

**DM74H50(SN74H50) expandable dual 2-wide 2-input  
AND-OR-INVERT gate**

**DM74H51(SN74H51) dual 2-wide 2-input AND-OR-INVERT gate**

**DM74H52(SN74H52) expandable 2-2-2-3-input AND-OR gate**

**DM74H53(SN74H53) expandable 2-2-2-3-input  
AND-OR-INVERT gate**

**DM74H54(SN74H54) 4-wide 2-input AND-OR-INVERT gate**

**DM74H55(SN74H55) expandable 2-wide 4-input  
AND-OR-INVERT gate**

**general description**

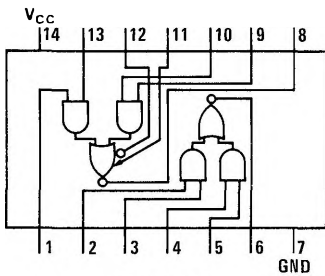
These complex gates provide the same logic functions as similarly numbered Series 74 devices, but operate at much higher speeds. They are completely compatible with Series 74 TTL, except that 74H expanders should be used on the expandable gates. Key features are:

- Without expanders, typical propagation delays are about 10 ns for the DM74H52 and 7 ns or less for the other gates
- With expanders, typical propagation delays are less than 15 ns for the DM74H52 and about 11 ns for the DM74H50, DM74H53 and DM74H55

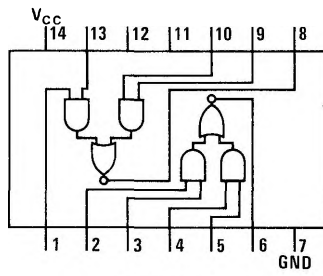
- Typical DC noise margin of 1V and low susceptibility to AC noise.

The DM74H51 and DM74H54 have the same pin configurations as the DM74H50 and DM74H53, but the expander inputs on the DM74H51 and DM74H54 are not functional. The DM74H50, DM74H53 and DM74H55 will accept one DM74H62 or up to four DM74H60 expanders. The DM74H52 will accept up to six DM74H61 expanders. Expander pins on the gates should be left open when not used.

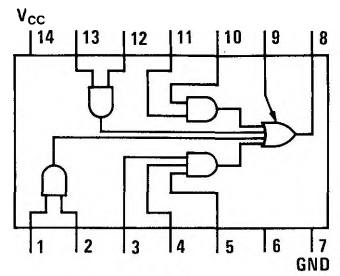
**connection diagrams**



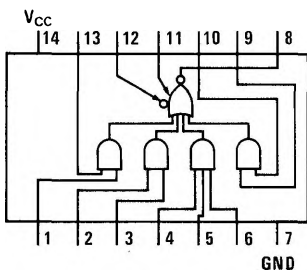
DM74H50



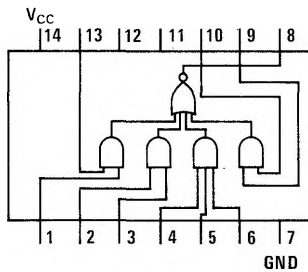
DM74H51



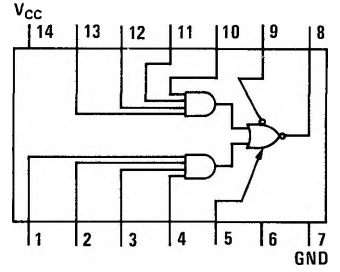
DM74H52



DM74H53



DM74H54



DM74H55