

GD4001B

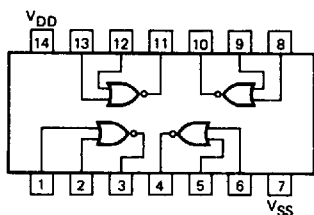
GD4002B

QUAD 2-INPUT NOR GATE • DUAL 4-INPUT NOR GATE

DESCRIPTION — These CMOS logic elements provide the positive input NOR function. The outputs are fully buffered for highest noise immunity and pattern insensitivity of output impedance.

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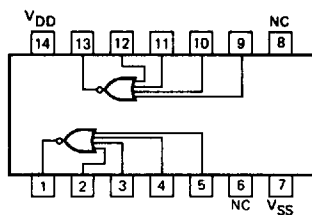
LOGIC AND CONNECTION DIAGRAM DIP (TOP VIEW)



NOTE:
The SO Package have the same pinouts
(Connection Diagram) as the Dual In-line
Package.

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LOGIC AND CONNECTION DIAGRAM DIP (TOP VIEW)



DC CHARACTERISTICS: V_{DD} as shown, $V_{SS} = 0$ V

SYMBOL	PARAMETER		LIMITS									UNITS	TEMP	TEST CONDITIONS
			V _{DD} = 5 V			V _{DD} = 10 V			V _{DD} = 15 V					
			MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
I _{DD}	Quiescent Power Supply Current	XC			1			2			4	μA	MIN, 25°C	All inputs at 0 V or V _{DD}
					7.5			15			30		MAX	
		XM			0.25			0.5			1	μA	MIN, 25°C	
					7.5			15			30		MAX	

AC CHARACTERISTICS: V_{DD} as shown, $V_{SS} = 0$ V, $T_A = 25^\circ\text{C}$, 4001B only (See Note 2)

SYMBOL	PARAMETER	LIMITS									UNITS	TEST CONDITIONS See Note 2
		V _{DD} = 5 V			V _{DD} = 10 V			V _{DD} = 15V				
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
t _{PLH}	Propagation Delay		60	110		25	60		20	48	ns	C _L = 50 pF, R _L = 200 kΩ Input Transition Times < 20 ns
t _{PHL}			60	110		25	60		20	48	ns	
t _{TLH}	Output Transition Time		60	135		30	70		20	45	ns	
t _{THL}			60	135		30	70		20	45	ns	

AC CHARACTERISTICS: V_{DD} as shown, $V_{SS} = 0$ V, $T_A = 25^\circ\text{C}$, 4002B only

SYMBOL	PARAMETER	LIMITS									UNITS	TEST CONDITIONS See Note 2
		V _{DD} = 5 V			V _{DD} = 10 V			V _{DD} = 15V				
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
t _{PLH}	Propagation Delay		65	110		30	60		20	48	ns	C _L = 50 pF, R _L = 200 kΩ Input Transition Times ≤ 20 ns
t _{PHL}			70	110		30	60		23	48	ns	
t _{TLH}	Output Transition Time		75	135		40	70		30	45	ns	
t _{THL}			60	135		23	70		15	45	ns	

NOTES:

1. Additional DC Characteristics are listed in this section under 4000B Series CMOS Family Characteristics.
2. Propagation Delays and Output Transition Times are graphically described in this section under 4000B Series CMOS Family Characteristics.

TYPICAL ELECTRICAL CHARACTERISTICS

