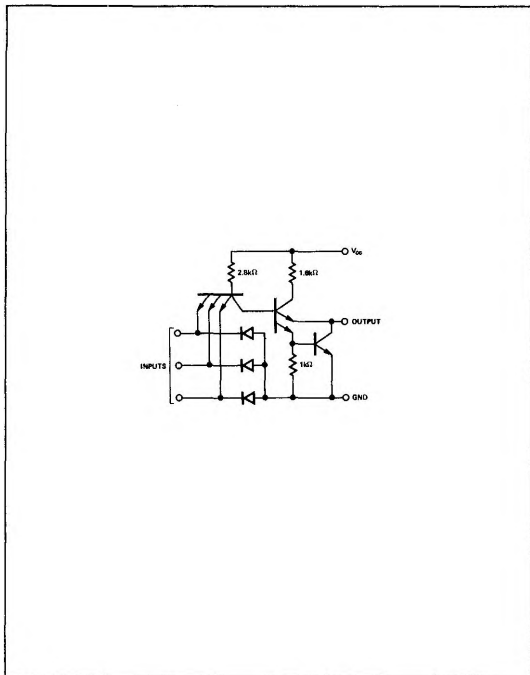


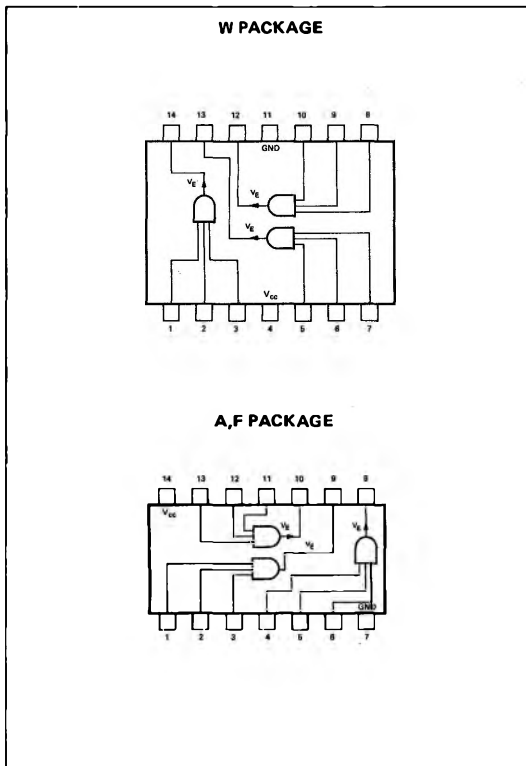
S54H61—A,F,W • N74H61—A,F

DIGITAL 54/74 TTL SERIES

SCHEMATIC (each expander)



PIN CONFIGURATIONS



NOTES:

- Component values shown are nominal.
- A total of six expander gates may be connected to the S54H52/N74H52 expander input.

RECOMMENDED OPERATING CONDITIONS

		MIN	NOM	MAX	UNIT
Supply Voltage V_{CC} :	S54H61 Circuits	4.5	5	5.5	V
	N74H61 Circuits	4.75	5	5.25	V
Operating Free-Air Temperature Range, T_A :	S54H61 Circuits	-55	25	125	°C
	N74H61 Circuits	0	25	70	°C

ELECTRICAL CHARACTERISTICS (over recommended operating free-air temperature range unless otherwise noted)

PARAMETER		TEST CONDITIONS*		MIN	TYP†	MAX	UNIT
$V_{in(0)}$	Logical 0 input voltage required at any input terminal to ensure output is in the off state	$V_{CC} = \text{MIN}$				0.8	V
I_{off}	Off-state reverse current	$V_{CC} = \text{MIN}$, $V_{off} = 2.2V$,	$V_{in(0)} = 0.8V$, $T_A = \text{MAX}$			50	μA
$I_{in(0)}$	Logical 0 level input current (each input)	$V_{CC} = \text{MAX}$, $V_{in} = 0.4V$				-2	mA
$I_{in(1)}$	Logical 1 level input current (each input)	$V_{CC} = \text{MAX}$, $V_{CC} = \text{MAX}$,	$V_{in} = 2.4V$, $V_{in} = 5.5V$			50 1	μA mA
$I_{CC(on)}$	On-state supply current	$V_{CC} = \text{MAX}$, $V_{in} = 4.5V$			11	16	mA
$I_{CC(off)}$	Off-state supply current	$V_{CC} = \text{MAX}$, $V_{in} = 0$			5	7	mA

DIGITAL 54/74 TTL SERIES ■ S54H61, N74H61

ELECTRICAL CHARACTERISTICS S54H61 circuits only

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
$V_{in(1)}$	Logical 1 input voltage required at all input terminals to ensure output is in the on state	$V_{CC} = 4.5V$	2			V
V_{on}	On-state output voltage	$V_{CC} = 4.5V,$ $I_{on} = 4.5mA,$ $V_{in(1)} = 2V,$ $T_A = -55^{\circ}C$			1	V

ELECTRICAL CHARACTERISTICS N74H61 circuits only

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
$V_{in(1)}$	Logical 1 input voltage required at all input terminals to ensure output is in the on state	$V_{CC} = 4.75V$	2			V
V_{on}	On-state output voltage	$V_{CC} = 4.75V,$ $I_{on} = 5.35mA,$ $V_{in(1)} = 2V,$ $T_A = 0^{\circ}C$			1	V

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

* For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable device type.

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