

quad 2-input nand gate

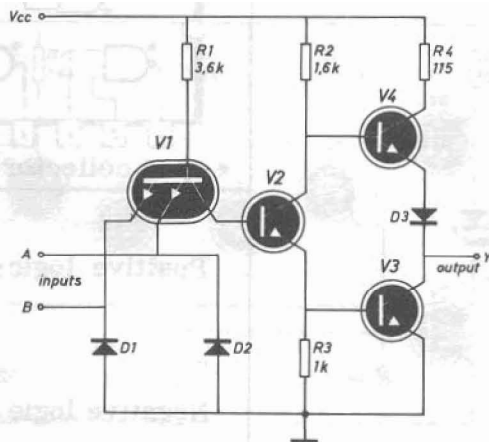
- 1 - SN 7400 N
- 4 - MC 7400 P
- 7 - ZN 7400 E
- 10 - FJH 131
- 13 - TL 7400 N

- 2 - F 7400 PC
- 5 - DM 7400 N
- 8 - N 7400 A
- 11 - FLH 101
- 14 - SF.C 400 E

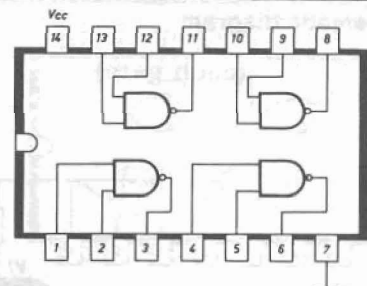
- 3 - F 9N00 PC
- 6 - DM 8000 N
- 9 - T 7400 B1
- 12 - MIC 7400 N
- 15 -

schematic diagram

(each gate)



component values shown are typical



Positive logic: $Y = \overline{A \cdot B}$

Negative logic: $Y = \overline{A+B}$

RECOMMENDED OPERATING CONDITIONS

PARAMETER	MIN.	TYP.	MAX.	UNITS
Supply Voltage V_{CC}	4.75	5.0	5.25	Volts
Operating Free-Air Temperature Range	0	25	70	$^{\circ}$ C
Normalized Fan-Out from Each Output, N			10	U. L.

ELECTRICAL CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (Unless Otherwise Noted)

SYMBOL	PARAMETER	MIN.	TYP. (2)	MAX.	UNITS	TEST CONDITIONS (1)
V_{IH}	Input HIGH Voltage	2.0			Volts	Guaranteed Input HIGH Voltage
V_{IL}	Input LOW Voltage			0.8	Volts	Guaranteed Input LOW Voltage
V_{OH}	Output HIGH Voltage	2.4	3.3		Volts	$V_{CC} = \text{MIN.}, I_{OH} = 0.4 \text{ mA}, V_{IN} = 0.8 \text{ V}$
V_{OL}	Output LOW Voltage		0.22	0.4	Volts	$V_{CC} = \text{MIN.}, I_{OL} = 16 \text{ mA}, V_{IN} = 2.0 \text{ V}$
I_{IH}	Input HIGH Current			40	μ A	$V_{CC} = \text{MAX.}, V_{IN} = 2.4 \text{ V}$ } Each Input
I_{IL}	Input LOW Current			1.0	mA	$V_{CC} = \text{MAX.}, V_{IN} = 5.5 \text{ V}$ }
I_{OS}	Output Short Circuit Current (3)	- 18		- 55	mA	$V_{CC} = \text{MAX.}, V_{IN} = 0.4 \text{ V}$ } Each Input
I_{CCH}	Supply Current HIGH		4.0	8.0	mA	$V_{CC} = \text{MAX.}$
I_{CCL}	Supply Current LOW		12	22	mA	$V_{CC} = \text{MAX.}, V_{IN} = 0 \text{ V}$
						$V_{CC} = \text{MAX.}, V_{IN} = 5.0 \text{ V}$

SWITCHING CHARACTERISTICS ($T_A = 25^{\circ}$ C)

SYMBOL	PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
t_{PLH}	Turn Off Delay Input to Output		11	22	ns	$V_{CC} = 5.0 \text{ V}$ $C_L = 15 \text{ pF}$ $R_L = 400 \Omega$
t_{PHL}	Turn On Delay Input to Output		7.0	15	ns	