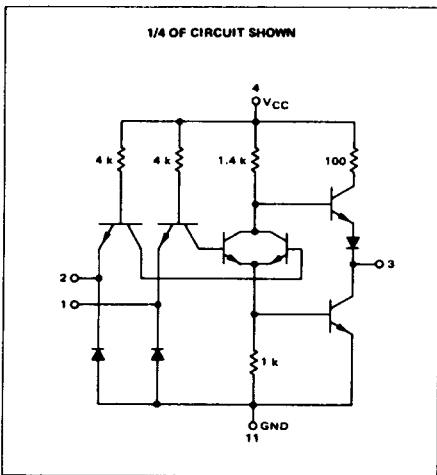


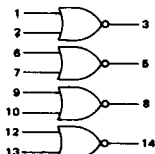
QUAD 2-INPUT "NOR" GATE

MTTL MC5400F/7400F series

MC5402F*
MC7402F*



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

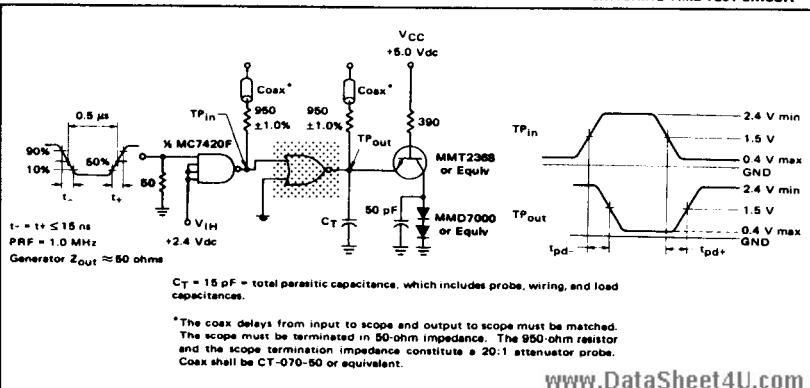
Input Loading Factor = 1
Output Loading Factor = 10

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

*F suffix = TO-8B ceramic package (Case 608).
See General Information section for package outline dimensions.

VOLTAGE WAVEFORMS AND DEFINITIONS

SWITCHING TIME TEST CIRCUIT

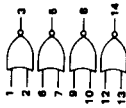


MC5402F, MC7402F (continued)

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ELECTRICAL CHARACTERISTICS

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



MC5402

MC7402

MC7402 Test Limits

0 to +70°C

MC5402 Test Limits

-55 to +125°C

Characteristic	Symbol	Pin Under Test	MC5402 Test Limits -55 to +125°C		MC7402 Test Limits 0 to +70°C		TEST CURRENT/VOLTAGE VALUES (All Temperatures)																		
			Min	Max	Min	Max	Unit	mA		Volts															
Input Forward Current	I _F	1	-	-1.6	mAdc	-	-1.6	mAdc	I _{OL}	I _{OH}	V _{OL}	V _{OH}	V _{INT}	V _{IN}	V _{IZ}	V _{IS}	V _{IM1}	V _{IO}	V _{IC}	V _{CC}	V _{CL}	V _{CC}	V _{CC}		
			-	40	μAdc	-	40	μAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			-	1.0	mAdc	-	1.0	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leakage Current	I _{R1}	1	-	40	μAdc	-	40	μAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I _{R2}	1	-	1.0	mAdc	-	1.0	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Output Output Voltage	V _{OL}	3	-	0.4	Vdc	-	0.4	Vdc	I _{OL}	I _{OH}	V _{OL}	V _{OH}	V _{INT}	V _{IN}	V _{IZ}	V _{IS}	V _{IM1}	V _{IO}	V _{IC}	V _{CC}	V _{CL}	V _{CC}	V _{CC}		
	V _{OH}	3	2.4	-	Vdc	2.4	-	Vdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Short-Circuit Current	I _{SC}	3	-20	-55	mAdc	-18	-55	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Power Requirements (Total Device)	I _{DDH}	4	-	27	mAdc	-	27	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I _{DDL}	4	-	14.4	mAdc	-	14.4	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Switching Parameters	t _{PH}	1,3	-	15**	ns	-	15**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	t _{PL}	1,3	-	29**	ns	-	29**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

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