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# HD74HC298

Quad. 2-input Multiplexers (with storage)

# HITACHI

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## Description

This circuit is controlled by the signals word select and clock. When the word select input is taken low word 1 ( $A_1$ ,  $B_1$ ,  $C_1$  and  $D_1$ ) is presented to the inputs of the flip-flops, and when word select is high word 2 ( $A_2$ ,  $B_2$ ,  $C_2$  and  $D_2$ ) is presented to the inputs of the flip-flops. The selected word is clocked to the output terminals on the negative edge of the clock pulse.

## Features

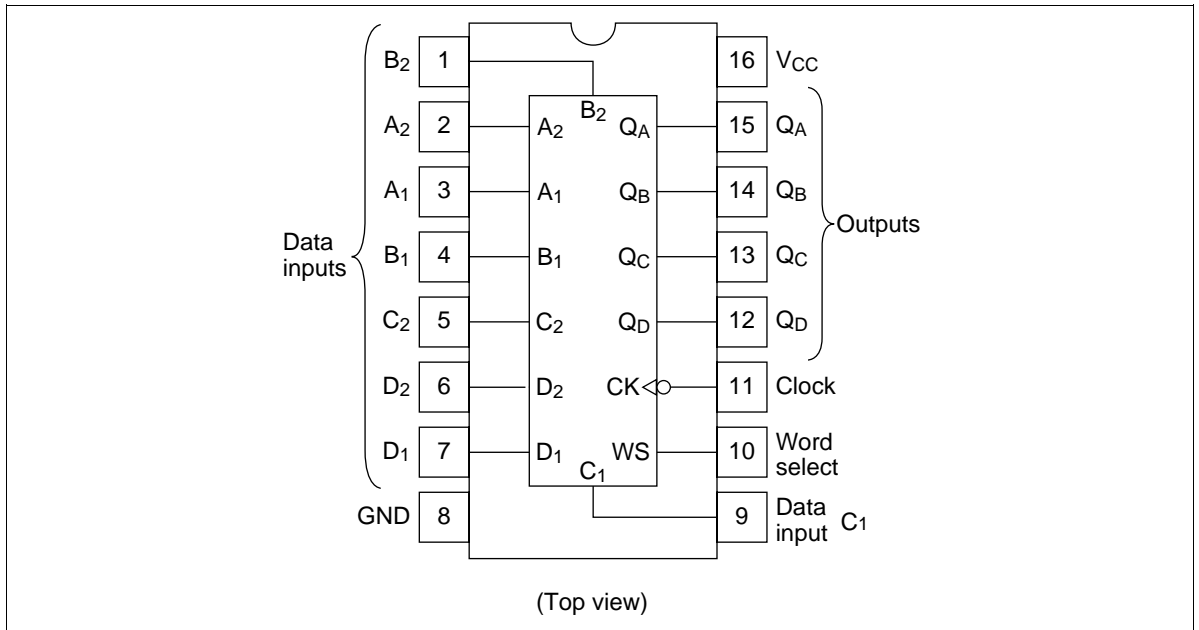
- High Speed Operation:  $t_{pd}$  (Clock to Q) = 19 ns typ ( $C_L = 50$  pF)
- High Output Current: Fanout of 10 LSTTL Loads
- Wide Operating Voltage:  $V_{CC} = 2$  to 6 V
- Low Input Current: 1  $\mu$ A max
- Low Quiescent Supply Current:  $I_{CC}$  (static) = 4  $\mu$ A max

## Function Table

Inputs		Outputs			
Word Select	Clock	$Q_A$	$Q_B$	$Q_C$	$Q_D$
L		$a_1$	$b_1$	$c_1$	$d_1$
H		$a_2$	$b_2$	$c_2$	$d_2$
X	H	$Q_{A0}$	$Q_{B0}$	$Q_{C0}$	$Q_{D0}$

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## Pin Arrangement



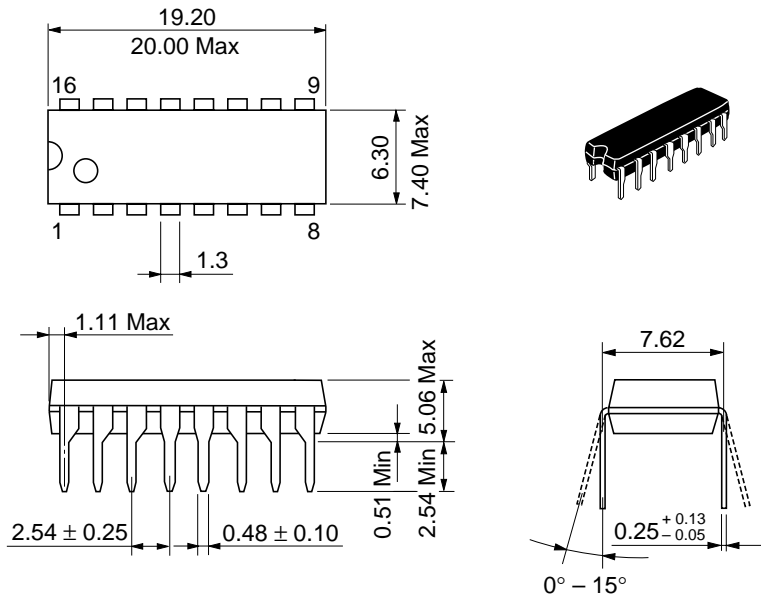
DC Characteristics

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	—	—	4.0	—	40	μA	Vin = V <sub>CC</sub> or GND, I <sub>out</sub> = 0 μA	

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

Item	Symbol	$V_{CC}$ (V)	$T_a = 25^\circ\text{C}$			$T_a = -40$ to $+85^\circ\text{C}$		Unit	Test Conditions
			Min	Typ	Max	Min	Max		
Propagation delay time	$t_{PLH}$	2.0	—	—	170	—	215	ns	Clock to Q
	$t_{PHL}$	4.5	—	19	34	—	43		
		6.0	—	—	29	—	37		
Pulse width	$t_w$	2.0	80	—	—	100	—	ns	Clock
		4.5	16	10	—	20	—		
		6.0	14	—	—	17	—		
Setup time	$t_{su}$	2.0	150	—	—	190	—	ns	
		4.5	30	16	—	38	—		
		6.0	26	—	—	33	—		
Hold time	$t_h$	2.0	5	—	—	5	—	ns	
		4.5	5	-5	—	5	—		
		6.0	5	—	—	5	—		
Output rise/fall time	$t_{TLH}$	2.0	—	—	75	—	95	ns	
	$t_{THL}$	4.5	—	5	15	—	19		
		6.0	—	—	13	—	16		
Input capacitance	$C_{in}$	—	—	5	10	—	10	pF	



Hitachi Code	DP-16
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.07 g



\*Dimension including the plating thickness  
Base material dimension

Hitachi Code	FP-16DA
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.24 g



\*Dimension including the plating thickness  
Base material dimension

Hitachi Code	FP-16DN
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.15 g

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