

---

# HD74HC298

Quad. 2-input Multiplexers (with storage)

# HITACHI

---



## 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

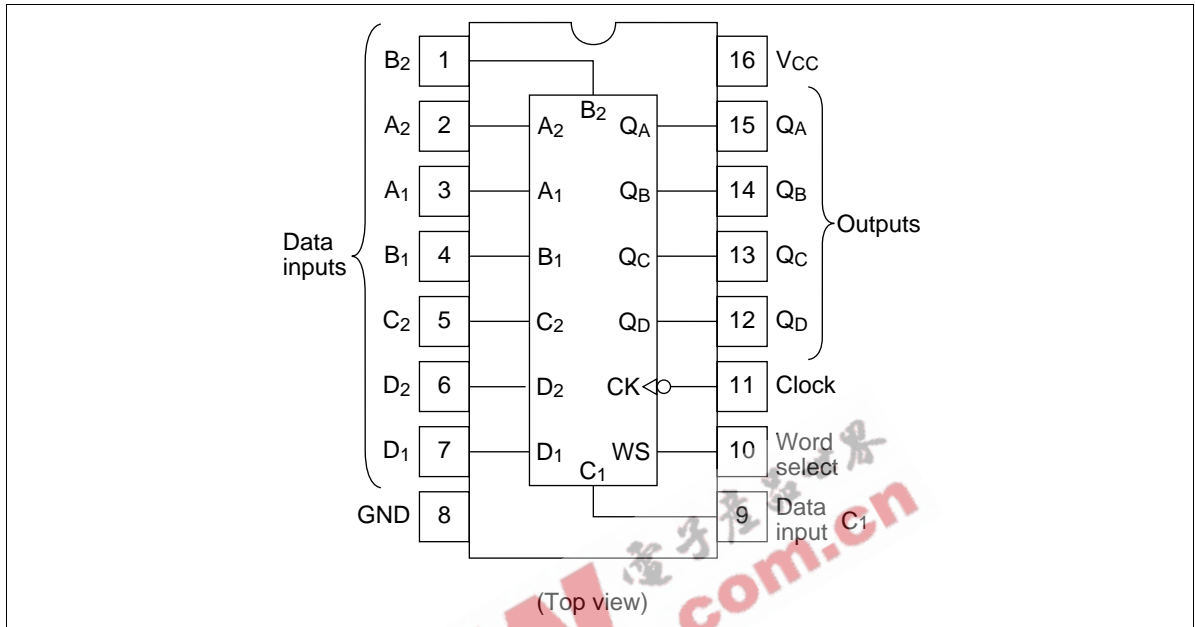
| Inputs      |   | Outputs  |          |          |          |
|-------------|---|----------|----------|----------|----------|
| Word Select | Clock   | $Q_A$    | $Q_B$    | $Q_C$    | $Q_D$    |
| L           |  | $a_1$    | $b_1$    | $c_1$    | $d_1$    |
| H           |  | $a_2$    | $b_2$    |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

---

## HD74HC298

---

### 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 |                              |                           |   |
|                | 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             |

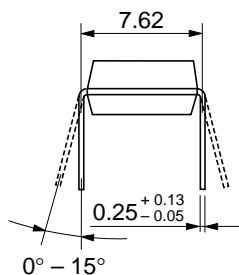
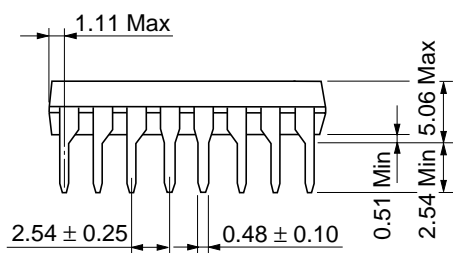
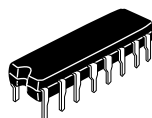
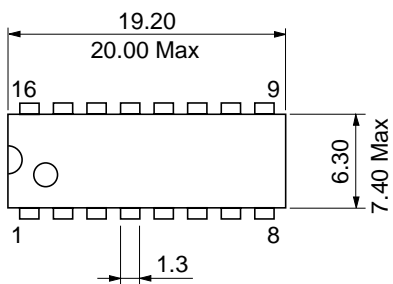
## HD74HC298

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

| Item                   | Symbol    | $V_{CC}$ (V) | Ta = 25°C |     |     | Ta = -40 to +85°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   |                 |

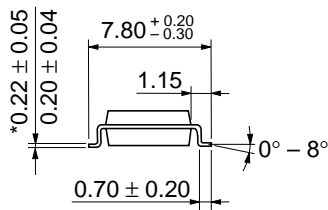
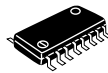
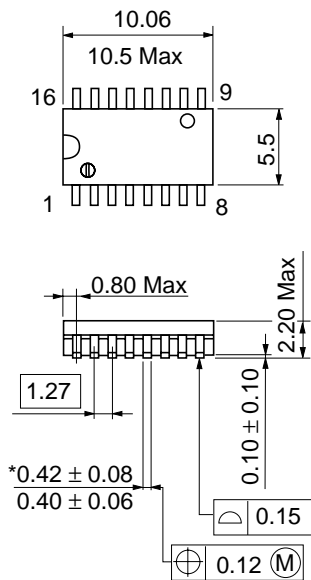
EEPW 电子产品世界 .com.cn

Unit: mm



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

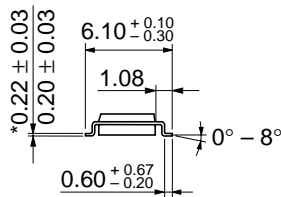
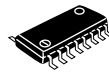
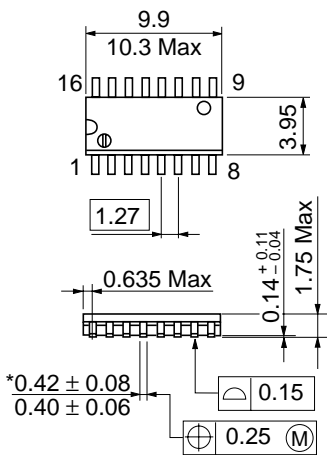
Unit: mm



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

\*Dimension including the plating thickness  
Base material dimension

Unit: mm



\*Dimension including the plating thickness  
Base material dimension

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