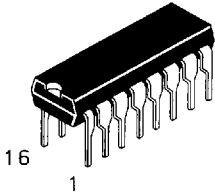


Quad AND/OR Gates

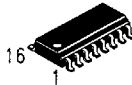
This device gate is constructed with MOS P-Channel and N-Channel enhancement mode devices in a single monolithic structure. It is recommended for use where low power dissipation and/or high noise immunity is desired.

- 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

DV4019B



N Suffix
Plastic DIP
AVG-003 Case



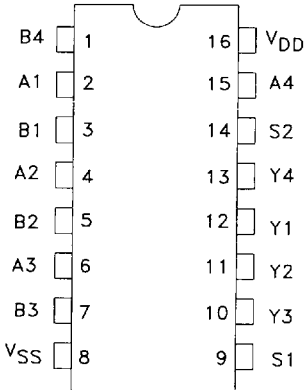
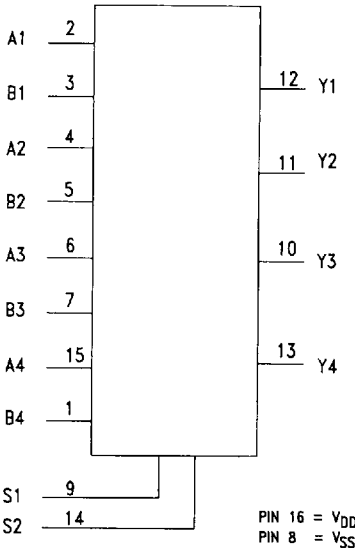
D Suffix
Plastic SOP
AVG-004 Case

TRUTH TABLE

A _N	B _N	S ₁	S ₂	Y _N
1	X	1	0	1
0	X	1	0	0
X	1	0	1	1
X	0	0	1	0
X	X	0	0	0
0	0	1	1	0
0	1	1	1	1
1	0	1	1	1
1	1	1	1	1

X=Don't Care
Y_N=A_NS₁+B_NS₂

PIN ASSIGNMENT



ABSOLUTE MAXIMUM RATINGS

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

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

ELECTRICAL CHARACTERISTICS (Voltages Referenced to VSS)

Symbol	Parameter		VDD	Guaranteed Limits							Unit
				-40°C		25°C			85°C		
				Min	Max	Min	Typ	Max	Min	Max	
VOL	Output Voltage VIN=VDD or 0	"0" Level	5.0	-	0.05	-	0	0.05	-	0.05	Vdc
			10	-	0.05	-	0	0.05	-	0.05	
			15	-	0.05	-	0	0.05	-	0.05	
VOH	VIN= 0 or VDD	"1" Level	5.0	4.95	-	4.95	5.0	-	4.95	-	Vdc
			10	9.95	-	9.95	10	-	9.95	-	
			15	14.95	-	14.95	15	-	14.95	-	
VIL	Input Voltage (VO=4.5 or 0.5 Vdc) (VO=9.0 or 1.0 Vdc) (VO=13.5 or 1.5 Vdc)	"0" Level	5.0	-	1.5	-	2.25	1.5	-	1.5	Vdc
			10	-	3.0	-	4.50	3.0	-	3.0	
			15	-	4.0	-	6.75	4.0	-	4.0	
VIH	(VO=0.5 or 4.5 Vdc) (VO=1.0 or 9.0 Vdc) (VO=1.5 or 13.5 Vdc)	"1" Level	5.0	3.5	-	3.5	2.75	-	3.5	-	Vdc
			10	7.0	-	7.0	5.50	-	7.0	-	
			15	11	-	11	8.25	-	11	-	
IOH	Output Drive Current (VOH= 2.5 Vdc) (VOH= 4.6 Vdc) (VOH= 9.5 Vdc) (VOH= 13.5 Vdc)	Source	5.0	-3.0	-	-2.4	-4.2	-	-1.7	-	mAdc
			5.0	-0.52	-	-0.44	-0.88	-	-0.36	-	
			10	-1.3	-	-1.1	-2.25	-	-0.9	-	
			15	-3.6	-	-3.0	-8.8	-	-2.4	-	
IOL	(VOL= 0.4 Vdc) (VOL= 0.5 Vdc) (VOL= 1.5 Vdc)	Sink	5.0	0.52	-	0.44	0.88	-	0.36	-	mAdc
			10	1.3	-	1.1	2.25	-	0.9	-	
			15	3.6	-	3.0	8.8	-	2.4	-	
IIN	Input Current		15	-	±0.3	-	±0.00001	±0.3	-	±1.0	µAdc
CIN	Input Capacitance	VIN=0	-	-	-	-	5.0	7.5	-	-	pF
IDD	Quiescent Current (Per Package)		5.0	-	1	-	0.0005	1.0	-	30	µAdc
			10	-	2	-	0.0010	2.0	-	60	
			15	-	4	-	0.0015	4.0	-	120	

4019B

SWITCHING CHARACTERISTICS (CL=50 pF, TA=25°C)

Symbol	Characteristics	VDD	Min	Typ	Max	Unit
tTLH, tTHL	Rise and Fall Time	5.0	-	100	200	ns
		10	-	50	100	
		15	-	40	80	
tPLH, tPHL	Propagation Delay Time,	5.0	-	150	300	ns
		10	-	60	120	
		15	-	50	100	

SWITCHING WAVEFORMS

