

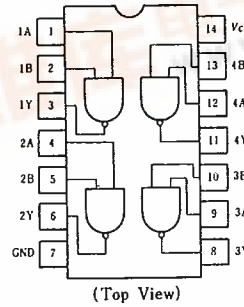
92D 10322 D T-43-21

# HD74HC00 ● Quad. 2-input NAND Gates

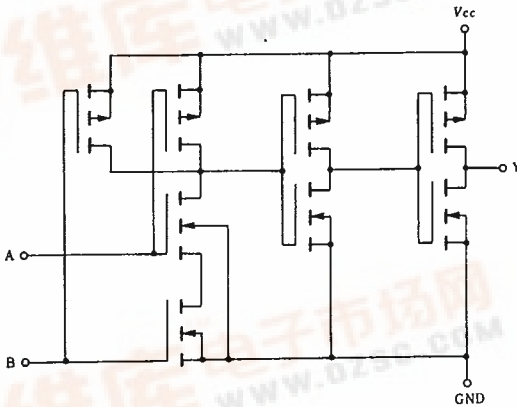
## FEATURES

- High Speed Operation:  $t_{pd} = 8.5\text{ns}$  typ. ( $C_L = 50\text{pF}$ )
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage:  $V_{CC} = 2\sim 6\text{V}$
- Low Input Current:  $1\mu\text{A}$  max.
- Low Quiescent Supply Current:  $I_{CC}(\text{static}) = 1\mu\text{A}$  max. ( $T_a = 25^\circ\text{C}$ )

## PIN ARRANGMENT



## CIRCUIT SCHEMATIC (1/4)



## DC CHARACTERISTICS

Item	Symbol	$V_{CC}(\text{V})$	Test Conditions	$T_a = 25^\circ\text{C}$			$T_a = -40 \sim +85^\circ\text{C}$		Unit	
				min	typ	max	min	max		
Input Voltage	$V_{IH}$	2.0		1.5	—	—	1.5	—	V	
		4.5		3.15	—	—	3.15	—		
		6.0		4.2	—	—	4.2	—		
	$V_{IL}$	2.0		—	—	0.5	—	0.5	V	
		4.5		—	—	1.35	—	1.35		
		6.0		—	—	1.8	—	1.8		
Output Voltage	$V_{OH}$	$V_{iA} = V_{IH} \text{ or } V_{IL}$	$I_{OH} = -20\mu\text{A}$	1.9	2.0	—	1.9	—	V	
				4.4	4.5	—	4.4	—		
				5.9	6.0	—	5.9	—		
			$I_{OH} = -4\text{mA}$	4.18	—	—	4.13	—		
				$I_{OH} = -5.2\text{mA}$	5.68	—	—	5.63		—
					—	—	—	—		—
	$V_{OL}$	$V_{iA} = V_{IH} \text{ or } V_{IL}$	$I_{OL} = 20\mu\text{A}$	—	0.0	0.1	—	0.1	V	
				—	0.0	0.1	—	0.1		
				—	0.0	0.1	—	0.1		
				—	—	0.26	—	0.33		
$I_{OL} = 4\text{mA}$	—	—	0.26	—	0.33					
	$I_{OL} = 5.2\text{mA}$	—	—	0.26	—	0.33				
Input Current	$I_{iA}$	6.0	$V_{iA} = V_{CC} \text{ or } \text{GND}$	—	—	$\pm 0.1$	—	$\pm 1.0$	$\mu\text{A}$	
Quiescent Supply Current	$I_{CC}$	6.0	$V_{iA} = V_{CC} \text{ or } \text{GND}, I_{iA} = 0\mu\text{A}$	—	—	1.0	—	10	$\mu\text{A}$	

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**HD74HC00**

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

Item	Symbol	$V_{CC}(V)$	Test Conditions	$T_a = -25^\circ\text{C}$			$T_a = -40 \sim +85^\circ\text{C}$		Unit
				min	typ	max	min	max	
Propagation Delay Time	$t_{PLH}$	2.0		—	—	90	—	115	ns
		4.5		—	9	18	—	23	
		6.0		—	—	15	—	20	
	$t_{PHL}$	2.0		—	—	90	—	115	ns
		4.5		—	8	18	—	23	
		6.0		—	—	15	—	20	
Output Rise Time	$t_{TLH}$	2.0	—	—	75	—	95	ns	
		4.5	—	7	15	—	19		
		6.0	—	—	13	—	16		
Output Fall Time	$t_{THL}$	2.0	—	—	75	—	95	ns	
		4.5	—	5	15	—	19		
		6.0	—	—	13	—	16		
Input Capacitance	$C_{in}$	—		—	5	10	—	10	pF

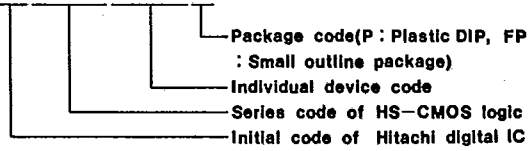
# PACKAGE INFORMATION

T-90-20

In the HD74HC series of HS-CMOS logic, either of plastic DIP and small outline packages can be selected.  
For your ordering, please refer to the following package code.

● Package code of HS-CMOS Logic

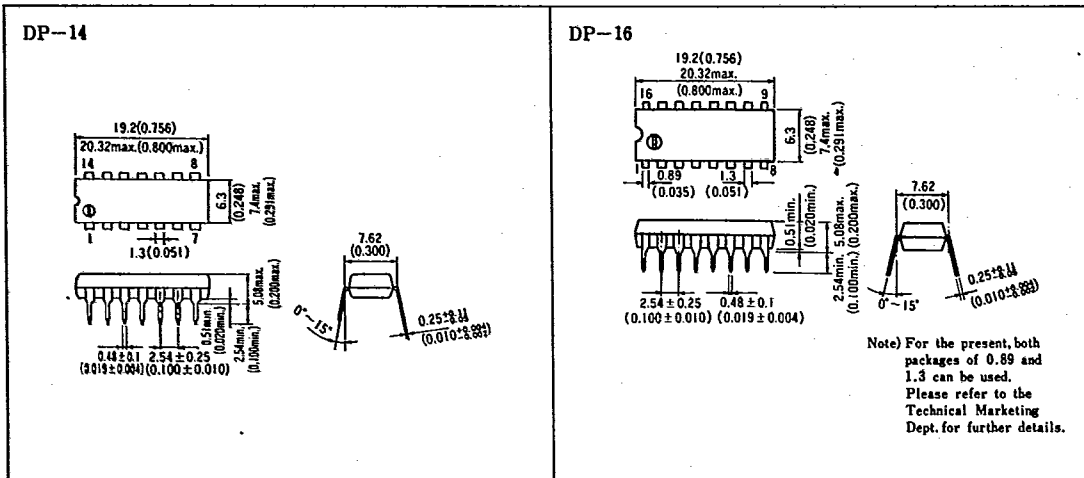
## HD74HC XXXXP



### ■ PLASTIC DIP PACKAGE [Unit: mm (inch), scale: 1/1]

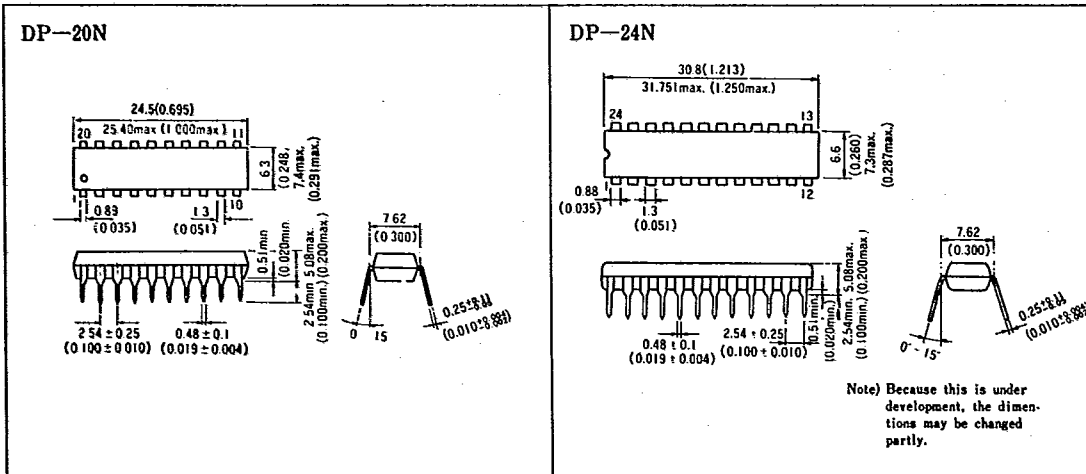
● 14-pin type

● 16-pin type



● 20-pin type

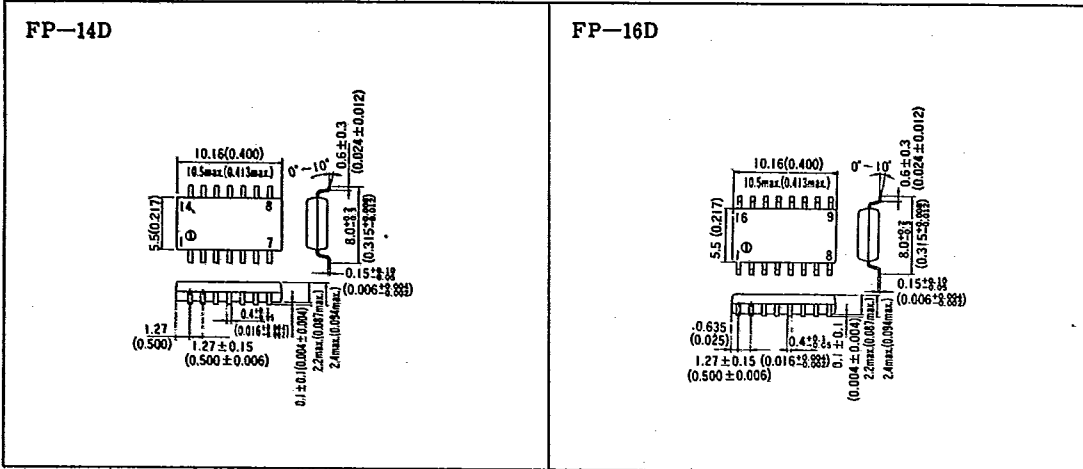
● 24-pin type



SMALL OUTLINE PACKAGE [Unit: mm (inch), scale: 1½]

●14-pin type

●16-pin type



●20-pin type

