

Tying the $\mathrm{A}>\mathrm{B}$ output from one device into an A input on another device and the $\mathrm{A}<\mathrm{B}$ output into the corresponding $B$ input permits easy expansion.
The A4 and B4 inputs are the most significant inputs and A0, B0 the least significant. Thus if A4 is HIGH and B4 is LOW, the $A>B$ output will be HIGH regardless of all other inputs except $\overline{\mathrm{E}}$.

## Logic Diagram



Absolute Maximum Ratings（Note 1）

| Supply Voltage | 7 V |
| :--- | ---: |
| Input Voltage | 5.5 V |
| Operating Free Air Temperature Range | $0^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |

Operating Free Air Temperature Range $\quad 0^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$
Storage Temperature Range $\quad-65^{\circ} \mathrm{C}$ to $+150^{\circ} \mathrm{C}$

Note 1：The＂Absolute Maximum Ratings＂are those values beyond which the safety of the device cannot be guaranteed．The device should not be operated at these limits．The parametric values defined in the Electrical Characteristics tables are not guaranteed at the absolute maximum ratings． The＂Recommended Operating Conditions＂table will define the conditions for actual device operation

Recommended Operating Conditions

| Symbol | Parameter | Min | Nom | Max | Units |
| :--- | :--- | :---: | :---: | :---: | :---: |
| $\mathrm{V}_{\mathrm{CC}}$ | Supply Voltage | 4.75 | 5 | 5.25 | V |
| $\mathrm{~V}_{\mathrm{IH}}$ | HIGH Level Input Voltage | 2 |  |  | V |
| $\mathrm{~V}_{\mathrm{IL}}$ | LOW Level Input Voltage |  |  | 0.8 | V |
| $\mathrm{I}_{\mathrm{OH}}$ | HIGH Level Output Current |  |  | -0.8 | mA |
| $\mathrm{I}_{\mathrm{OL}}$ | LOW Level Output Current |  |  | 16 | mA |
| $\mathrm{~T}_{\mathrm{A}}$ | Free Air Operating Temperature | 0 |  | 70 | ${ }^{\circ} \mathrm{C}$ |

Electrical Characteristics
Over recommended operating free air temperature range（unless otherwise noted）

| Symbol | Parameter | Conditions | Min | Typ （Note 2） | Max | Units |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{V}_{1}$ | Input Clamp Voltage | $\mathrm{V}_{\mathrm{CC}}=\mathrm{Min}, \mathrm{I}_{\mathrm{I}}=-12 \mathrm{~mA}$ |  |  | －1．5 | V |
| $\mathrm{V}_{\mathrm{OH}}$ | HIGH Level Output Voltage | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=\mathrm{Min}, \mathrm{I}_{\mathrm{OH}}=\mathrm{Max} \\ & \mathrm{~V}_{\mathrm{IL}}=\mathrm{Max} \end{aligned}$ | 2.4 | 3.4 |  | V |
| $\mathrm{V}_{\mathrm{OL}}$ | LOW Level Output Voltage | $\begin{aligned} & \mathrm{V}_{\mathrm{CC}}=\mathrm{Min}, \mathrm{I}_{\mathrm{OL}}=\mathrm{Max} \\ & \mathrm{~V}_{\mathrm{IH}}=\mathrm{Min} \end{aligned}$ |  | 0.2 | 0.4 | V |
| $I_{1}$ | Input Current＠Max Input Voltage | $\mathrm{V}_{\mathrm{CC}}=\mathrm{Max}, \mathrm{V}_{\mathrm{I}}=5.5 \mathrm{~V}$ |  |  | 1 | mA |
| $\mathrm{I}_{\mathrm{IH}}$ | HIGH Level Input Current | $\mathrm{V}_{\mathrm{CC}}=\mathrm{Max}, \mathrm{V}_{\mathrm{I}}=2.4 \mathrm{~V}$ |  |  | 80 | $\mu \mathrm{A}$ |
| $\mathrm{I}_{\mathrm{IL}}$ | LOW Level Input Current | $\mathrm{V}_{\text {CC }}=\mathrm{Max}, \mathrm{V}_{1}=0.4 \mathrm{~V}$ |  |  | －3．2 | mA |
| los | Short Circuit Output Current | $\mathrm{V}_{\mathrm{CC}}=\mathrm{Max}$（Note 3） | －20 |  | －70 | mA |
| $\mathrm{I}_{\mathrm{CC}}$ | Supply Current | $\mathrm{V}_{\mathrm{CC}}=\mathrm{Max}$ |  |  | 81 | mA |

Note 2：All typicals are at $\mathrm{V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ ．
Note 3：Not more than one output should be shorted at a time．

## Switching Characteristics

$\mathrm{V}_{\mathrm{CC}}=+5.0 \mathrm{~V}, \mathrm{~T}_{\mathrm{A}}=+25^{\circ} \mathrm{C}$

| Symbol | Parameter | $\mathrm{C}_{\mathrm{L}}=15 \mathrm{pF}$ |  | Units |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Min | Max |  |
| $\overline{t_{\text {PLH }}}$ <br> $t_{\text {PHL }}$ | Propagation Delay <br> $\bar{E}$ to $A=B$ |  | $\begin{aligned} & 14 \\ & 14 \end{aligned}$ | ns |
| $\begin{aligned} & \overline{t_{\text {PLH }}} \\ & \mathrm{t}_{\text {PHL }} \end{aligned}$ | Propagation Delay <br> $A_{n}, B_{n}$ to $A>B$ |  | $\begin{aligned} & 25 \\ & 22 \end{aligned}$ | ns |
| $\begin{aligned} & \hline \mathrm{t}_{\mathrm{PLH}} \\ & \mathrm{t}_{\text {PHL }} \end{aligned}$ | Propagation Delay $A_{n}, B_{n} \text { to } A<B$ |  | $\begin{aligned} & 26 \\ & 21 \end{aligned}$ | ns |
| tpLH <br> $\mathrm{t}_{\mathrm{PHL}}$ | Propagation Delay $A_{n}, B_{n} \text { to } A=B$ |  | $\begin{aligned} & 30 \\ & 32 \end{aligned}$ | ns |

Physical Dimensions inches (millimeters) unless otherwise noted


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