

8-INPUT "NAND" GATE

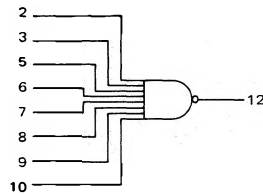
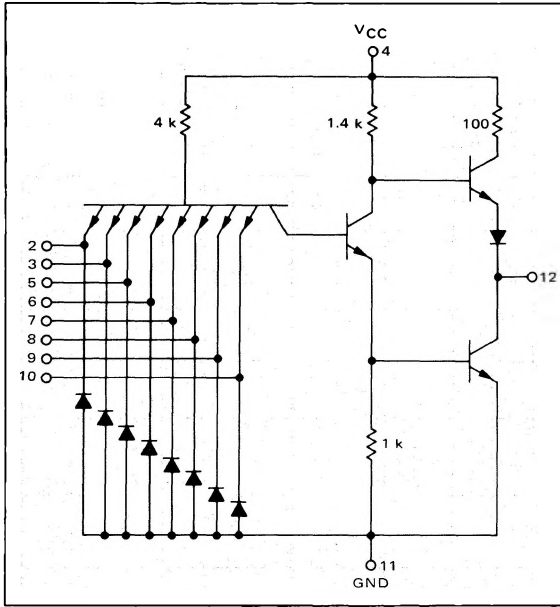
MCBC5400/MCB5400F series

MCBC5430*
MCB5430F*



This device is an 8-input NAND gate. It is useful when processing a large number of variables, such as in encoders and decoders.

Beam lead sealed junction technology is used to manufacture these devices. They are particularly useful in highly reliable systems using hybrid beam lead assembly techniques or standard flat package assembly techniques.

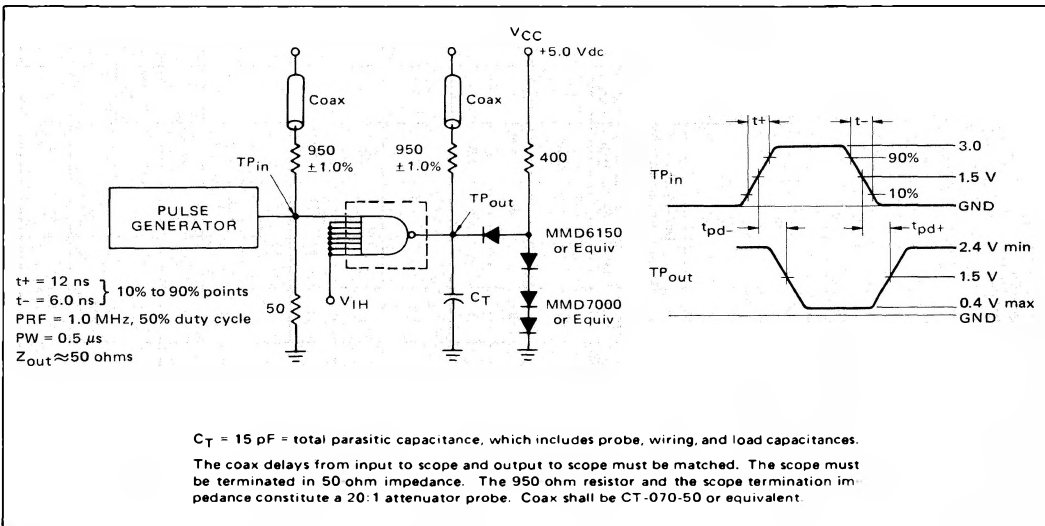


Positive Logic:
 $12 = 2 \cdot 3 \cdot 5 \cdot 6 \cdot 7 \cdot 8 \cdot 9 \cdot 10$

Negative Logic:
 $12 = 2 + 3 + 5 + 6 + 7 + 8 + 9 + 10$

Input Loading Factor = 1
Output Loading Factor = 10
Total Power Dissipation = 10 mW typ/pkg
Propagation Delay Time = 10 ns typ

SWITCHING TIME TEST CIRCUIT AND WAVEFORMS

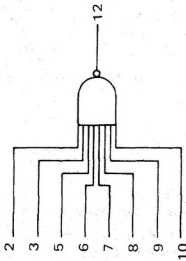


*F suffix = 1/4" x 1/4" ceramic package (Case 651). MCBC-prefixed devices are un-encapsulated. Beam numbers are the same as the pin numbers for flat-packaged devices. See General Information section for package and chip details.

MCBC5430, MCB5430F (continued)

ELECTRICAL CHARACTERISTICS

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



Characteristic	Symbol	Pin Under Test	Test Limits MCBC5430/MCB5430F -55 to +125°C		TEST CURRENT/VOLTAGE VALUES (All Temperatures)													
			Min	Max	Volts													
			Unit	Unit	I_{OL}	I_{OH}	V_{IL}	V_{IH}	V_{IHL}	V_{IHH}	V_{R1}	V_{R2}	V_{th1}	V_{th0}	V_{CC}	V_{CCL}	V_{CCH}	
Input Forward Current	I_F	2	-	-1.6	mAdc	-	-	2	-	3.5,6,7,8,9,10	-	-	-	-	-	-	4	11
Leakage Current	I_{R1}	2	-	40	μ Adc	-	-	-	2	-	-	-	-	-	-	-	4	3,5,6,7,8,9,10
	I_{R2}	2	-	1.0	mAdc	-	-	-	2	-	-	-	-	-	-	-	4	3,5,6,7,8,9,10
	Output Output Voltage	V_{OL}	12	-	0.4	Vdc	-	-	-	-	-	2,3,5,6,7,8,9,10	-	-	-	-	4	11
Short-Circuit Current	V_{OH}	12	2.4	-	Vdc	-	-	-	-	3,5,6,7,8,9,10	-	-	2	-	-	-	4	11
	I_{SC}	12	-20	-55	mAdc	-	-	-	-	-	-	-	-	-	-	-	4	2,3,5,6,7,8,9,10,11,12
	Power Requirements	I_{PDH}	4	-	6.0	mAdc	-	-	-	-	2,3,5,6,7,8,9,10	-	-	-	-	-	4	11
Switching Parameters	t_{pdl}	4	-	2.0	mAdc	-	-	-	-	-	-	-	-	-	-	-	4	2,3,5,6,7,8,9,10,11
	Turn-On Delay	t_{pd-}	2,12	-	15**	ns	-	-	3,5,6,7,8,9,10	-	-	-	-	4	-	-	-	11
	Turn-Off Delay	t_{pd+}	2,12	-	22**	ns	-	-	3,5,6,7,8,9,10	-	-	-	-	4	-	-	-	11

**Tested only at 25°C.