To all our customers

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Renesas Technology Home Page: http://www.renesas.com

Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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Keep safety first in your circuit designs!

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   Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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HD74HC05

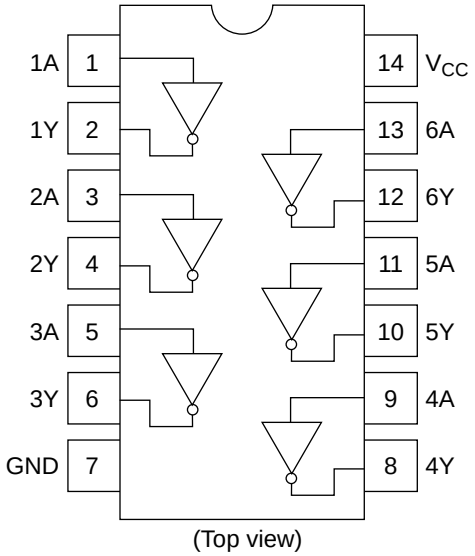
Hex Inverters (with Open Drain Outputs)

ADE-205-407 (Z)
1st. Edition
Sep. 2000

Features

- High Speed Operation: t_{pd} = 8 ns typ (C_L = 50 pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage: V_{CC} = 2 to 6 V
- Low Input Current: 1 μA max
- Low Quiescent Supply Current: I_{CC} (static) = 1 μA max (Ta = 25°C)

Pin Arrangement



(Top view)

DC Characteristics

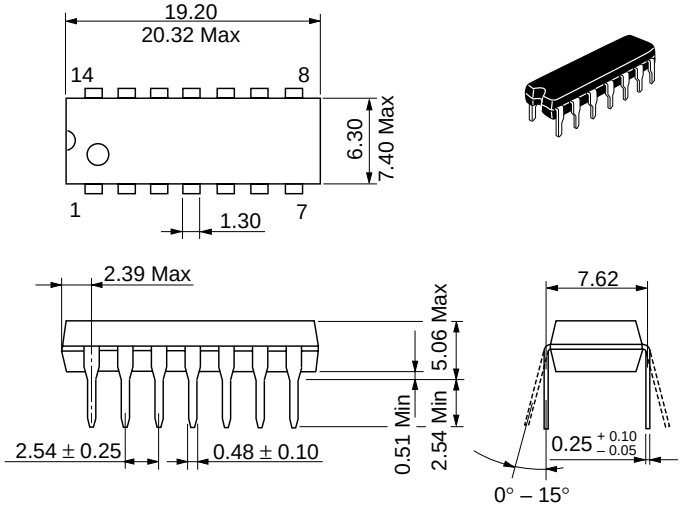
Item	Symbol	V_{CC} (V)	Ta = 25°C Min	Typ	Max	Ta = –40 to +85°C Min	Max	Unit	Test Conditions
Input voltage	V_{IH}	2.0	1.5	—	—	1.5	—	V	
		4.5	3.15	—	—	3.15	—		
		6.0	4.1	—	—	4.2	—		
	V_{IL}	2.0	—	—	0.5	—	0.5	V	
		4.5	—	—	1.35	—	1.35		
		6.0	—	—	1.8	—	1.8		
Off-state output current	Io (off)	6.0	—	—	±0.5	—	±5.0	µA	Vin = V_{IH} or V_{IL} Vout = V_{CC} or GND
Output voltage	V_{OL}	2.0	—	0.0	0.1	—	0.1	V	Vin = V_{IH} or V_{IL} I_{OL} = 20 µA
		4.5	—	0.0	0.1	—	0.1		
		6.0	—	0.0	0.1	—	0.1		
		4.5	—	—	0.26	—	0.33		I_{OL} = 4 mA
		6.0	—	—	0.26	—	0.33		I_{OL} = 5.2 mA
Input current	Iin	6.0	—	—	±0.1	—	±1.0	µA	Vin = V_{CC} or GND
Quiescent supply current	I_{CC}	6.0	—	—	1.0	—	10	µA	Vin = V_{CC} or GND, Iout = 0 µA

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

Item	Symbol	V_{CC} (V)	Ta = 25°C Min	Typ	Max	Ta = –40 to +85°C Min	Max	Unit	Test Conditions
Propagation delay time	t_{LZ}	2.0	—	—	90	—	115	ns	
		4.5	—	10	18	—	23		
		6.0	—	—	15	—	20		
	t_{ZL}	2.0	—	—	90	—	115	ns	
		4.5	—	6	18	—	23		
		6.0	—	—	15	—	20		
Output fall time	t_{THL}	2.0	—	—	75	—	95	ns	
		4.5	—	5	15	—	19		
		6.0	—	—	13	—	16		
Input capacitance	Cin	—	—	5	10	—	10	pF	

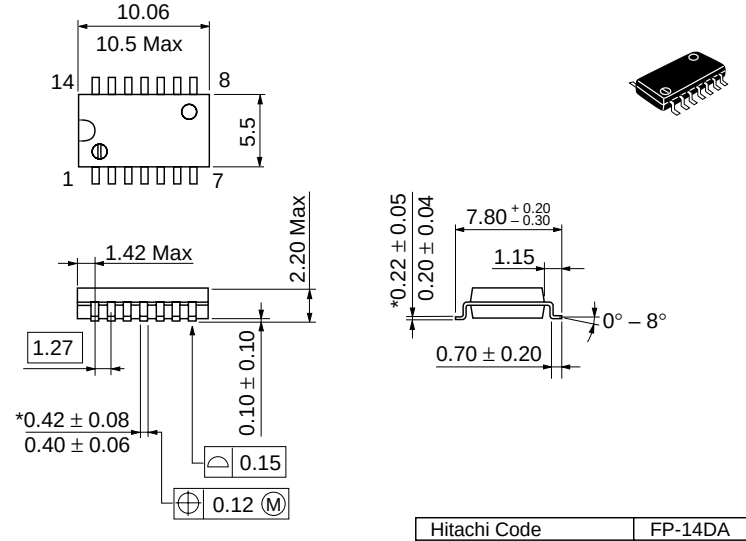
Package Dimensions

Unit: mm



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

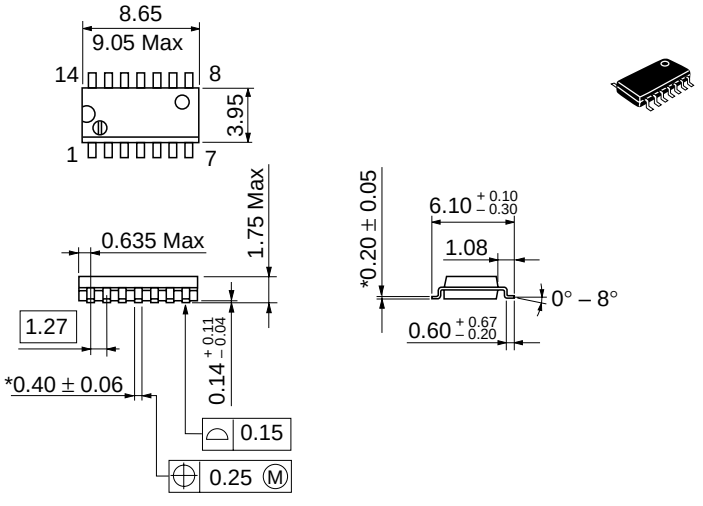
Unit: mm



*Dimension including the plating thickness
Base material dimension

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

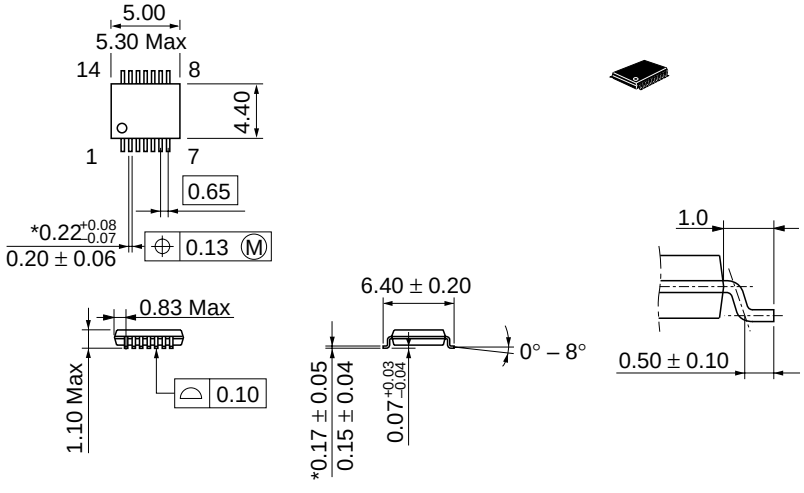
Unit: mm



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

*Pd plating

Unit: mm



Hitachi Code	TTP-14D
JEDEC	—
EIAJ	—
Mass (reference value)	0.05 g

*Dimension including the plating thickness
Base material dimension

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