

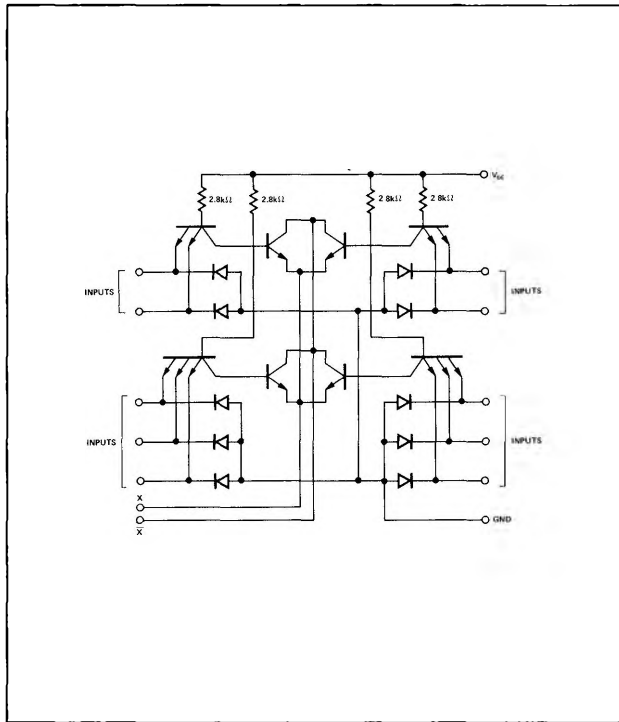
# 3-2-2-3-INPUT AND-OR EXPANDER (FOR USE WITH S54H50, S54H53, S54H55 CIRCUITS)

# S54H62

S54H62--A,F,W

DIGITAL 54/74 TTL SERIES

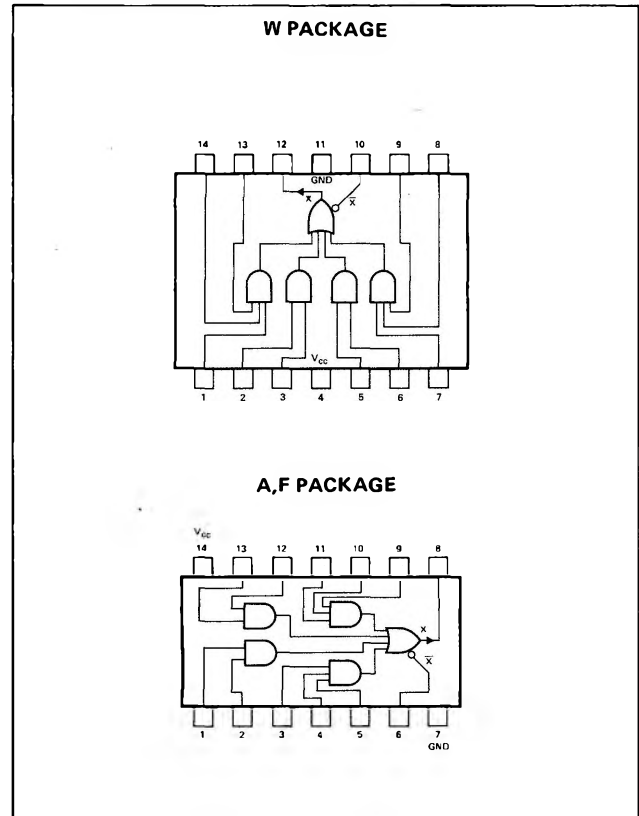
SCHMATIC (each gate)



NOTES:

1. Connect to X input of S54H50, S54H53, or S54H55 circuit
2. Connect to  $\bar{X}$  input of S54H50, S54H53, or S54H55 circuit
3. Component values shown are nominal.

PIN CONFIGURATIONS



RECOMMENDED OPERATING CONDITIONS

Supply Voltage $V_{CC}$	4.5V to 5.5V
Maximum number of expanders that may be fanned-in to one S54H50, S54H53, or S54H55 circuit	1

ELECTRICAL CHARACTERISTICS (unless otherwise noted  $T_A = -55^\circ\text{C}$  to  $125^\circ\text{C}$ )

PARAMETER	TEST CONDITIONS	MIN	TYP†	MAX	UNIT
$V_{in(1)}$	Logical 1 input voltage required at all input terminals of one AND section to ensure output is in the on state $V_{CC} = 4.5V$	2			V
$V_{in(0)}$	Logical 0 input voltage required at one input terminal of each AND section to ensure output is in the off state $V_{CC} = 4.5V$			0.8	V
$V_{on}$	On-state output voltage $V_{CC} = 4.5V, I_{on} = 5.85mA, T_A = -55^\circ\text{C}$ $V_{CC} = 5.5V, I_{on} = 7.85mA, T_A = 125^\circ\text{C}$			0.4	V
$I_{off}$	Off-state output current $V_{CC} = 4.5V, R = 575\Omega, T_A = -55^\circ\text{C}$			320	$\mu A$
$I_{on}$	On-state output current $V_{CC} = 4.5V, T_A = -55^\circ\text{C}$			-470	$\mu A$

**SIGNETICS DIGITAL 54/74 TTL SERIES — S54H62**

**ELECTRICAL CHARACTERISTICS (Cont'd)**

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
$I_{in(0)}$	Logical 0 level input current (each input)	$V_{CC} = 5.5V, V_{in} = 0.4V$			-2	mA
$I_{in(1)}$	Logical 1 level input current (each input)	$V_{CC} = 5.5V, V_{in} = 2.4V$ $V_{CC} = 5.5V, V_{in} = 5.5V$			50 1	$\mu A$ mA
$I_{CC(on)}$	On-state supply current	$V_{CC} = 5.5V, V_{in} = 4.5V, V_1 = 0.85V$		3.8	7	mA
$I_{CC(off)}$	Off-state supply current	$V_{CC} = 5.5V, V_{in} = 0, V_1 = 0.85V$		6	9	mA

**OUTPUT CAPACITANCE,  $V_{CC}$  and GND terminals open,  $T_A = 25^\circ C$**

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
$C_x$	Effective capacitance of output transistor $Q_1$	$f = 1 \text{ MHz}$		1.3		pF

† All typical values are at  $V_{CC} = 5V, T_A = 25^\circ C$ .