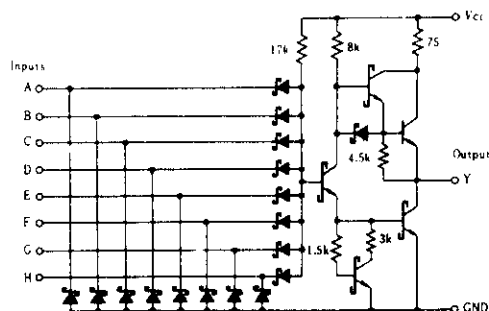
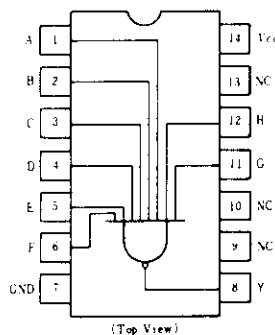


# HD74LS30 ● 8-input Positive NAND Gate

## ■ CIRCUIT SCHEMATIC



## ■ PIN ARRANGEMENT



## ■ ELECTRICAL CHARACTERISTICS ( $T_a = -20 \sim +75^\circ\text{C}$ )

| Item                         | Symbol    | Test Conditions                                                               | min | typ* | max  | Unit          |
|------------------------------|-----------|-------------------------------------------------------------------------------|-----|------|------|---------------|
| Input voltage                | $V_{IH}$  |                                                                               | 2.0 | —    | —    | V             |
|                              | $V_{IL}$  |                                                                               | —   | —    | 0.8  | V             |
| Output voltage               | $V_{OH}$  | $V_{CC} = 4.75\text{V}$ , $V_{IL} = 0.8\text{V}$ , $I_{OH} = -400\mu\text{A}$ | 2.7 | —    | —    | V             |
|                              | $V_{OL}$  | $V_{CC} = 4.75\text{V}$ , $V_{IH} = 2\text{V}$ , $I_{OL} = 8\text{mA}$        | —   | —    | 0.5  | V             |
|                              |           | $I_{OL} = 4\text{mA}$                                                         | —   | —    | 0.4  |               |
| Input current                | $I_{IH}$  | $V_{CC} = 5.25\text{V}$ , $V_I = 2.7\text{V}$                                 | —   | —    | 20   | $\mu\text{A}$ |
|                              | $I_{IL}$  | $V_{CC} = 5.25\text{V}$ , $V_I = 0.4\text{V}$                                 | —   | —    | -0.4 | mA            |
|                              | $I_I$     | $V_{CC} = 5.25\text{V}$ , $V_I = 7\text{V}$                                   | —   | —    | 0.1  | mA            |
| Short-circuit output current | $I_{OS}$  | $V_{CC} = 5.25\text{V}$                                                       | -20 | —    | -100 | mA            |
| Supply current               | $I_{CCH}$ | $V_{CC} = 5.25\text{V}$                                                       | —   | 0.35 | 0.5  | mA            |
|                              | $I_{CCL}$ |                                                                               | —   | 0.6  | 1.1  |               |
| Input clamp voltage          | $V_{IK}$  | $V_{CC} = 4.75\text{V}$ , $I_{IN} = -18\text{mA}$                             | —   | —    | -1.5 | V             |

\*  $V_{CC} = 5\text{V}$ ,  $T_a = 25^\circ\text{C}$

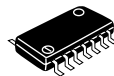
## ■ SWITCHING CHARACTERISTICS ( $V_{CC} = 5\text{V}$ , $T_a = 25^\circ\text{C}$ )

| Item                   | Symbol    | Test Conditions                               | min | typ | max | Unit |
|------------------------|-----------|-----------------------------------------------|-----|-----|-----|------|
| Propagation delay time | $t_{PLH}$ | $C_L = 15\text{pF}$ , $R_L = 2\text{k}\Omega$ | —   | 8   | 15  | ns   |
|                        | $t_{PHL}$ |                                               | —   | 13  | 20  |      |

Note) Refer to Test Circuit and Waveform of the Common Item

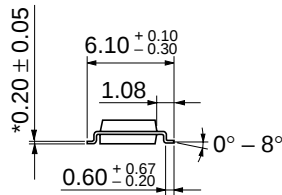


|                          |          |
|--------------------------|----------|
| Hitachi Code             | DP-14    |
| JEDEC                    | Conforms |
| EIAJ                     | Conforms |
| Weight (reference value) | 0.97 g   |



|                          |          |
|--------------------------|----------|
| 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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