

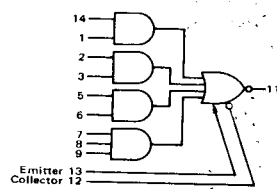
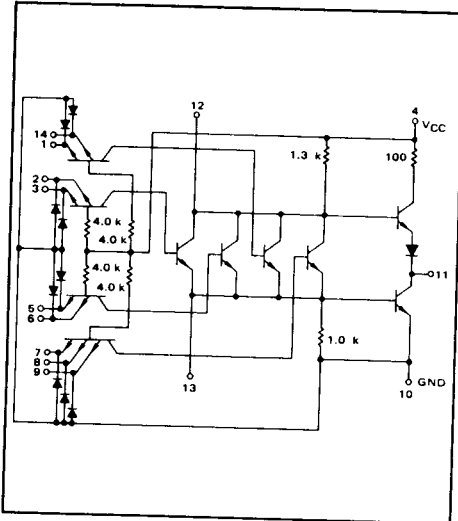
4-69

EXPANDABLE 4-WIDE  
2-2-2-3 INPUT  
"AND-OR-INVERT" GATE

MTTL I MC500/400 series

MC501 • MC551  
MC401 • MC451

This device consists of three 2-input and one 3-input AND gates internally ORed together and then inverted to provide the output. The common ORing nodes are available for expansion and up to 10 AND gates can be ORed together using the MC509 and the MC510 series expanders. Care should be taken to minimize the amount of capacitance on the expander terminals in order to maintain switching speeds.



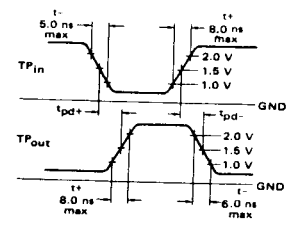
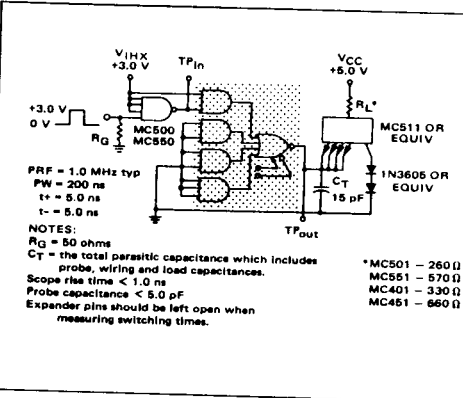
Positive Logic:  
 $11 = (14 + 1) + (2 + 3) + (5 + 6) + (7 + 8 + 9) + (\text{Expanders})$   
 Negative Logic:  
 $11 = (14 + 1) + (2 + 3) + (5 + 6) + (7 + 8 + 9) + (\text{Expanders})$

Total Power Dissipation = 30 mW typ/pkg  
 Propagation Delay Time = 12 ns typ

TYPE NO.	INPUT LOADING FACTOR (I <sub>F</sub> )	OUTPUT DRIVE (I <sub>OL</sub> )	TEMPERATURE RANGE
MC501	1	15 MC500 series Gates (20 mA)	-55°C to +125°C
MC551		7 MC500 series Gates (10 mA)	
MC401	1	12 MC400 series Gates (20 mA)	0° to +75°C
MC451		6 MC400 series Gates (10 mA)	

SWITCHING TIME TEST CIRCUIT

VOLTAGE WAVEFORMS AND DEFINITIONS



NOTES:  
 R<sub>G</sub> = 50 ohms  
 C<sub>T</sub> = the total parasitic capacitance which includes probe, wiring and load capacitances.  
 Scope rise time < 1.0 ns  
 Probe capacitance < 5.0 pF  
 Expander pins should be left open when measuring switching times.

\*MC501 - 260 Ω  
 \*MC551 - 570 Ω  
 \*MC401 - 330 Ω  
 \*MC451 - 660 Ω

488

