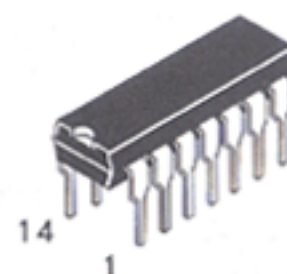


### Quad Exclusive "OR" Gates

DV4070B

This quad exclusive OR gate is constructed with MOS P-Channel and N-Channel enhancement mode devices in a single monolithic structure. The DV4070B is recommended for use where low power dissipation and/or high noise immunity is desired.

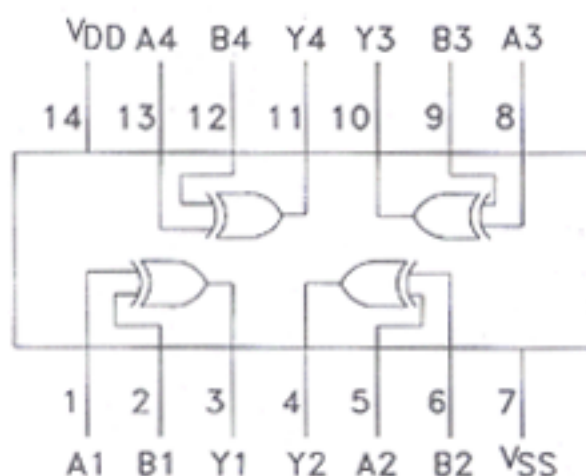
- Supply voltage range = 3.0 Vdc to 18 Vdc
- All outputs buffered
- Capable of driving 4 Low Power TTL loads or one LS TTL load over the rated temperature range
- Diode protection on all inputs
- Highest noise immunity at 12V supply



N Suffix  
Plastic DIP  
AVG-001 Case



D Suffix  
Plastic SOP  
AVG-002 Case



TRUTH TABLE

A	B	Y
0	0	0
1	0	1
0	1	1
1	1	0

### ABSOLUTE MAXIMUM RATINGS

Maximum ratings are those values beyond which damage to the device may occur.

Symbol	Parameter	Value	Unit
V <sub>DD</sub>	Supply Voltage (Referenced to V <sub>SS</sub> )	-0.5 to +18.0	V
V <sub>IN</sub> , V <sub>OUT</sub>	Input or Output Voltage	-0.5 to V <sub>DD</sub> +0.5	V
I <sub>IN</sub> , I <sub>OUT</sub>	DC Current Into or Out of Any Pin	± 10	mA
P <sub>D</sub>	Power Dissipation in Still Air, Derating: 12 mW/°C from 65° to 85°C	500	mW
T <sub>STG</sub>	Storage Temperature Range	-65 to +150	°C
TL	Lead Temperature, (8 Second Soldering)	260	°C

4070B

**ELECTRICAL CHARACTERISTICS** (Voltages Referenced to V<sub>SS</sub>)

Symbol	Parameter	V <sub>DD</sub>	Guaranteed Limits							Unit	
			-40°C		25°C			85°C			
			Min	Max	Min	Typ	Max	Min	Max		
V <sub>OL</sub>	Output Voltage V <sub>IN</sub> =V <sub>DD</sub> or 0	"0" Level	5.0 10 15	- - -	0.05 0.05 0.05	- - -	0 0 0	0.05 0.05 0.05	- - -	0.05 0.05 0.05	V <sub>dc</sub>
V <sub>OH</sub>	V <sub>IN</sub> = 0 or V <sub>DD</sub>	"1" Level	5.0 10 15	4.95 9.95 14.95	- - -	4.95 9.95 14.95	5.0 10 15	- - -	4.95 9.95 14.95	- - -	V <sub>dc</sub>
V <sub>IL</sub>	Input Voltage (V <sub>O</sub> =4.5 or 0.5 V <sub>dc</sub> ) (V <sub>O</sub> =9.0 or 1.0 V <sub>dc</sub> ) (V <sub>O</sub> =13.5 or 1.5 V <sub>dc</sub> )	"0" Level	5.0 10 15	- - -	1.5 3.0 4.0	- - -	2.25 4.50 6.75	1.5 3.0 4.0	- - -	1.5 3.0 4.0	V <sub>dc</sub>
V <sub>IH</sub>	(V <sub>O</sub> =0.5 or 4.5 V <sub>dc</sub> ) (V <sub>O</sub> =1.0 or 9.0 V <sub>dc</sub> ) (V <sub>O</sub> =1.5 or 13.5 V <sub>dc</sub> )	"1" Level	5.0 10 15	3.5 7.0 11	- - -	3.5 7.0 11	2.75 5.50 8.25	- - -	3.5 7.0 11	- - -	V <sub>dc</sub>
I <sub>OH</sub>	Output Drive Current (V <sub>OH</sub> = 2.5 V <sub>dc</sub> ) (V <sub>OH</sub> = 4.6 V <sub>dc</sub> ) (V <sub>OH</sub> = 9.5 V <sub>dc</sub> ) (V <sub>OH</sub> = 13.5 V <sub>dc</sub> )	Source	5.0 5.0 10 15	-2.5 -0.52 -1.3 -3.6	- - - -	-2.1 -0.44 -1.1 -3.0	-4.2 -0.88 -2.25 -8.8	- - - -	-1.7 -0.36 -0.9 -2.4	- - - -	mAdc
I <sub>OL</sub>	(V <sub>OL</sub> = 0.4 V <sub>dc</sub> ) (V <sub>OL</sub> = 0.5 V <sub>dc</sub> ) (V <sub>OL</sub> = 1.5 V <sub>dc</sub> )	Sink	5.0 10 15	0.52 1.3 3.6	- - -	0.44 1.1 3.0	0.88 2.25 8.8	- - -	0.36 0.9 2.4	- - -	mAdc
I <sub>IN</sub>	Input Current		15	-	±0.3	-	±0.00001	±0.3	-	±1.0	μAdc
C <sub>IN</sub>	Input Capacitance V <sub>IN</sub> =0		-	-	-	-	5.0	7.5	-	-	pF
I <sub>DD</sub>	Quiescent Current (Per Package)		5.0 10 15	- - -	1 2 4	- - -	0.0005 0.0010 0.0015	1.0 2.0 4.0	- - -	7.5 15 30	μAdc

**SWITCHING CHARACTERISTICS** (C<sub>L</sub>=50 pF, T<sub>A</sub>=25°C)

Symbol	Characteristics	V <sub>DD</sub>	Min	Typ	Max	Unit
t <sub>TLH</sub> , t <sub>THL</sub>	Output Rise and Fall Time	5.0	-	100	200	ns
		10	-	50	100	
		15	-	40	80	
t <sub>PLH</sub> , t <sub>PHL</sub>	Propagation Delay Time,	5.0	-	175	350	ns
		10	-	75	150	
		15	-	55	110	

**SWITCHING WAVEFORMS**