

CMOS NOR GATES

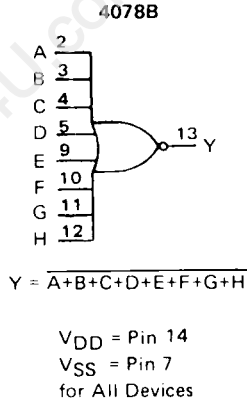
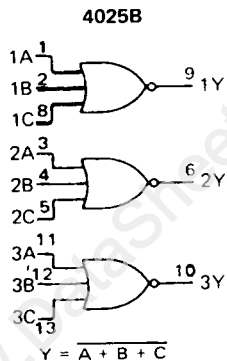
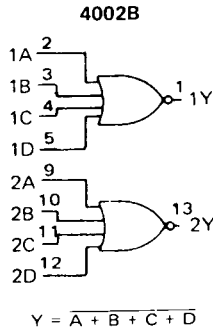
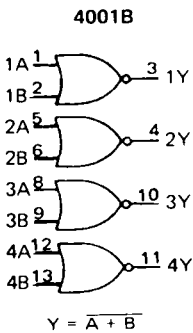
- 4001B – Quad 2-Input NOR
- 4002B – Dual 4-Input NOR
- 4025B – Triple 3-Input NOR
- 4078B – 8-Input NOR

FEATURES

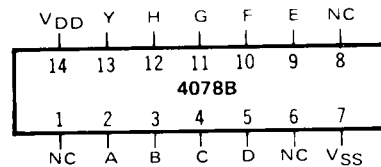
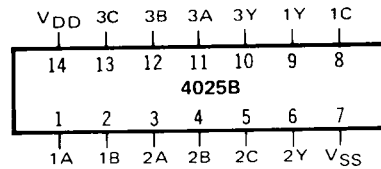
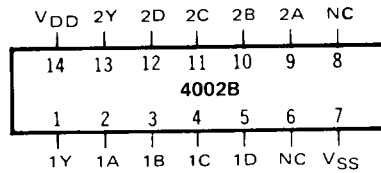
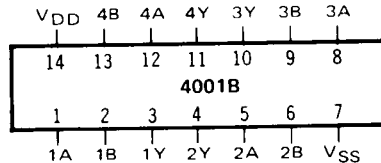
- ◆ Buffered Outputs
- ◆ Diode Protection on all Inputs
- ◆ Fully "B" - Series Compatible

Inputs	Output
0 0 . . . 0	1
All other combinations	0

FUNCTION DIAGRAMS



CONNECTION DIAGRAMS
(all packages)



RECOMMENDED OPERATING CONDITIONS

For maximum reliability:

DC Supply Voltage	$V_{DD} - V_{SS}$	3 to 15	Vdc
Operating Temperature	T_A		
C, D, F, H Device		-55 to +125	°C
E Device		-40 to +85	°C

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS¹

PARAMETER	V _{DD} (Vdc)	CONDITIONS	T _{LOW} ²		+25°C			T _{HIGH} ²		Units
			Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
QUIESCENT DEVICE CURRENT I _{DD}	5 10 15	V _{IN} =V _{SS} or V _{DD} All valid input combinations	-	0.05	-	0.0005	0.05	-	1.5	μA _{dc}
			-	0.10	-	0.001	0.10	-	3.0	
			-	0.20	-	0.002	0.20	-	6.0	

NOTES: ¹ Remaining Static Electrical Characteristics are listed under "4000B Series Family Specifications."

² T_{LOW} = -55°C for C, D, F, H device.

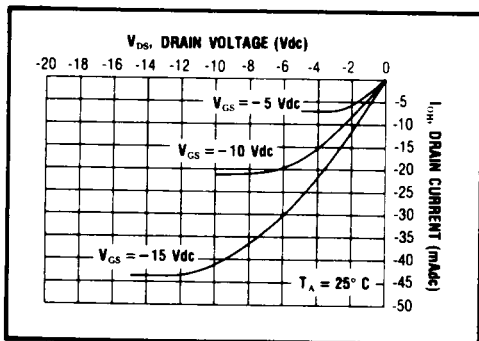
= -40°C for E device.

T_{HIGH} = +125°C for C, D, F, H device.

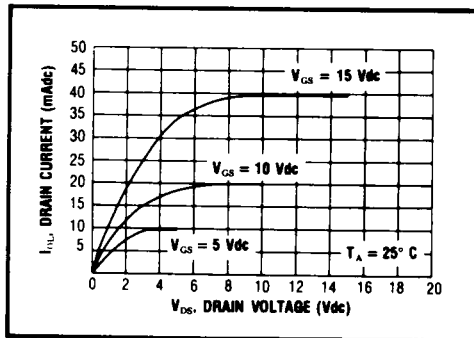
= + 85°C for E device.

DYNAMIC CHARACTERISTICS (C_L = 50pF, T_A = 25°C)

PARAMETER		V _{DD} (Vdc)	Min.	Typ.	Max.	Units
PROPAGATION DELAY TIME	t _{PLH} , t _{PHL}	5	-	125	250	ns
		10	-	60	120	
		15	-	45	90	
OUTPUT TRANSITION TIME	t _{TLH} , t _{THL}	5	-	100	200	ns
		10	-	50	100	
		15	-	40	80	

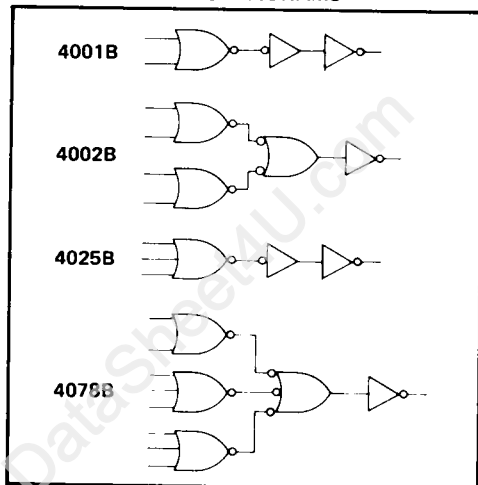


Typical P-Channel
Source Current Characteristics



Typical N-Channel
Sink Current Characteristics

LOGIC DIAGRAMS



SCHEMATIC DIAGRAM 4002B (1 of 2 gates)

