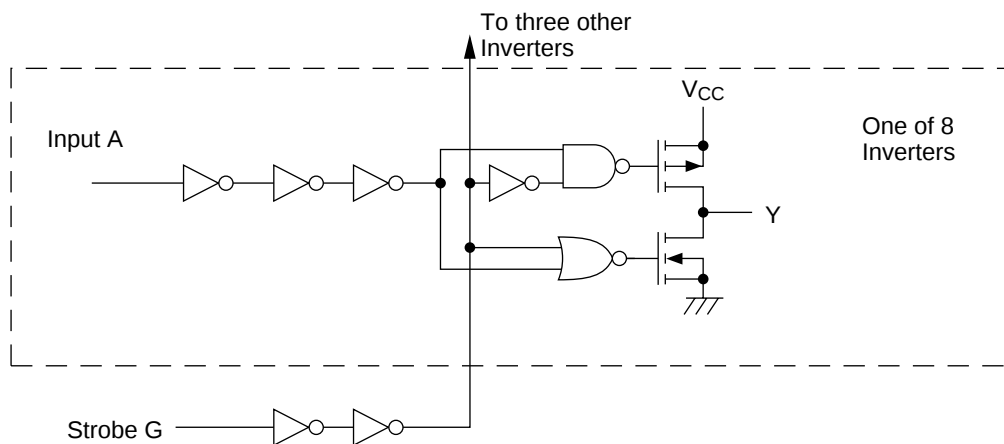
X : Irrelevant

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

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

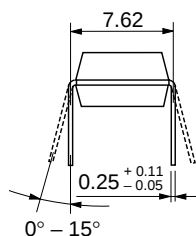
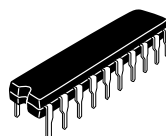
Item	Symbol	Ta = 25°C		Ta = −40 to +85°C		Unit	Test Conditions	
		Min	Typ	Max	Min		V_{CC} (V)	
Input voltage	V_{IH}	2.0	—	—	2.0	—	V	4.5 to 5.5
	V_{IL}	—	—	0.8	—	0.8	V	4.5 to 5.5
Output voltage	V_{OH}	4.4	—	—	4.4	—	V	4.5 Vin = V_{IH} or V_{IL} $I_{OH} = -20 \mu A$
		4.18	—	—	4.13	—		4.5 $I_{OH} = -6 mA$
	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 current	I_{CC}	—	—	4.0	—	40	μA	5.5 Vin = V_{CC} or GND, Iout = 0 μA

HD74HCT240

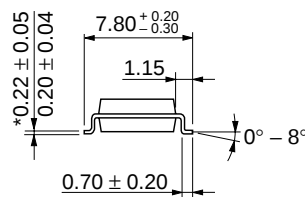
AC Characteristics (C_L = 50 pF, Input t_r = t_f = 6 ns)

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}	—	13	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}	—	14	30	—	38	ns	4.5
	t _{HZ}	—	18	30	—	38		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	—

The drawing shows the top and bottom views of the PCB assembly. The top view is a rectangle with overall dimensions of 24.50 by 7.00 Max. The mounting holes are spaced 2.54 apart, with a center-to-center distance of 25.40 Max. The bottom view shows the component footprint with a width of 6.30 and a length of 1.27 Max. The mounting holes are spaced 0.89 apart, with a center-to-center distance of 1.30. The component footprint has a width of 0.51 Min and a length of 2.54 Min. The mounting holes are spaced 0.48 ± 0.10 apart, with a center-to-center distance of 2.54 ± 0.25.



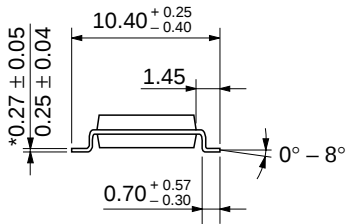
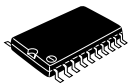
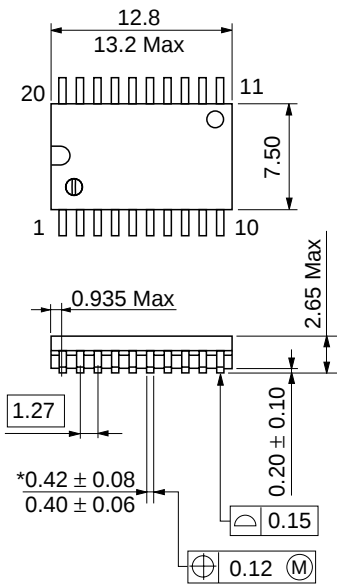
Hitachi Code	DP-20N
JEDEC	—
EIAJ	Conforms
Mass (reference value)	1.26 g



Hitachi Code	FP-20DA
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.31 g

$$\frac{\text{*Dimension including the plating thickness}}{\text{Base material dimension}}$$

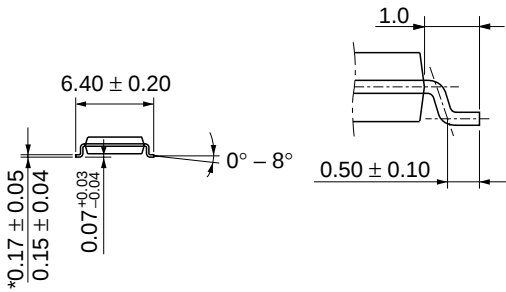
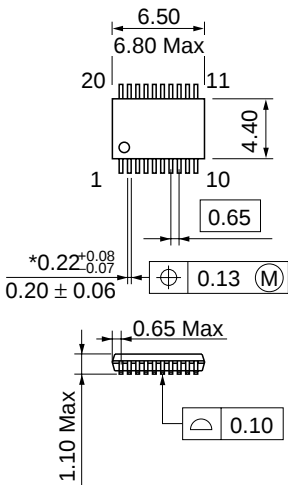
Unit: mm



*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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