

QUADRUPLE 2-INPUT NOR GATE

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.

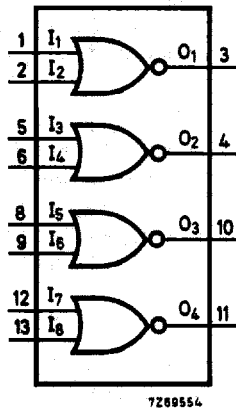


Fig. 1 Functional diagram.

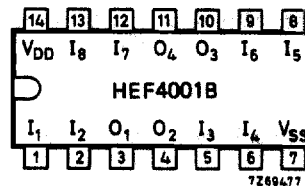


Fig. 2 Pinning diagram.

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

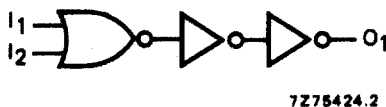


Fig. 3 Logic diagram (one gate).

FAMILY DATA

IDD LIMITS category GATES

see Family Specifications

A.C. 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 $I_n \rightarrow O_n$ 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	$12\text{ ns} + (0,16\text{ ns/pF}) C_L$
	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	$6\text{ ns} + (0,28\text{ ns/pF}) C_L$
	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 $P\text{ (}\mu\text{W)}$	where f_i = input freq. (MHz) f_o = output freq. (MHz) C_L = load capacitance (pF) $\Sigma(f_o C_L)$ = sum of outputs V_{DD} = supply voltage (V)
Dynamic power dissipation per package (P)	5	$1100 f_i + \Sigma(f_o C_L) \times V_{DD}^2$	
	10	$5000 f_i + \Sigma(f_o C_L) \times V_{DD}^2$	
	15	$14200 f_i + \Sigma(f_o C_L) \times V_{DD}^2$	