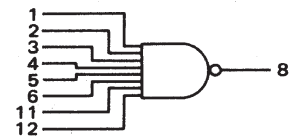


8-INPUT "NAND" GATE

MTTL MC7400P series
MTTL MC5400L/7400L series

MC5430L*
MC7430P,L*

This device is an 8-input NAND gate. It is useful when processing a large number of variables, such as in encoders and decoders.



Positive Logic:

$$8 = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 11 \cdot 12$$

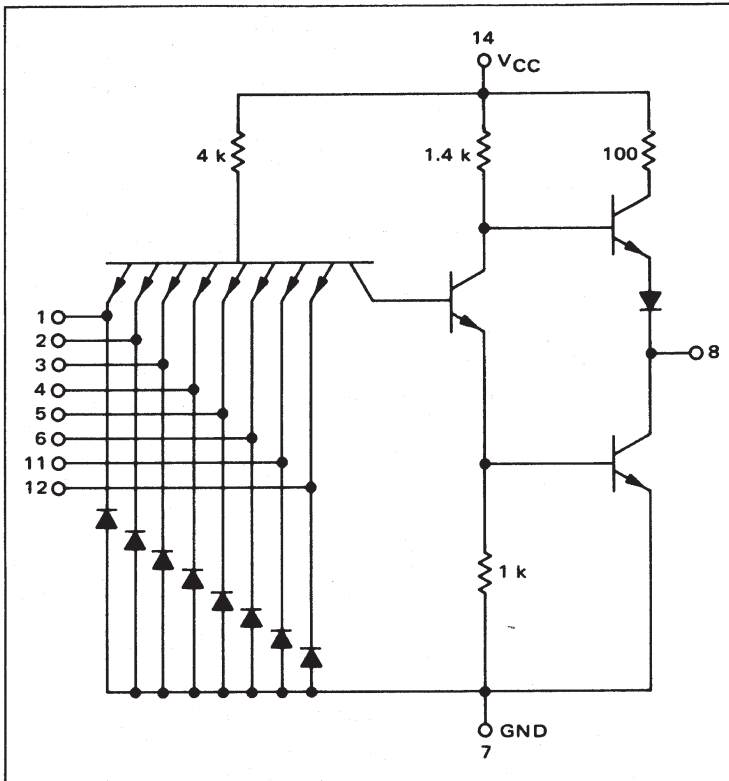
Negative Logic:

$$8 = 1 + 2 + 3 + 4 + 5 + 6 + 11 + 12$$

Input Loading Factor = 1

Output Loading Factor = 10

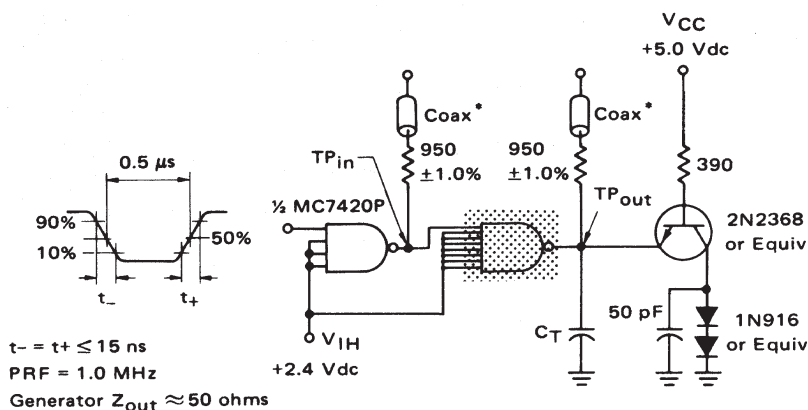
Total Power Dissipation = 10 mW typ/pkg
Propagation Delay Time = 13 ns typ



* L suffix = TO-116 ceramic package (Case 605C)
P suffix = TO-116 plastic package (Case 93)
See General Information section for package outline dimensions.

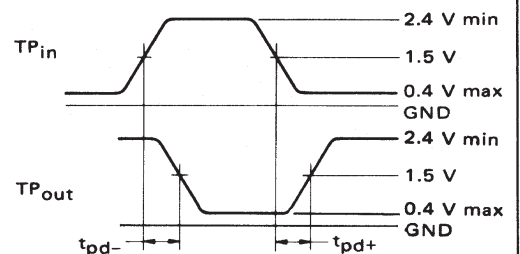
SWITCHING TIME TEST CIRCUIT

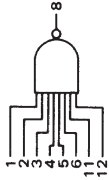
VOLTAGE WAVEFORMS AND DEFINITIONS



$C_T = 15 \text{ pF}$ = total parasitic capacitance, which includes probe, wiring, and load capacitances.

*The coax delays from input to scope and output to scope must be matched. The scope must be terminated in 50-ohm impedance. The 950-ohm resistor and the scope termination impedance constitute a 20:1 attenuator probe. Coax shall be CT-070-50 or equivalent.





ELECTRICAL CHARACTERISTICS
Test procedures are shown for only one input of this device. To complete testing, sequence through remaining inputs in the same manner.

TEST CURRENT/VOLTAGE VALUES (All Temperatures)													
		Volts											
		mA		I_{OL}	I_{OH}	V_{IL}	V_{IH}	V_{IHH}	V_{RI}	V_{R2}	V_{th1}	V_{th0}	V_{CC}
Input	Forward Current	16	-0.4	0.4	0.4	2.4	2.4	5.5	4.5	5.0	2.0	0.8	5.0
		16	-0.4	0.4	0.4	2.4	2.4	5.5	4.5	5.0	2.0	0.8	5.0
													5.25
TEST CURRENT/VOLTAGE APPLIED TO PINS LISTED BELOW:													
Leakage Current	I_{R1}												
	I_{R2}												
Output	Output Voltage	8	-	-	-	-	-	-	-	-	-	-	-
	V_{OH}	8	8	-	-	-	-	-	2,3,4,5,6,11,12	-	-	1	-
	I_{SC}	8	-	-	-	-	-	-	-	-	-	-	-
Power Requirements	Power Supply Drain	14	-	-	-	-	-	-	-	-	-	-	-
	I_{PDL}	14	-	-	-	-	-	-	-	-	-	-	-
Switching Parameters	Turn-On Delay	1,8	-	-	-	-	-	-	-	-	-	-	-
	Turn-Off Delay	1,8	-	-	-	-	-	-	-	-	-	-	-

**Tested only at 25°C.