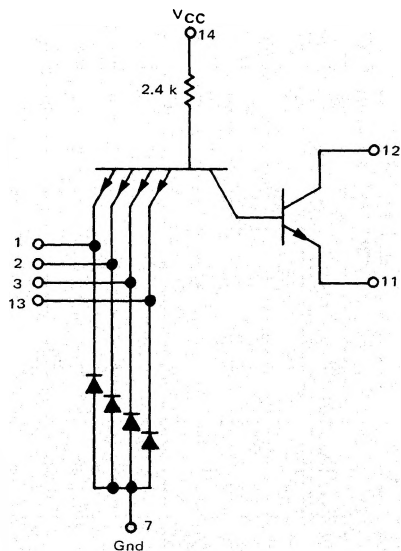


DUAL 4-INPUT EXPANDER
FOR "AND-OR-INVERT" GATES

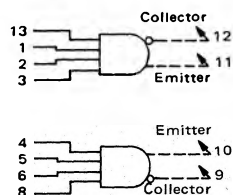
MC3100/MC3000 series

MC3130F • MC3030F
MC3130L • MC3030L,P
(54H60J) (74H60J,N)

CIRCUIT SCHEMATIC
1/2 OF CIRCUIT SHOWN



This device consists of two independent 4-input AND gates. The outputs of each gate are available as ORing nodes. Using the MC3030/3130 expander, with the MC3020/3120 expandable gate, up to four AND gates can be ORED together.



Input Loading Factor = 1

Full output loading factor of the expandable gate is maintained.

Total Power Dissipation = 15 mW typ/pkg

Propagation Delay Time:

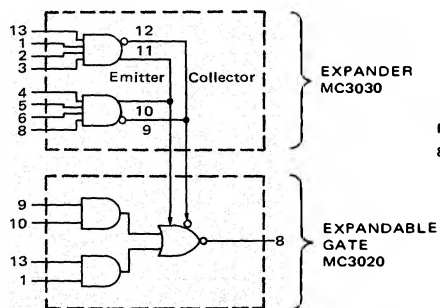
$\Delta t_{pd} = +1.0$ ns typ

When added to the expandable "AND-OR-INVERT" gate.

$\Delta t_{pd}/pF = +1.0$ ns pF typ

Caused by additional capacitance at expansion points.

APPLICATION: EXPANDABLE 2-WIDE 2-INPUT AND-OR-INVERT GATE
WITH A DUAL 4-INPUT EXPANDER CONNECTED



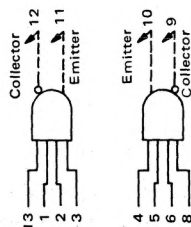
Positive Logic:

$$8 = (9 \bullet 10) + (13 \bullet 1) + (13 \bullet 1 \bullet 2 \bullet 3) + (4 \bullet 5 \bullet 6 \bullet 8)$$

Expandable Gate

Expander

Test procedures are shown for only one expander. The other expander is tested in a similar manner. Further, test procedures are shown for only one input of the expander being tested. To complete testing, sequence through remaining inputs.



* Ground inputs to gates not under test unless otherwise noted.