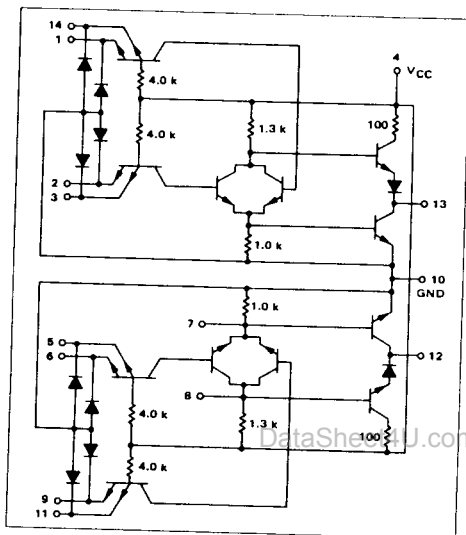


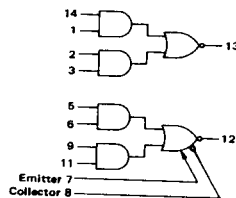
**EXPANDABLE  
DUAL 2-WIDE 2-INPUT  
"AND-OR-INVERT" GATE**

**MTTL I MC500/400 series**

**MC520 • MC570  
MC420 • MC470**



One side of this dual device consists of two 2-input AND gates ORed together and driving an output inverter. The other side consists of two 2-input gates ORed together and driving an output inverter with an output inverter with the ORing nodes made available for expansion. Up to 10 AND gates can be ORed together using the MC509 or MC510 expander series. Care should be taken to minimize the amount of capacitance on the expander terminals in order to maintain switching speeds.



Positive Logic:

$$13 = (1 \cdot 14) \cdot (2 \cdot 3)$$

$$12 = (5 \cdot 6) \cdot (9 \cdot 11) + (\text{Expander})$$

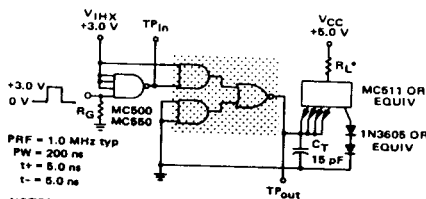
Total Power Dissipation = 40 mW typ/pkg

Propagation Delay Time = 12 ns typ

TYPE NO.	INPUT LOADING FACTOR (I <sub>f</sub> )	OUTPUT DRIVE (I <sub>OL</sub> )	TEMPERATURE RANGE
MC520	1	15 MC500 series Gates (20 mA)	-55°C to +125°C
MC570		7 MC500 series Gates (10 mA)	
MC420	1	12 MC400 series Gates (20 mA)	0° to +75°C
MC470		6 MC400 series Gates (10 mA)	

**SWITCHING TIME TEST CIRCUIT**

**VOLTAGE WAVEFORMS AND DEFINITIONS**



PRF = 1.0 MHz typ  
PW = 200 ns  
t<sub>r</sub> = 5.0 ns  
t<sub>f</sub> = 5.0 ns

**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
- When checking expander side, expander pins should be open.

\*MC520 - 260 Ω  
MC570 - 570 Ω  
MC420 - 330 Ω  
MC470 - 680 Ω

