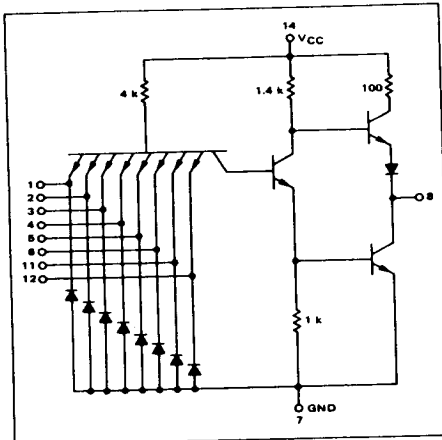


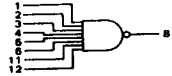
8-INPUT "NAND" GATE

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:
 $g = 1 + 2 + 3 + 4 + 5 + 6 + 11 + 12$

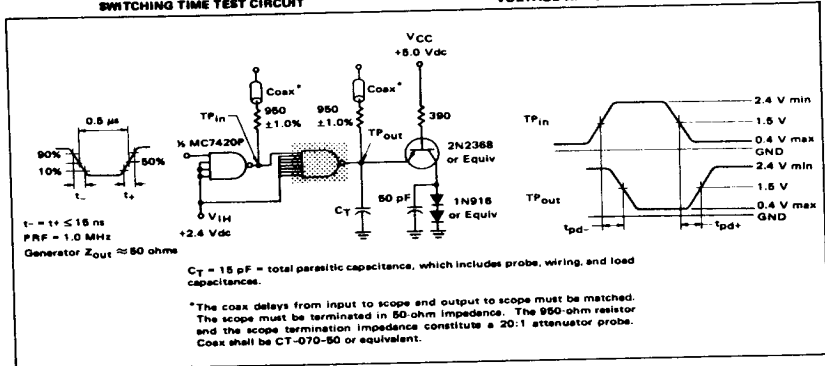
Input Loading Factor = 1
Output Loading Factor = 10

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

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

SWITCHING TIME TEST CIRCUIT

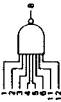
VOLTAGE WAVEFORMS AND DEFINITIONS



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.



TEST CURRENT/VOLTAGE VALUES (All Temperatures)

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		Min		Max		Unit		mA				Volts									
			I_F	I_{R1}	I_{R2}	V_{OL}	V_{OH}	I_{SC}	I_{PDI}	I_{PDH}	I_{PDL}	I_{PDH}	I_{PDL}	I_{OL}	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}
Input Forward Current	I_F	1	-	-1.6	mAdc	-	-1.6	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Leakage Current	I_{R1}	1	-	40	μ Adc	-	40	μ Adc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I_{R2}	1	-	1.0	mAdc	-	1.0	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	V_{OL}	8	-	0.4	Vdc	-	0.4	Vdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Output Output Voltage	V_{OH}	8	2.4	-	Vdc	2.4	-	Vdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I_{SC}	8	-20	-55	mAdc	-18	-55	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Power Requirements																												
Power Supply Drain	I_{PDH}	14	-	5.1	mAdc	-	5.1	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	I_{PDL}	14	-	1.8	mAdc	-	1.8	mAdc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Switching Parameters																												
Turn-On Delay	t_{p-}	1,8	-	15**	ns	-	15**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turn-Off Delay	t_{p+}	1,8	-	29**	ns	-	29**	ns	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Tested only at 25 °C.

380

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