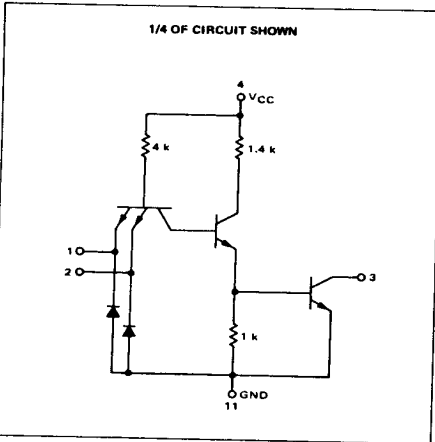


QUAD 2-INPUT "NAND" GATE
WITH OPEN COLLECTOR

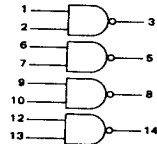
MTTL MC5400F/7400F series

MC5401F*
MC7401F*



* F suffix = TO-85 ceramic package (Case 609).
See General Information section for package outline dimensions.

This device consists of four 2-input NAND gates with no output pullup network. It can be used where the Wired-OR function is required, or for driving discrete components.



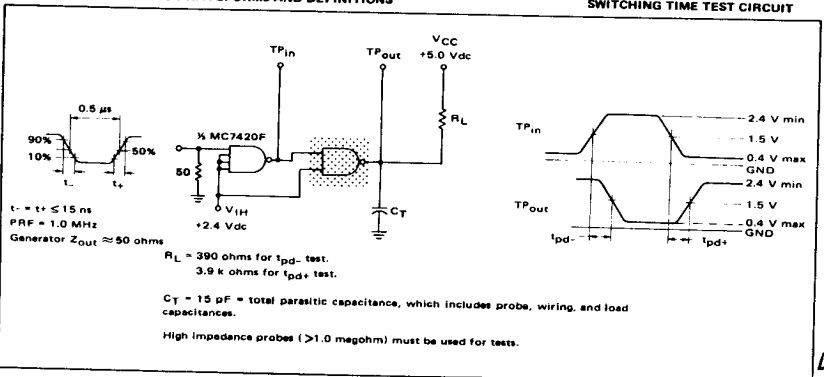
Positive Logic: $3 = \overline{1 \cdot 2}$
Negative Logic: $3 = \overline{1 \cdot 2}$

Input Loading Factor = 1
Output Loading Factor = 10

Total Power Dissipation = 40 mW typ/pkg
Propagation Delay Time = 35 ns typ

VOLTAGE WAVEFORMS AND DEFINITIONS

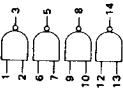
SWITCHING TIME TEST CIRCUIT



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MC5401F, MC7401F (continued)

4-35



ELECTRICAL CHARACTERISTICS

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

Characteristic	Symbol	Pin Under Test	MC5401 Test Limits -55 to +125°C		MC7401 Test Limits 0 to +70°C		TEST CURRENT VOLTAGE VALUES (All Temperatures)															
			Min	Max	Unit	Min	Max	Volts														
			TEST CURRENT VOLTAGE APPLIED TO PINS LISTED BELOW:																			
Input Forward Current	I_F	1	-	-1.6	mA dc	-	-1.6	mA dc	I_{OL}	V_L	V_{IH}	V_{MHH}	V_{A1}	V_{A2}	V_{M11}	V_{M10}	V_{EX1}	V_{CC}	V_{ECL}	V_{CCH}	Gnd	
Leakage Current	I_{L1}	1	0	40	µA dc	0	40	µA dc	-	1	-	-	-	-	-	-	-	-	-	-	-	11*
Output Output Voltage	V_{OL}	3	0.4	V dc	0.4	V dc	0.4	V dc	-	-	-	-	-	-	-	-	-	-	-	-	-	11*
Output Leakage Current	I_{EX}	3	0.25	mA dc	0.25	mA dc	0.25	mA dc	-	-	1	-	-	-	-	2	3	-	-	-	-	11*
Power Requirements (Total Device) Power Supply Current	I_{PPH}	4	20.4	mA dc	20.4	mA dc	20.4	mA dc	-	-	-	-	1.2, 6, 7, 8, 10, 12, 13	-	-	-	-	4	-	-	-	11
Switching Parameters Turn-On Delay Turn-Off Delay	t_{PD} t_{PZ}	1, 3 1, 3	15** 45**	ns	15** 45**	ns	15** 45**	ns	1 3	2	-	-	-	-	-	-	-	4	-	-	-	11
	t_{PZ}	1, 3	45**	ns	45**	ns	45**	ns	1 3 2	2	-	-	-	-	-	-	-	4	-	-	-	11

** Ground inputs to gates on under test.
** Test at 25°C.