

# 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

## **HEF4068B** **gates** **8-input NAND gate**

Product specification  
File under Integrated Circuits, IC04

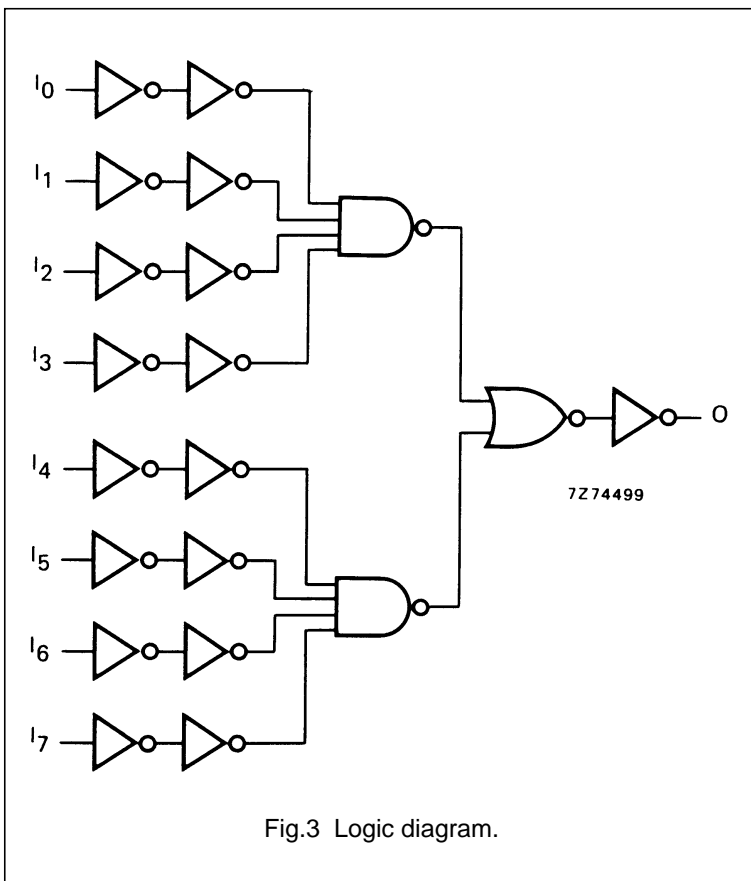
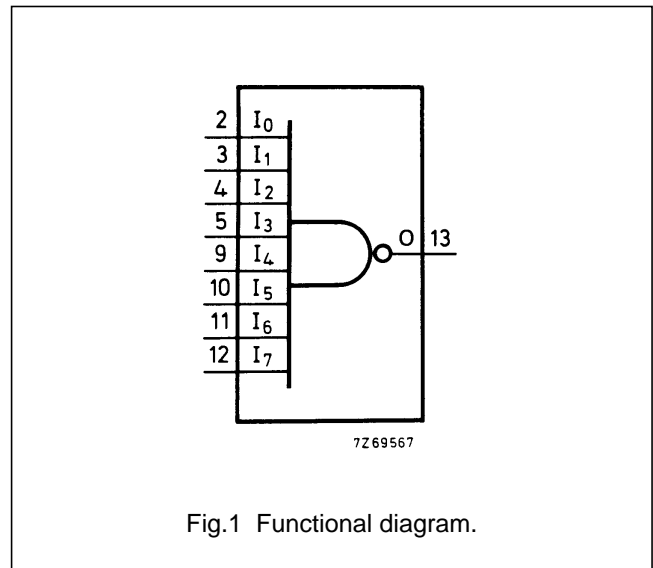
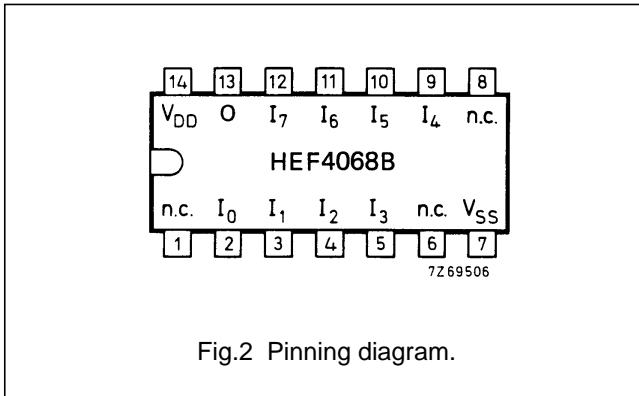
January 1995

# 8-input NAND gate

# HEF4068B gates

### DESCRIPTION

The HEF4068B provides the 8-input NAND function. The outputs are fully buffered for highest noise immunity and pattern insensitivity of output impedance.



- HEF4068BP(N): 14-lead DIL; plastic (SOT27-1)
- HEF4068BD(F): 14-lead DIL; ceramic (cerdip) (SOT73)
- HEF4068BT(D): 14-lead SO; plastic (SOT108-1)
- ( ): Package Designator North America

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

See Family Specifications

## 8-input NAND gate

HEF4068B  
gates**AC CHARACTERISTICS** $V_{SS} = 0 \text{ V}$ ;  $T_{amb} = 25 \text{ }^\circ\text{C}$ ;  $C_L = 50 \text{ pF}$ ; input transition times  $\leq 20 \text{ ns}$ 

	$V_{DD}$ V	SYMBOL	TYP.	MAX.		TYPICAL EXTRAPOLATION FORMULA
Propagation delays $I_n \rightarrow O$	5	$t_{PHL}$	95	195	ns	$68 \text{ ns} + (0,55 \text{ ns/pF}) C_L$
			40	85	ns	$29 \text{ ns} + (0,23 \text{ ns/pF}) C_L$
			30	65	ns	$22 \text{ ns} + (0,16 \text{ ns/pF}) C_L$
	10	$t_{PLH}$	80	165	ns	$53 \text{ ns} + (0,55 \text{ ns/pF}) C_L$
			35	70	ns	$24 \text{ ns} + (0,23 \text{ ns/pF}) C_L$
			30	60	ns	$22 \text{ ns} + (0,16 \text{ ns/pF}) C_L$
Output transition times	5	$t_{THL}$	60	120	ns	$10 \text{ ns} + (1,0 \text{ ns/pF}) C_L$
			30	60	ns	$9 \text{ ns} + (0,42 \text{ ns/pF}) C_L$
			20	40	ns	$6 \text{ ns} + (0,28 \text{ ns/pF}) C_L$
	10	$t_{TLH}$	60	120	ns	$10 \text{ ns} + (1,0 \text{ ns/pF}) C_L$
			30	60	ns	$9 \text{ ns} + (0,42 \text{ ns/pF}) C_L$
			20	40	ns	$6 \text{ ns} + (0,28 \text{ ns/pF}) C_L$

	$V_{DD}$ V	TYPICAL FORMULA FOR P ( $\mu\text{W}$ )	
Dynamic power dissipation per package (P)	5	$700 f_i + \sum(f_o C_L) \times V_{DD}^2$	where $f_i$ = input freq. (MHz) $f_o$ = output freq. (MHz) $C_L$ = load capacitance (pF) $\sum(f_o C_L)$ = sum of outputs $V_{DD}$ = supply voltage (V)
	10	$2900 f_i + \sum(f_o C_L) \times V_{DD}^2$	
	15	$7200 f_i + \sum(f_o C_L) \times V_{DD}^2$	