
HD74HC366

Hex Bus Drivers (with 3-state outputs)

HITACHI

Features

- High Speed Operation: t_{pd} (A to Y) = 9 ns typ ($C_L = 50$ pF)
- High Output Current: Fanout of 15 LSTTL Loads
- Wide Operating Voltage: $V_{CC} = 2$ to 6 V
- Low Input Current: 1 μ A max
- Low Quiescent Supply Current: I_{CC} (static) = 4 μ A max ($T_a = 25^\circ\text{C}$)

Function Table

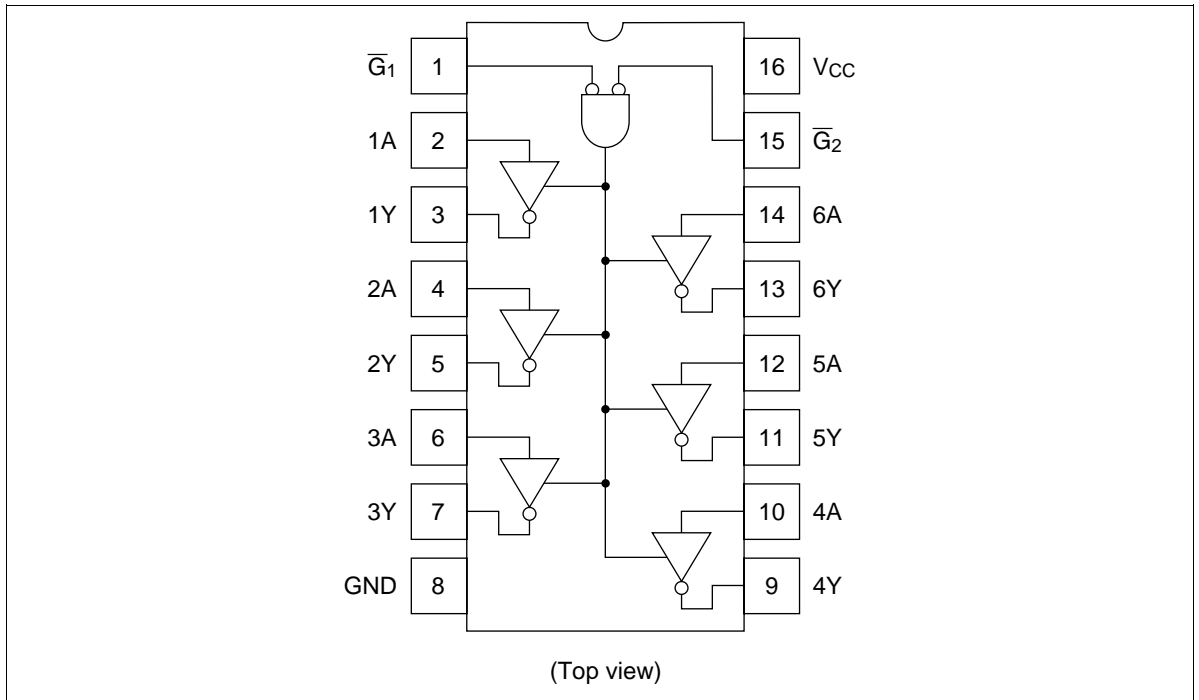
| Inputs | | | Output |
|------------------|------------------|---|--------|
| \overline{G}_1 | \overline{G}_2 | A | Y |
| H | X | X | Z |
| X | H | X | Z |
| L | L | H | L |
| L | L | L | H |

X : irrelevant

Z : Off (high-impedance) state of a 3-state output.

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Pin Arrangement



Absolute Maximum Ratings

| Item | Symbol | Rating | Unit |
|-------------------------------------|----------------------|------------------------|-------------|
| Supply voltage range | V_{CC} | -0.5 to +7.0 | V |
| Input voltage | V_{IN} | -0.5 to $V_{CC} + 0.5$ | V |
| Output voltage | V_{OUT} | -0.5 to $V_{CC} + 0.5$ | V |
| DC current drain per pin | I_{OUT} | ± 35 | mA |
| DC current drain per V_{CC} , GND | I_{CC} , I_{GND} | ± 75 | mA |
| DC input diode current | I_{IK} | ± 20 | mA |
| DC output diode current | I_{OK} | ± 20 | mA |
| Power dissipation per package | P_T | 500 | mW |
| Storage temperature | Tstg | -65 to +150 | $^{\circ}C$ |

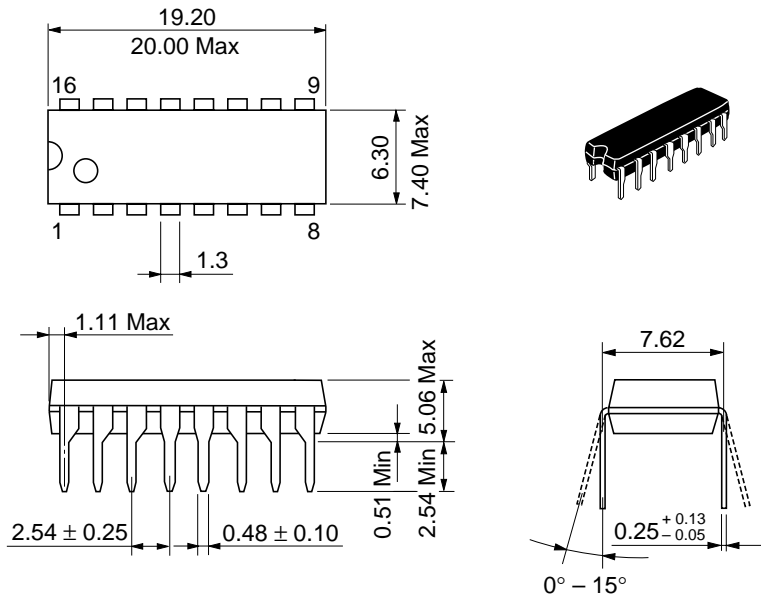
DC Characteristics

| Item | Symbol | V _{CC} (V) | Ta = 25°C | | | Ta = -40 to +85°C | | Unit | Test Conditions | |
|--------------------------|-----------------|---------------------|-----------|------|------|-------------------|--------------------------|------|---|---------------------------|
| | | | 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} | 2.0 | 1.9 | 2.0 | — | 1.9 | — | V | Vin = V _{IH} or V _{IL} I _{OH} = -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 _{OH} = -6 mA |
| | | 6.0 | 5.68 | — | — | 5.63 | — | | | I _{OH} = -7.8 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 _{OL} = 6 mA | | | |
| | 6.0 | — | — | 0.26 | — | 0.33 | I _{OL} = 7.8 mA | | | |
| Off-state output current | I _{OZ} | 6.0 | — | — | ±0.5 | — | ±5.0 | μA | Vin = V _{IH} or V _{IL} , Vout = V _{CC} or GND | |
| Input current | I _{in} | 6.0 | — | — | ±0.1 | — | ±1.0 | μA | Vin = V _{CC} or GND | |
| Quiescent supply current | I _{CC} | 6.0 | — | — | 4.0 | — | 40 | μA | Vin = V _{CC} or GND, Iout = 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 | — | — | 95 | — | 120 | ns | |
| | t_{PHL} | 4.5 | — | 9 | 19 | — | 24 | | |
| | | 6.0 | — | — | 16 | — | 20 | | |
| Output enable time | t_{ZH} | 2.0 | — | — | 220 | — | 275 | ns | |
| | t_{ZL} | 4.5 | — | 13 | 44 | — | 55 | | |
| | | 6.0 | — | — | 37 | — | 47 | | |
| Output disable time | t_{HZ} | 2.0 | — | — | 220 | — | 275 | ns | |
| | t_{LZ} | 4.5 | — | 15 | 44 | — | 55 | | |
| | | 6.0 | — | — | 37 | — | 47 | | |
| Output rise/fall time | t_{TLH} | 2.0 | — | — | 60 | — | 75 | ns | |
| | t_{THL} | 4.5 | — | 4 | 12 | — | 15 | | |
| | | 6.0 | — | — | 10 | — | 13 | | |
| 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-16DN |
| JEDEC | Conforms |
| EIAJ | Conforms |
| Weight (reference value) | 0.15 g |

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