

# HD74HC10

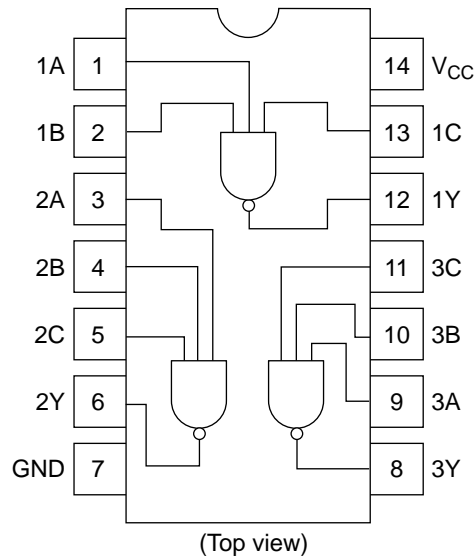
Triple 3-input NAND Gates

# HITACHI

## Features

- High Speed Operation:  $t_{pd} = 10.5$  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  $\mu$ A max
- Low Quiescent Supply Current:  $I_{CC}$  (static) = 1  $\mu$ A max ( $T_a = 25^\circ\text{C}$ )

## Pin Arrangement



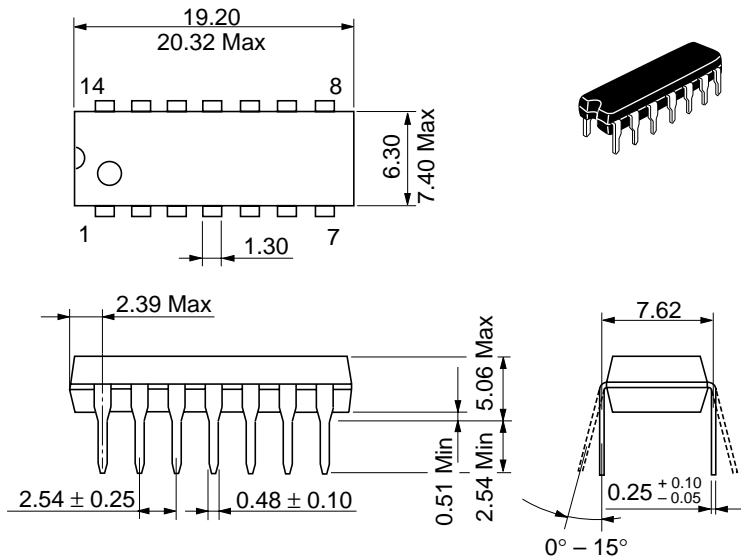
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## DC Characteristics

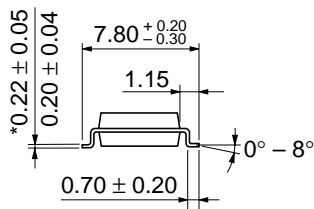
Item	Symbol	V <sub>CC</sub> (V)	Ta = 25°C			Ta = -40 to +85°C		Unit	Test Conditions	
			Min	Typ	Max	Min	Max			
Input voltage	V <sub>IH</sub>	2.0	1.5	—	—	1.5	—	V		
		4.5	3.15	—	—	3.15	—			
		6.0	4.2	—	—	4.2	—			
	V <sub>IL</sub>	2.0	—	—	0.5	—	0.5	V		
		4.5	—	—	1.35	—	1.35			
		6.0	—	—	1.8	—	1.8			
Output voltage	V <sub>OH</sub>	2.0	1.9	2.0	—	1.9	—	V	Vin = V <sub>IH</sub> or V <sub>IL</sub> I <sub>OH</sub> = -20 μA	
		4.5	4.4	4.5	—	4.4	—			
		6.0	5.9	6.0	—	5.9	—			
		4.5	4.18	—	—	4.13	—			I <sub>OH</sub> = -4 mA
		6.0	5.68	—	—	5.63	—			I <sub>OH</sub> = -5.2 mA
		6.0	—	0.0	0.1	—	0.1			V
	4.5	—	0.0	0.1	—	0.1				
	6.0	—	0.0	0.1	—	0.1				
	4.5	—	—	0.26	—	0.33	I <sub>OL</sub> = 4 mA			
	6.0	—	—	0.26	—	0.33	I <sub>OL</sub> = 5.2 mA			
Input current	I <sub>in</sub>	6.0	—	—	±0.1	—	±1.0	μA	Vin = V <sub>CC</sub> or GND	
Quiescent supply current	I <sub>CC</sub>	6.0	—	—	1.0	—	10	μA	Vin = V <sub>CC</sub> or GND, I <sub>out</sub> = 0 μA	

AC Characteristics ( $C_L = 50 \text{ pF}$ , Input  $t_r = t_f = 6 \text{ ns}$ )

Item	Symbol	$V_{CC}$ (V)	Ta = 25°C		Ta = -40 to +85°C		Unit	Test Conditions
			Min	Typ	Max	Min		
Propagation delay time	$t_{PLH}$	2.0	—	—	100	—	125	ns
		4.5	—	11	20	—	25	
		6.0	—	—	17	—	21	
	$t_{PHL}$	2.0	—	—	100	—	125	
		4.5	—	10	20	—	25	
		6.0	—	—	17	—	21	
Output rise time	$t_{TLH}$	2.0	—	—	75	—	95	
		4.5	—	5	15	—	19	
		6.0	—	—	13	—	16	
Output fall time	$t_{THL}$	2.0	—	—	75	—	95	
		4.5	—	5	15	—	19	
		6.0	—	—	13	—	16	
Input capacitance	$C_{in}$	—	—	5	10	—	10	pF



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

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