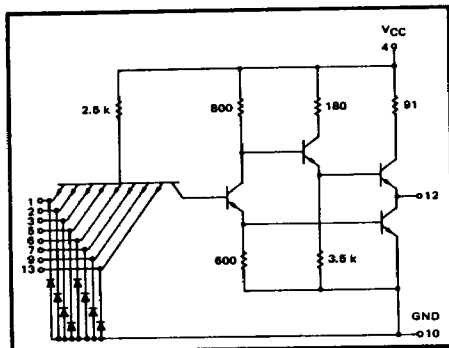


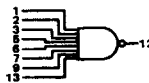
8-INPUT "NAND" GATE

MTTL II MC2100/2000 series

MC2105 • MC2155
MC2005 • MC2055



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



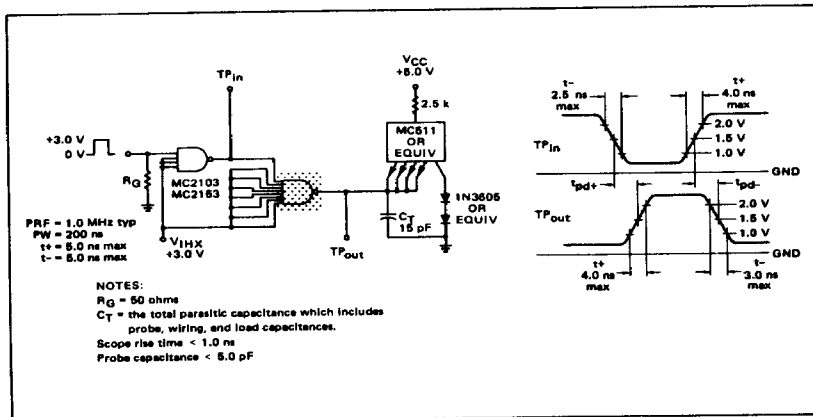
Positive Logic:
 $12 = 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8 \cdot 13$
 Negative Logic:
 $12 = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 13$

Total Power Dissipation = 22 mW typ/Pkg
 Propagation Delay Time = 8.0 ns typ

TYPE NO.	INPUT LOADING FACTOR (I _I)	OUTPUT DRIVE (I _{OL})	TEMPERATURE RANGE
MC2105 MC2155	1 -2.0 mA	11 MC2100 series Gates 22 mA 8 MC2100 series Gates 12 mA	-55°C to +125°C
MC2005 MC2055	1 -2.5 mA	9 MC2000 series Gates 22.5 mA 5 MC2000 series Gates 12.5 mA	0°C to +75°C

SWITCHING TIME TEST CIRCUIT

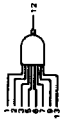
VOLTAGE WAVEFORMS AND DEFINITIONS



MC2105, MC2155/MC2005, MC2055 (continued)

ELECTRICAL CHARACTERISTICS

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



Characteristic	Symbol	Pin Under Test	MC2105, MC2155 Test Limits						MC2005, MC2055 Test Limits							
			-55°C		+25°C		+125°C		0°C		+25°C		+75°C			
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Input																
Forward Current	I_F	1	-2.0	-2.0	-2.0	-2.0	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Leakage Current	I_L	1	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
Increase Beta Current	$I_{B\beta}$	1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Breakdown Voltage	$BV_{in}^{(+)}$	1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Output																
Output Voltage	$V_{out}^{(+)}$	12	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Leakage Current	I_{OLK}	12	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Short-Circuit Current	I_{SC}	12	-25	-100	-25	-100	-25	-100	-25	-100	-25	-100	-25	-100	-25	-100
Output Voltage	V_{OL}	12	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Power Requirements (Total Device)	V_{OH}	12	2.70	3.10	3.15	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Maximum Power Supply Current	I_{max}	4	-	6.50	-	-	6.75	-	-	6.75	-	-	6.75	-	-	6.75
Power Supply Drain	I_{PDR}	4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Switching Parameters	t_{PDL}	4	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Turn-On Delay	t_{pd}	1, 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turn-Off Delay	t_{pd}	1, 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rise Time	t_r	1, 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fall Time	t_f	1, 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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* Pulse Fan-Out.

Pin-out and Package Information

Table 3-4 DSP56001A Identification by Signal Name (Continued)

Signal Name	132 pin "FC" PQFP or "FE" CQFP Pin No.	88 pin "RC" PGA Pin No.	Signal Name	132 pin "FC" PQFP or "FE" CQFP Pin No.	88 pin "RC" PGA Pin No.
WT	45	L13	nc	103	
X/Y	48	N13	nc	107	
XTAL	126	A6	nc	110	
nc	3		nc	116	
nc	4		nc	117	
nc	7		nc	122	
nc	17		nc	125	
nc	18		nc	132	
nc	21				

Power and ground pins have special considerations for noise immunity. See the section **Design Considerations**.

Table 3-5 DSP56001A Power Supply Pins

132 pin "FC" PQFP or "FE" CQFP Pin No.	88 pin "RC" PGA Pin No.	Power Supply	Circuit Supplied
63	L8	VCCN	Address Bus Buffers
64			
55	L6	GNDN	
56	L9		
73			
74			