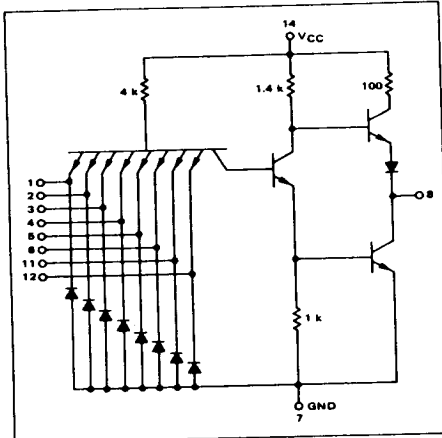


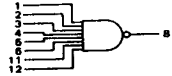
8-INPUT "NAND" GATE

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:
 $g = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 11 \cdot 12$
Negative Logic:
 $g = 1 + 2 + 3 + 4 + 5 + 6 + 11 + 12$

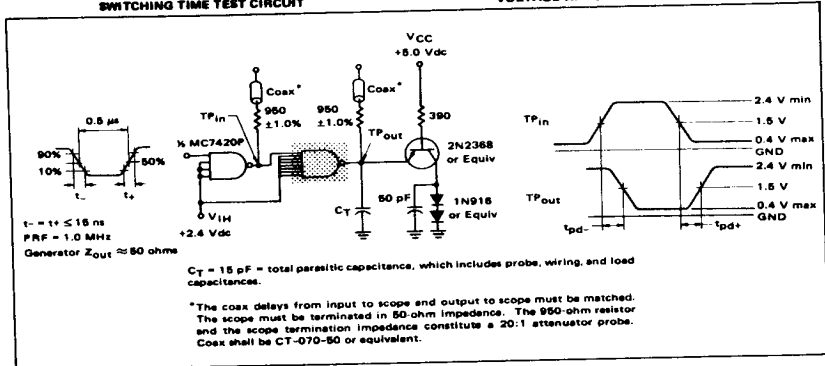
Input Loading Factor = 1
Output Loading Factor = 10

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

⁺L suffix = TO-118 ceramic package (Case 632)
P suffix = TO-116 plastic package (Case 606)
See General Information section for package outline dimensions.

SWITCHING TIME TEST CIRCUIT

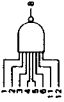
VOLTAGE WAVEFORMS AND DEFINITIONS



4-11

ELECTRICAL CHARACTERISTICS

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



Characteristic	Symbol	Pin Under Test	MC5430 Test Limits -55 To +125 °C				MC7430 Test Limits 0 To +70 °C				TEST CURRENT/VOLTAGE VALUES (All Temperatures)																					
			Min	Max	Unit	Test	Min	Max	Unit	Test	mA		Volts												Grd							
											I_{OL}	I_{OH}	V_{IL}	V_{IH}	V_{M1}	V_{M2}	V_{M3}	V_{M4}	V_{M5}	V_{M6}	V_{M7}	V_{M8}	V_{M9}	V_{M10}	V_{M11}	V_{M12}	V_{M13}	V_{M14}	V_{CC}	V_{CCH}		
Input Forward Current	I_F	1	-	-1.6	mAdc	-	-1.6	mAdc	-	-	1	-	-	2.3,4,5,6,11,12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	
Leakage Current	I_{R1}	1	-	40	μ Adc	-	40	μ Adc	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	2,3,4,5,6,7,11,12	
	I_{R2}	1	-	1.0	mAdc	-	1.0	mAdc	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	2,3,4,5,6,7,11,12	
Output Output Voltage	V_{OL}	8	-	0.4	Vdc	-	0.4	Vdc	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	
	V_{OH}	8	2.4	-	Vdc	2.4	-	Vdc	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	
Short-Circuit Current	I_{SC}	8	-20	-55	mAdc	-18	-55	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	1,2,3,4,5,6,7,8,11,12		
Power Requirements																																
Power Supply's Drain	I_{PDD}	14	-	5.1	mAdc	-	5.1	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	
	I_{PDL}	14	-	1.8	mAdc	-	1.8	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	
Switching Parameters																																
Turn-On Delay	t_{p-}	1,8	-	15**	ns	-	15**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	
Turn-Off Delay	t_{p+}	1,8	-	29**	ns	-	29**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	7	7	

**Tested only at 25 °C.

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