

INTEGRATED CIRCUITS

AG

Electrónica S.A. de C.V.

HEF4001B

gates

Quadruple 2-input NOR gate

Product specification
File under Integrated Circuits, IC04

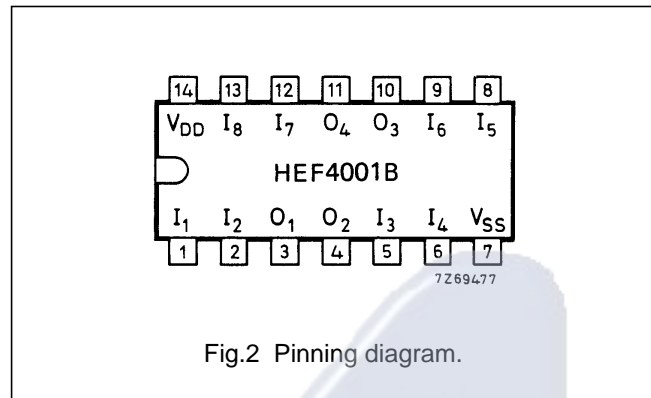
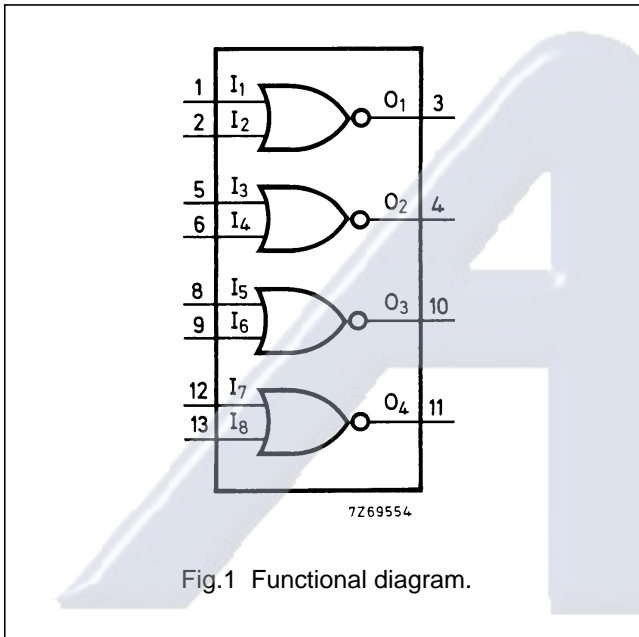
January 1995

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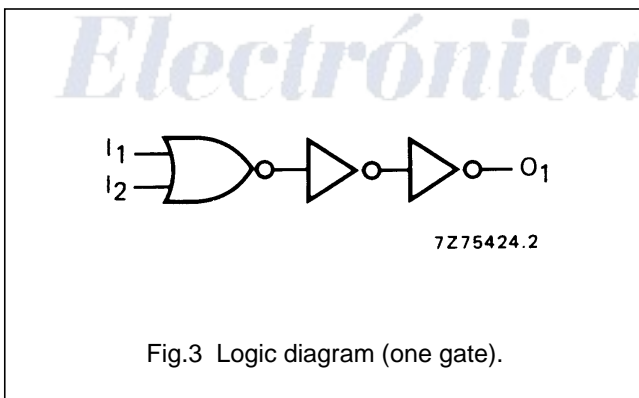
HEF4001B gates

DESCRIPTION

The HEF4001B provides the positive quadruple 2-input NOR function. The outputs are fully buffered for highest noise immunity and pattern insensitivity of output impedance.



- HEF4001BP(N): 14-lead DIL; plastic (SOT27-1)
 - HEF4001BD(F): 14-lead DIL; ceramic (cerdip) (SOT73)
 - HEF4001BT(D): 14-lead SO; plastic (SOT108-1)
- (): Package Designator North America



FAMILY DATA, I_{DD} LIMITS category GATES

See Family Specifications

Quadruple 2-input NOR gate

HEF4001B gates

AC CHARACTERISTICS

$V_{SS} = 0$ V; $T_{amb} = 25$ °C; $C_L = 50$ pF; input transition times ≤ 20 ns

	V_{DD} V	SYMBOL	TYP	MAX		TYPICAL EXTRAPOLATION FORMULA
Propagation delays $I_n \rightarrow O_n$ HIGH to LOW	5	t_{PHL}	60	120	ns	$33 \text{ ns} + (0,55 \text{ ns/pF}) C_L$
	10		25	50	ns	$14 \text{ ns} + (0,23 \text{ ns/pF}) C_L$
	15		20	40	ns	$12 \text{ ns} + (0,16 \text{ ns/pF}) C_L$
LOW to HIGH	5	t_{PLH}	50	100	ns	$23 \text{ ns} + (0,55 \text{ ns/pF}) C_L$
	10		25	45	ns	$14 \text{ ns} + (0,23 \text{ ns/pF}) C_L$
	15		20	35	ns	$12 \text{ ns} + (0,16 \text{ ns/pF}) C_L$
Output transition times HIGH to LOW	5	t_{THL}	60	120	ns	$10 \text{ ns} + (1,0 \text{ ns/pF}) C_L$
	10		30	60	ns	$9 \text{ ns} + (0,42 \text{ ns/pF}) C_L$
	15		20	40	ns	$6 \text{ ns} + (0,28 \text{ ns/pF}) C_L$
LOW to HIGH	5	t_{TLH}	60	120	ns	$10 \text{ ns} + (1,0 \text{ ns/pF}) C_L$
	10		30	60	ns	$9 \text{ ns} + (0,42 \text{ ns/pF}) C_L$
	15		20	40	ns	$6 \text{ ns} + (0,28 \text{ ns/pF}) C_L$

	V_{DD} V	TYPICAL FORMULA FOR P (μ W)	
Dynamic power dissipation per package (P)	5	$1100 f_i + \sum (f_o C_L) \times V_{DD}^2$	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	$5000 f_i + \sum (f_o C_L) \times V_{DD}^2$	
	15	$14\,200 f_i + \sum (f_o C_L) \times V_{DD}^2$	