

HD74HCT244

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

HITACHI

ADE-205-553 (Z)
1st. Edition
Sep. 2000

Description

The HD74HCT244 is a non-inverting buffer and has two active low enable ($\overline{1G}$ and $\overline{2G}$). 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 μ A max
- Low Quiescent Supply Current: I_{CC} (static) = 4 μ A max ($T_a = 25^\circ\text{C}$)

Function Table

Inputs		Output
\overline{G}	A	Y
H	X	Z
L	H	H
L	L	L

H : High level

L : Low level

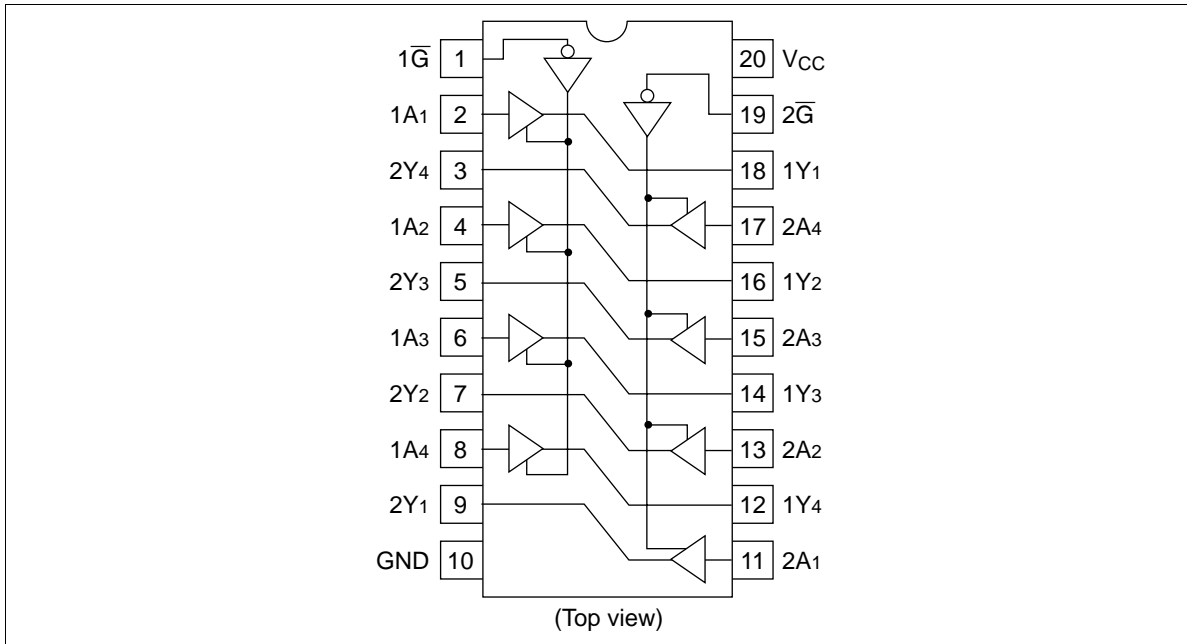
X : Irrelevant

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

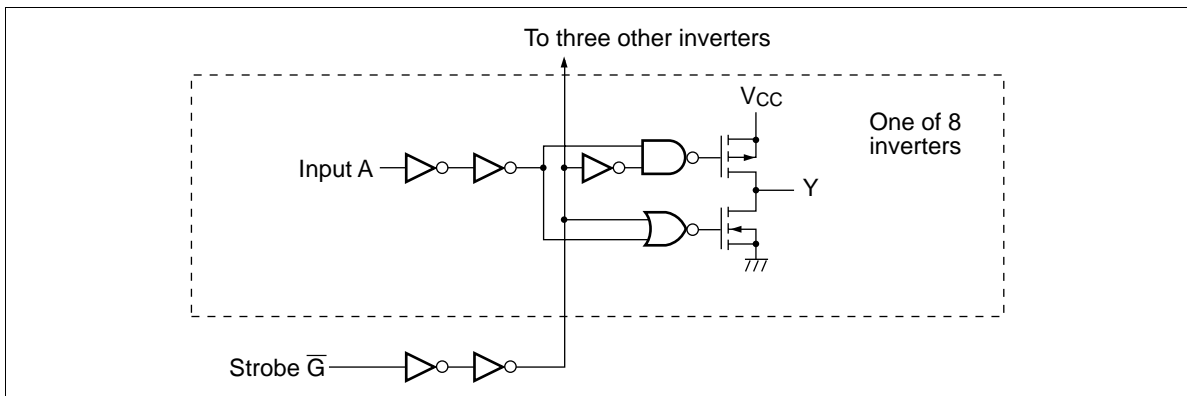


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Pin Arrangement



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} $I_{OH} = -20 \mu A$
		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



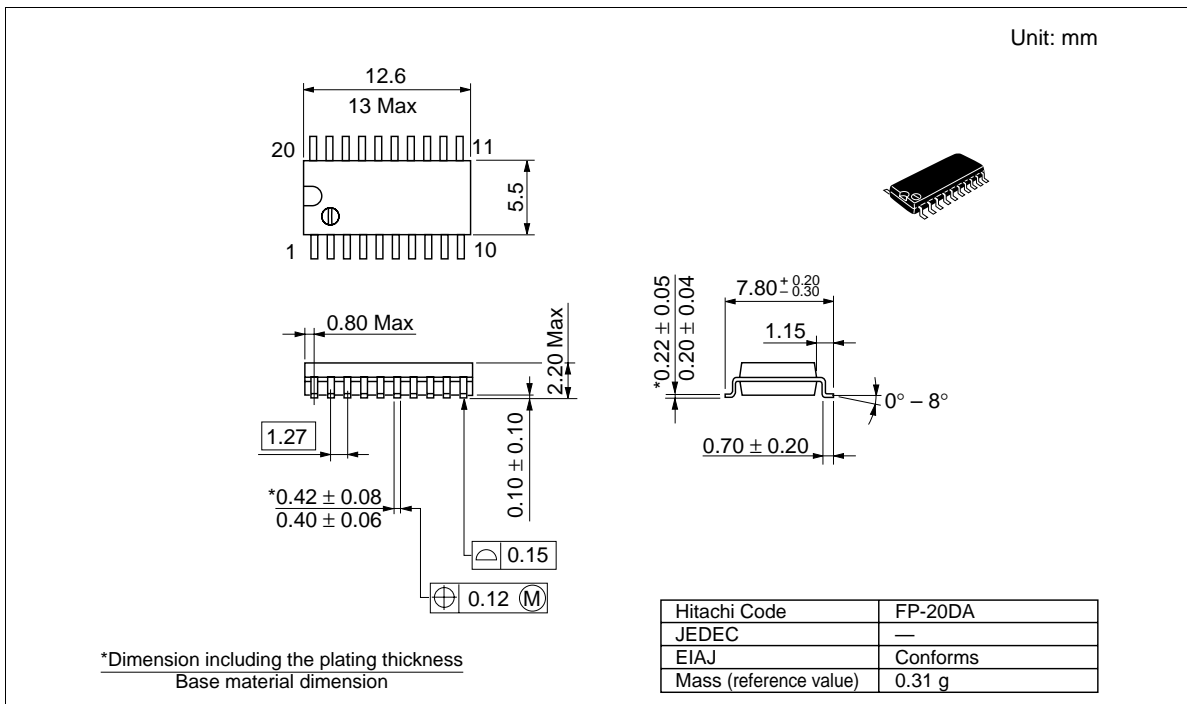
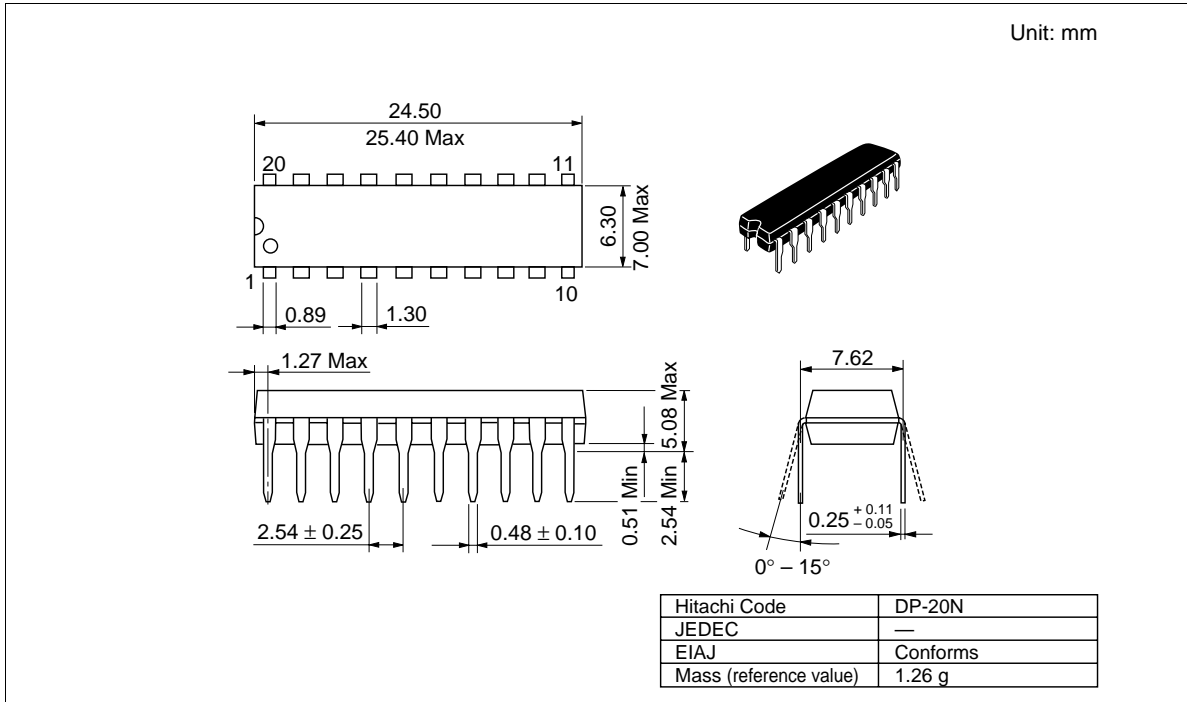
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AC Characteristics ($C_L = 50$ pF, Input $t_r = t_f = 6$ ns)

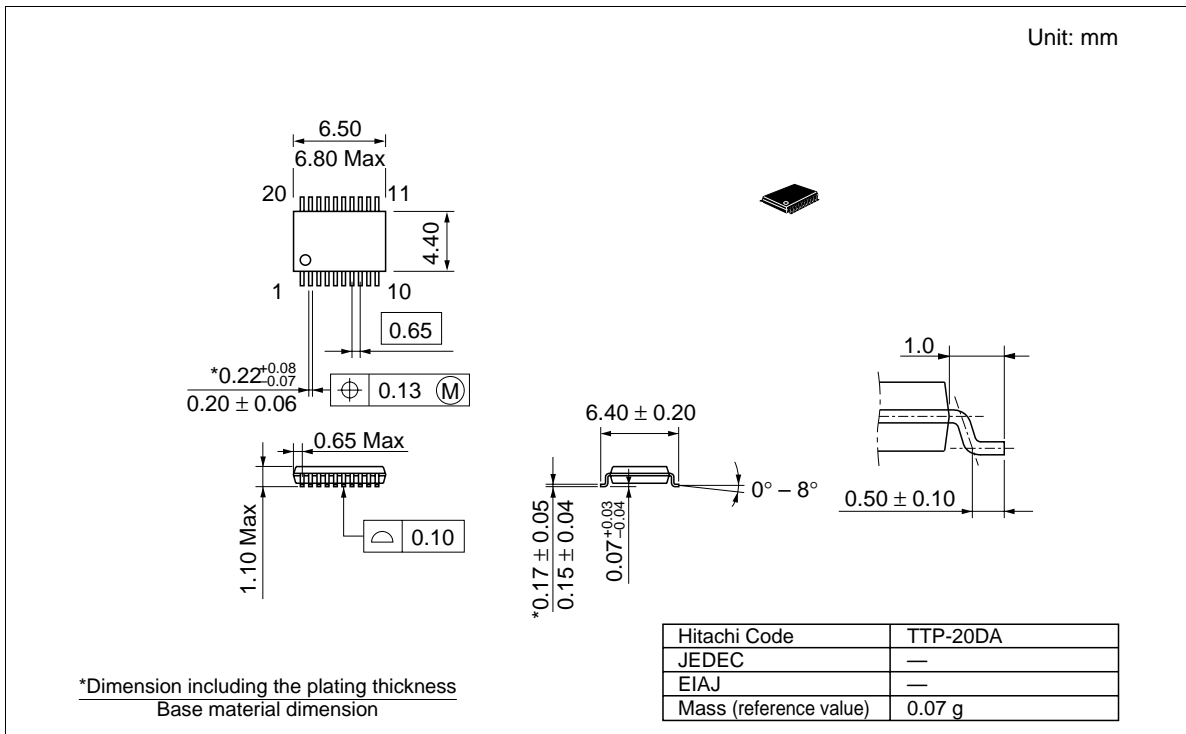
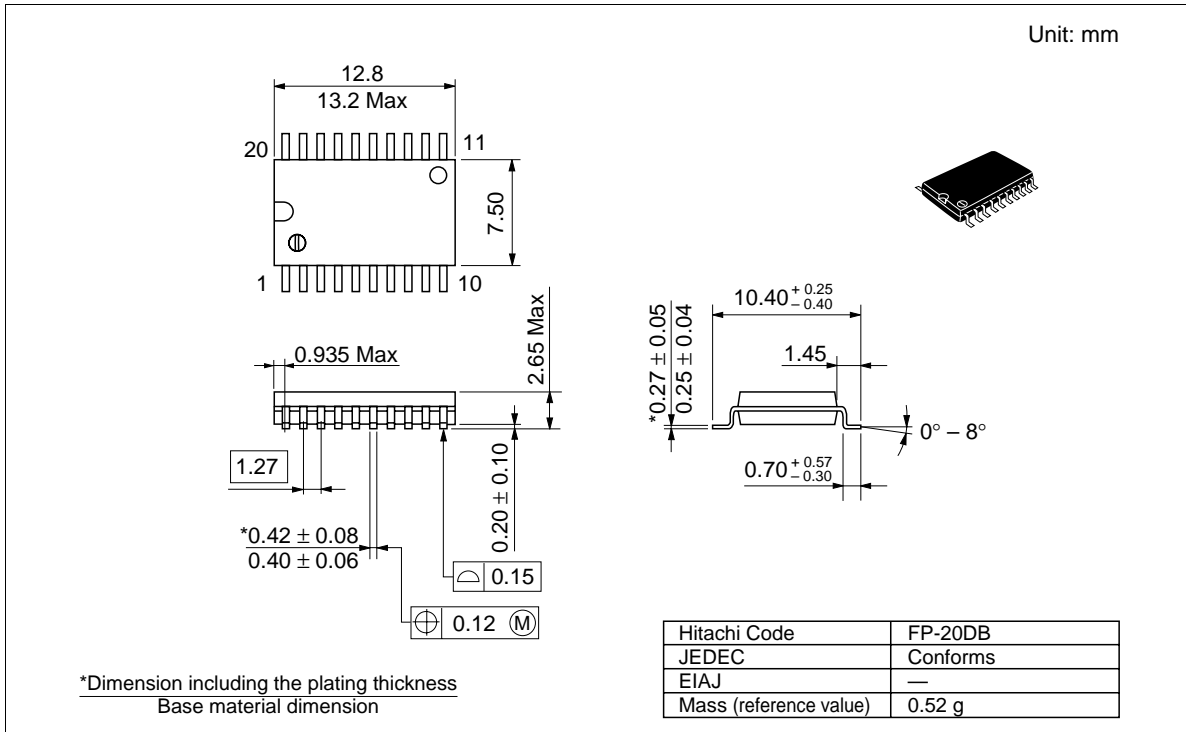
Item	Symbol	Ta = 25°C		Ta = -40 to +85°C		Unit	Test Conditions	
		Min	Typ	Max	Min		Max	V _{CC} (V)
Propagation delay	t_{PLH}	—	9	20	—	25	ns	4.5
time	t_{PHL}	—	11	20	—	25		4.5
Output enable	t_{ZL}	—	13	30	—	38	ns	4.5
time	t_{ZH}	—	12	30	—	38		4.5
Output disable	t_{LZ}	—	14	30	—	38	ns	4.5
time	t_{HZ}	—	17	30	—	38		4.5
Output rise/fall	t_{TLH}	—	4	12	—	15	ns	4.5
time	t_{THL}							
Input capacitance	C _{in}	—	5	10	—	10	pF	—



Package Dimensions



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