

# DATA SHEET

For a complete data sheet, please also download:

- The IC04 LOCMOS HE4000B Logic Family Specifications HEF, HEC
- The IC04 LOCMOS HE4000B Logic Package Outlines/Information HEF, HEC

## **HEF4075B** **gates** Triple 3-input OR gate

Product specification  
File under Integrated Circuits, IC04

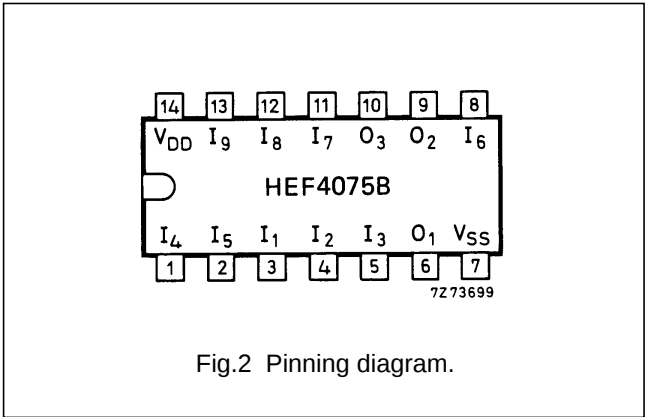
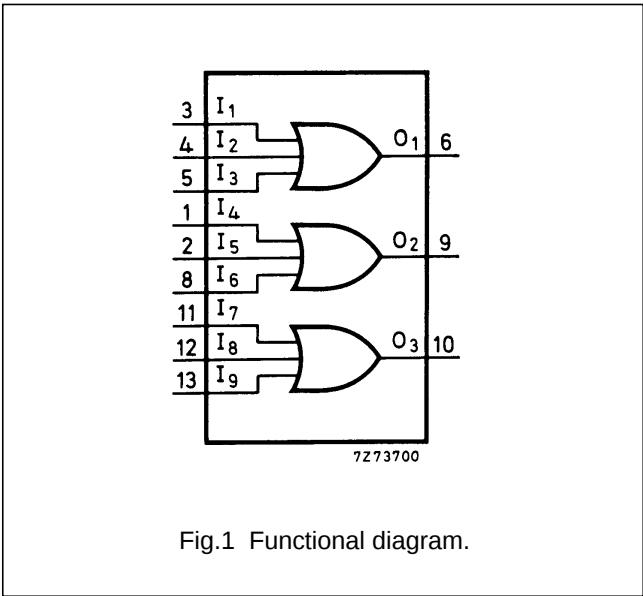
January 1995

Triple 3-input OR gate

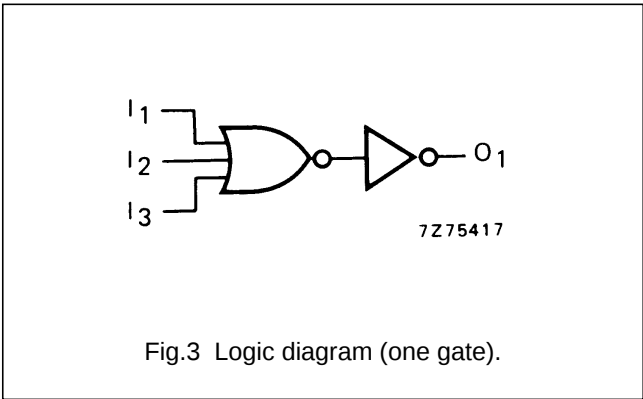
HEF4075B  
gates

DESCRIPTION

The HEF4075B provides the positive triple 3-input OR function. The outputs are fully buffered for highest noise immunity and pattern insensitivity of output impedance.



- HEF4075BP(N): 14-lead DIL; plastic (SOT27-1)
- HEF4075BD(F): 14-lead DIL; ceramic (cerdip) (SOT73)
- HEF4075BT(D): 14-lead SO; plastic (SOT108-1)
- ( ): Package Designator North America



FAMILY DATA, I<sub>DD</sub> LIMITS category GATES

See Family Specifications

## Triple 3-input OR gate

HEF4075B  
gates

## AC CHARACTERISTICS

 $V_{SS} = 0 \text{ V}$ ;  $T_{amb} = 25 \text{ }^{\circ}\text{C}$ ;  $C_L = 50 \text{ pF}$ ; input transition times  $\leq 20 \text{ ns}$ 

|                                                            | $V_{DD}$<br>V | SYMBOL    | TYP. | MAX. |    | TYPICAL EXTRAPOLATION<br>FORMULA |
|------------------------------------------------------------|---------------|-----------|------|------|----|----------------------------------|
| Propagation delays<br>$I_n \rightarrow O_n$<br>HIGH to LOW | 5             | $t_{PHL}$ | 65   | 130  | ns | 38 ns + (0,55 ns/pF) $C_L$       |
|                                                            | 10            |           | 30   | 60   | ns | 19 ns + (0,23 ns/pF) $C_L$       |
|                                                            | 15            |           | 20   | 40   | ns | 12 ns + (0,16 ns/pF) $C_L$       |
|                                                            | 5             | $t_{PLH}$ | 65   | 130  | ns | 38 ns + (0,55 ns/pF) $C_L$       |
|                                                            | 10            |           | 30   | 60   | ns | 19 ns + (0,23 ns/pF) $C_L$       |
|                                                            | 15            |           | 25   | 50   | ns | 17 ns + (0,16 ns/pF) $C_L$       |
| Output transition times<br>HIGH to LOW                     | 5             | $t_{THL}$ | 60   | 120  | ns | 10 ns + (1,0 ns/pF) $C_L$        |
|                                                            | 10            |           | 30   | 60   | ns | 9 ns + (0,42 ns/pF) $C_L$        |
|                                                            | 15            |           | 20   | 40   | ns | 6 ns + (0,28 ns/pF) $C_L$        |
|                                                            | 5             | $t_{TLH}$ | 60   | 120  | ns | 10 ns + (1,0 ns/pF) $C_L$        |
|                                                            | 10            |           | 30   | 60   | ns | 9 ns + (0,42 ns/pF) $C_L$        |
|                                                            | 15            |           | 20   | 40   | ns | 6 ns + (0,28 ns/pF) $C_L$        |

|                                                 | $V_{DD}$<br>V | TYPICAL FORMULA FOR P ( $\mu\text{W}$ )        |                                                                                                                                                                         |
|-------------------------------------------------|---------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dynamic power<br>dissipation per<br>package (P) | 5             | $750 f_i + \sum (f_o C_L) \times V_{DD}^2$     | where<br>$f_i$ = input freq. (MHz)<br>$f_o$ = output freq. (MHz)<br>$C_L$ = load capacitance (pF)<br>$\sum (f_o C_L)$ = sum of outputs<br>$V_{DD}$ = supply voltage (V) |
|                                                 | 10            | $3\,600 f_i + \sum (f_o C_L) \times V_{DD}^2$  |                                                                                                                                                                         |
|                                                 | 15            | $11\,200 f_i + \sum (f_o C_L) \times V_{DD}^2$ |                                                                                                                                                                         |