

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

HEF4078B **gates** **8-input NOR gate**

Product specification
File under Integrated Circuits, IC04

January 1995

8-input NOR gate

HEF4078B
gates

DESCRIPTION

The HEF4078B provides the positive 8-input NOR function. The outputs are fully buffered for highest noise immunity and pattern insensitivity of output impedance.

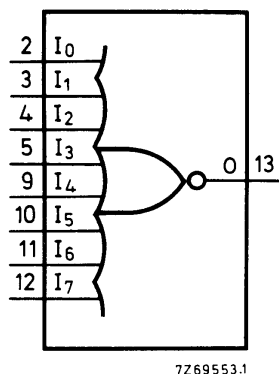


Fig.1 Functional diagram.

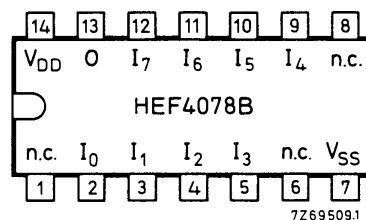


Fig.2 Pinning diagram.

HEF4078BP(N): 14-lead DIL; plastic
(SOT27-1)

HEF4078BD(F): 14-lead DIL; ceramic (cerdip)
(SOT73)

HEF4078BT(D): 14-lead SO; plastic
(SOT108-1)

(): Package Designator North America

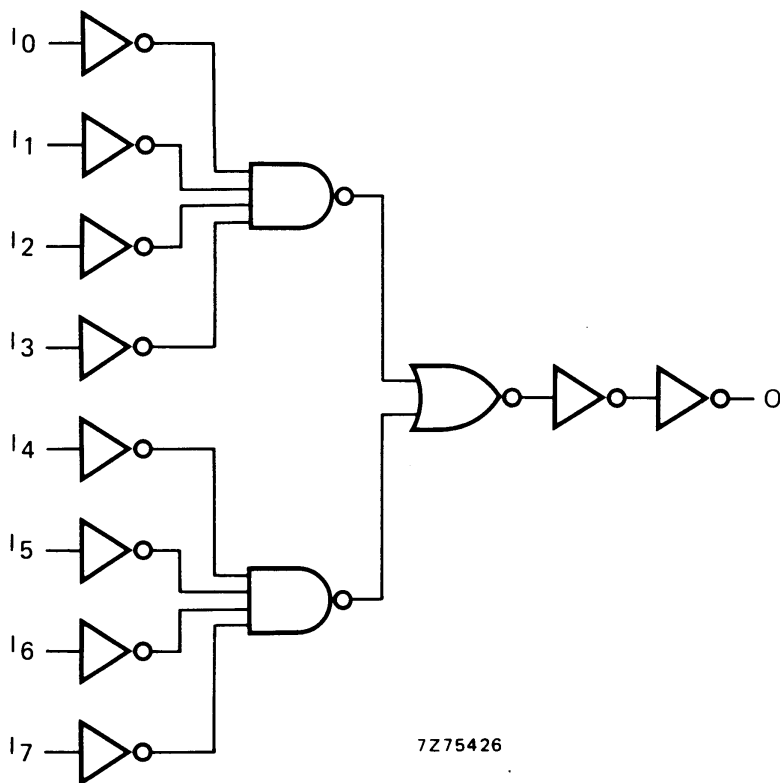


Fig.3 Logic diagram.

FAMILY DATA,
 I_{DD} LIMITS category GATES

See Family Specifications

8-input NOR gate

HEF4078B
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 $I_n \rightarrow O_n$ HIGH to LOW	5	t_{PHL}	80	160 ns	53 ns + (0,55 ns/pF) C_L
	10		35	70 ns	24 ns + (0,23 ns/pF) C_L
	15		25	50 ns	17 ns + (0,16 ns/pF) C_L
	5	t_{PLH}	80	160 ns	53 ns + (0,55 ns/pF) C_L
	10		35	70 ns	24 ns + (0,23 ns/pF) C_L
	15		25	50 ns	17 ns + (0,16 ns/pF) C_L
Output transition times 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} V	TYPICAL FORMULA FOR P (μW)	
Dynamic power dissipation per package (P)	5	$750 f_i + \sum (f_o C_L) \times V_{DD}^2$	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	$2800 f_i + \sum (f_o C_L) \times V_{DD}^2$	
	15	$7500 f_i + \sum (f_o C_L) \times V_{DD}^2$	