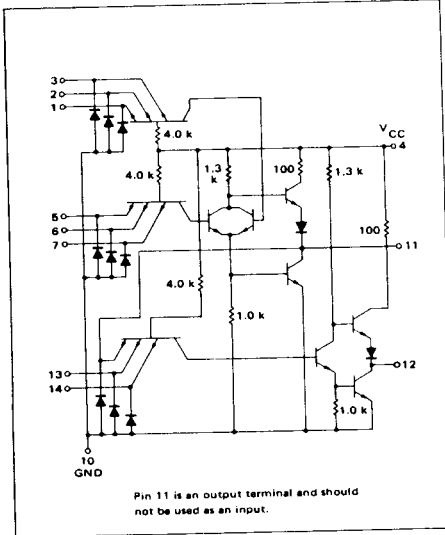


2-WIDE 3-INPUT
"AND-OR-INVERT" GATE
WITH GATED COMPLEMENT

MTTL | MC500/400 series

MC503 · MC553
MC403 · MC453



This device is the only gate of the basic positive AND-OR-INVERT series that includes an additional 3-input AND-INVERT function on the output. This configuration provides the output and a gated complement in a single package. This device is useful in the design of adders, subtractors and one-shot multivibrators.



Positive Logic

$$11 = (1 \cdot 2 \cdot 3) + (5 \cdot 6 \cdot 7)$$

$$12 = \overline{1 \cdot 1 \cdot 3} \cdot 14$$

$$12 = (1 \cdot 2 \cdot 3) + (5 \cdot 6 \cdot 7) + \overline{1 \cdot 3} + \overline{1 \cdot 4}$$

Total Power Dissipation - 35 mW typ/pkg
Propagation Delay Times - 11 ns typ (Pin 1 to Pin 11)
10 ns typ (Pin 11 to Pin 12)

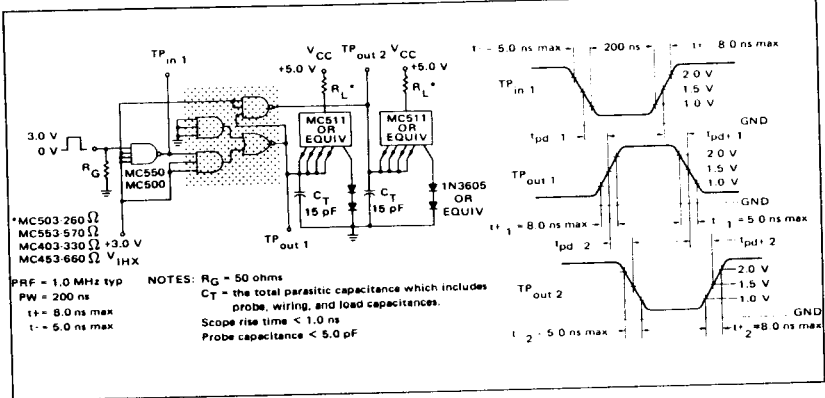
TRUTH TABLE

A	B	OUTPUT PIN # 11	PIN # 13	PIN # 14	OUTPUT PIN # 12
0	1	0	0	0	1
1	0	0	0	1	1
0	1	0	1	0	1
1	0	0	1	1	1
0	0	1	0	0	1
0	0	1	0	1	1
0	0	1	1	0	1
0	0	1	1	1	0

TYPE NO	INPUT LOADING FACTOR (I _F)	OUTPUT DRIVE (I _{OL})	TEMPERATURE RANGE
MC503 MC553	1 (-1.33 mA)	15 MC500 Series Gates (20 mA) 7 MC500 Series Gates (10 mA)	-55°C to +125°C
MC403 MC453	1 (-1.66 mA)	12 MC400 Series Gates (20 mA) 6 MC400 Series Gates (10 mA)	0°C to +75°C

SWITCHING TIME TEST CIRCUIT

VOLTAGE WAVEFORMS AND DEFINITIONS



ELECTRICAL CHARACTERISTICS (continued)

Characteristic		Pin		TEST CONDITIONS												V _{OH}		V _{OL}		V _{CC}		V _{EE}							
				MC503; MC553 Test Limits				MC403; MC453 Test Limits				TEST CURRENT / VOLTAGE APPLIED TO PINS LISTED BELOW:																	
				Symbol	Test	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max									Min	Max	Min	Max	Min	Max
Power Requirements (Total Device)		Under		-55°C		+25°C		+125°C		0°C		+75°C		I _{OH}		I _{OL}		V _{OH}		V _{OL}		V _{CC}		V _{EE}					
Maximum Power Supply Current		4		34		34		34		24		24		-		-		-		-		-		-		-			
Power Supply Drain		4		10		10		10		12		12		-		-		-		-		-		-		-		-	
Switching Parameters		1.11		-		22		-		22		-		Pulse In		Pulse Out		-		-		-		-		-		-	
Turn-On Delay		1.11		-		20		-		20		-		1		11		-		-		-		-		-		-	
Turn-Off Delay		1.11		-		22		-		22		-		1		11		-		-		-		-		-		-	
Rise Time		1.11		-		8.0		-		8.0		-		1		12		-		-		-		-		-		-	
Fall Time		1.11		-		6.0		-		6.0		-		1		12		-		-		-		-		-		-	
Primer Fall-Out		1.11		-		5.0		-		5.0		-		1		12		-		-		-		-		-		-	

* Primer Fall-Out