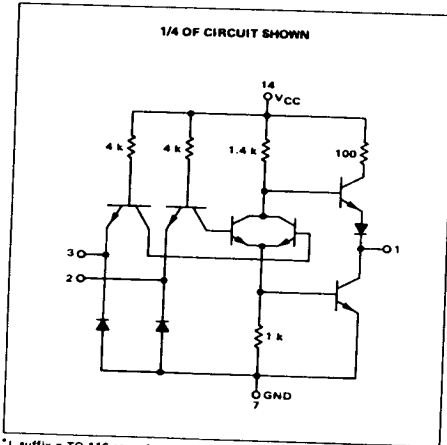


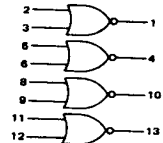
QUAD 2-INPUT "NOR" GATE

MTTL MC7400P series  
MTTL MC5400L/7400L series

MC5402L\*  
MC7402P,L\*



This device consists of four 2-input NOR gates. Each gate may be used as an inverter, or two gates may be cross-coupled to form bistable circuits.



Positive Logic:  $1 = \overline{2+3}$   
Negative Logic:  $1 = \overline{2+3}$

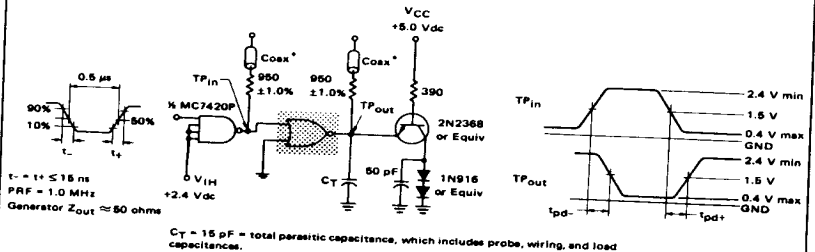
Input Loading Factor = 1  
Output Loading Factor = 10

Total Power Dissipation = 48 mW typ/pkg  
Propagation Delay Time = 13 ns typ

\*L suffix - TO-116 ceramic package (Case 632)  
P suffix - TO-116 plastic package (Case 805)  
See General Information section for package outline dimensions.

VOLTAGE WAVEFORMS AND DEFINITIONS

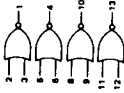
SWITCHING TIME TEST CIRCUIT



1-6

**ELECTRICAL CHARACTERISTICS**

Test procedures are shown for only one gate. The other gates are tested in the same manner. Further test conditions are shown for only one input of the gate under test. To complete testing, sequence through remaining inputs.



Characteristic	Symbol	Pin Under Test	TEST CURRENT/VOLTAGE VALUES (All Temperatures)						V <sub>OH</sub>	V <sub>OL</sub>	V <sub>CC</sub>	V <sub>CE</sub>	
			Volts										
			V <sub>IL</sub>	V <sub>IS</sub>	V <sub>IH</sub>	V <sub>OH</sub>	V <sub>OL</sub>	V <sub>IS</sub>					
Forward Current	I <sub>F</sub>	3	-	-1.6	mAdc	-	-1.6	mAdc	-	-	-	14	7*
Leakage Current	I <sub>IL1</sub>	3	-	40	μAdc	-	40	μAdc	-	-	-	14	3.7*
	I <sub>IL2</sub>	2	-	1.0	mAdc	-	1.0	mAdc	-	-	-	14	3.7*
Output Output Voltage	V <sub>OL</sub>	1	-	0.4	Vdc	-	0.4	Vdc	-	-	-	14	3.7*
	V <sub>OH</sub>	1	2.4	-	Vdc	2.4	-	Vdc	1	-	-	14	7*
Short-Circuit Current	I <sub>SC</sub>	1	-20	-55	mAdc	-18	-55	mAdc	-	-	-	14	1.2, 3.7*
Power Requirements (Total Device)	I <sub>PDH</sub>	14	-	27	mAdc	-	27	mAdc	-	-	-	-	-
Power-Supply Drain	I <sub>PSD</sub>	14	-	14.4	mAdc	-	14.4	mAdc	-	-	-	-	-
Switching Parameters	t <sub>pd</sub>	2.1	-	15**	ns	-	15**	ns	-	-	-	-	-
	t <sub>pd</sub>	2.1	-	29**	ns	-	29**	ns	-	-	-	-	-

\*Ground inputs to gates not under test.  
\*\*Tested only at 25°C.

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