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# HD74AC14

Hex Inverter Schmitt Trigger

# HITACHI

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## Description

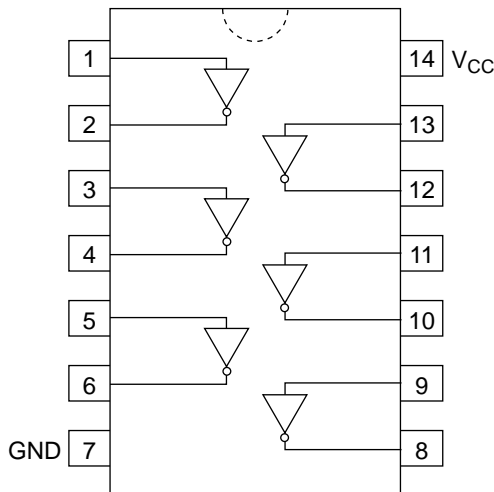
The HD74AC14 contains six logic inverters which accept standard CMOS input signals (TTL levels for HD74ACT14) and provide standard CMOS output levels. They are capable of transforming slowly changing input signals into sharply defined, jitter-free output signals. In addition, they have a greater noise margin than conventional inverters.

The HD74AC14 has hysteresis between the positive-going and negative-going input thresholds (typically 1.0 V) which is determined internally by transistor ratios and is essentially insensitive to temperature and supply voltage variations.

## Feature

- Outputs Source/Sink 24 mA

## Pin Arrangement



# HD74AC14

## Function Table

Input	Output
A	O
L	H
H	L

## DC Characteristics (unless otherwise specified)

Item	Symbol	V <sub>CC</sub> (V)	HD74AC14	HD74ACT14	Unit	Condition
Maximum quiescent supply current	I <sub>CC</sub>	40	40		μA	V <sub>IN</sub> = V <sub>CC</sub> or ground, V <sub>CC</sub> = 5.5 V, Ta = Wordt case
Maximum quiescent supply current	I <sub>CC</sub>	4.0	4.0		μA	V <sub>IN</sub> = V <sub>CC</sub> or ground, V <sub>CC</sub> = 5.5 V, Ta = 25°C
Maximum positive threshold	Vt <sup>+</sup>	3.0	2.2	2.0	V	Ta = Worst case
		4.5	3.2			
		5.5	3.9			
Minimum negative threshold	Vt <sup>-</sup>	3.0	0.5	0.8	V	Ta = Worst case
		4.5	0.9			
		5.5	1.1			
Maximum hysteresis	Vh (max)	3.0	1.2	1.2	V	Ta = Worst case
		4.5	1.4			
		5.5	1.6			
Minimum hysteresis	Vh (min)	3.0	0.3	0.4	V	Ta = Worst case
		4.5	0.4			
		5.5	0.5			

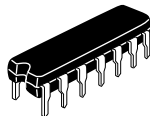
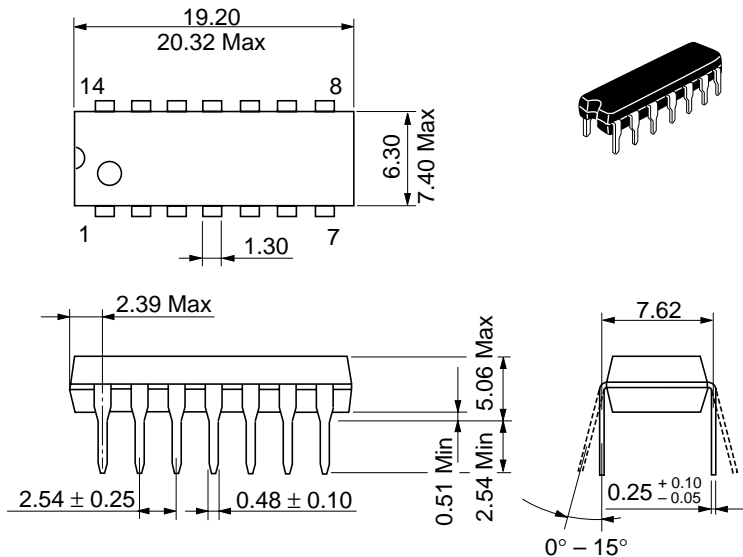
## AC Characteristics

Item	Symbol	$V_{CC} (V)^{*1}$	Ta = +25°C C <sub>L</sub> = 50 pF			Ta = −40°C to +85°C C <sub>L</sub> = 50 pF		Unit
			Min	Typ	Max	Min	Max	
Propagation delay	$t_{PLH}$	3.3	1.0	9.5	13.5	1.0	15.0	ns
		5.0	1.0	7.0	10.0	1.0	11.0	
Propagation delay	$t_{PHL}$	3.3	1.0	7.5	11.5	1.0	13.0	ns
		5.0	1.0	6.0	8.5	1.0	9.5	

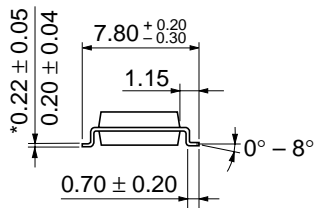
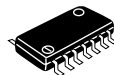
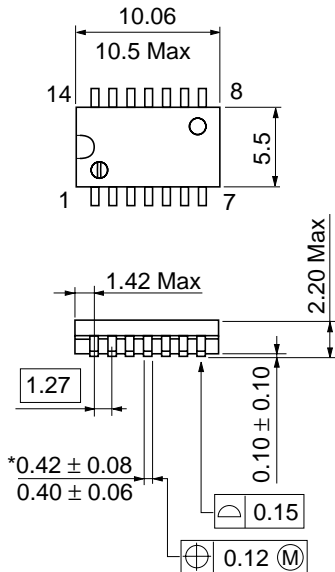
Note: 1. Voltage Range 3.3 is 3.3 V ± 0.3 V  
Voltage Range 5.0 is 5.0 V ± 0.5 V

## Capacitance

Item	Symbol	Typ	Unit	Condition
Input capacitance	C <sub>IN</sub>	4.5	pF	V <sub>CC</sub> = 5.5 V
Power dissipation capacitance	C <sub>PD</sub>	25.0	pF	V <sub>CC</sub> = 5.0 V

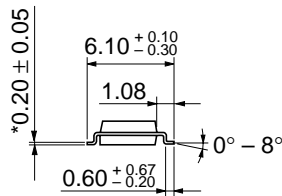
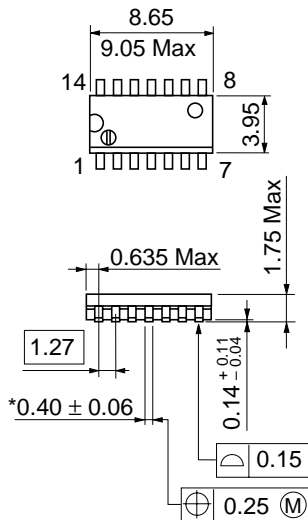


Hitachi Code	DP-14
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.97 g

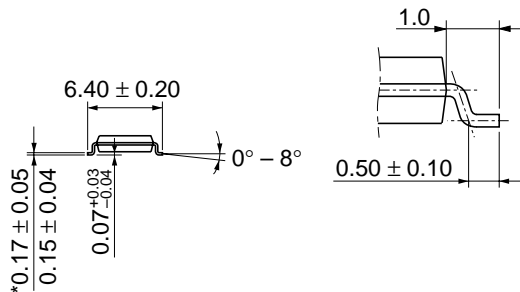
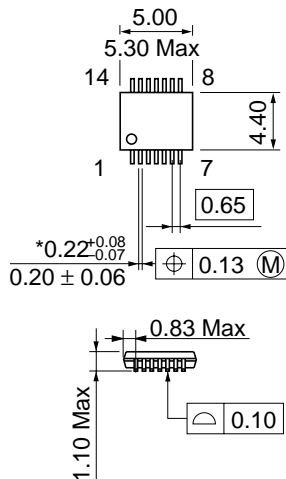


Hitachi Code	FP-14DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.23 g

\*Dimension including the plating thickness  
Base material dimension



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



\*Dimension including the plating thickness  
Base material dimension

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

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