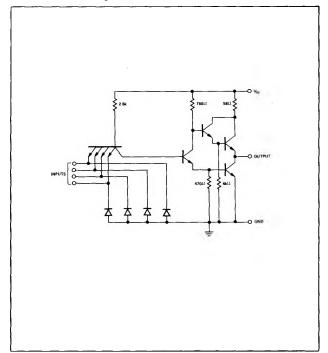
DUAL 4-INPUT POSITIVE NAND GATE | \$54H20

N74H20

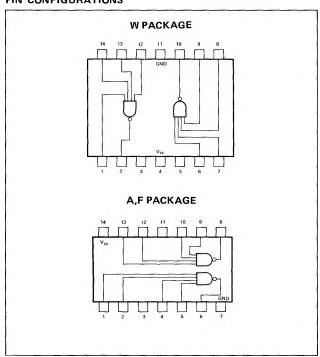
S54H20-A,F,W • N74H20-A,F

DIGITAL 54/74 TTL SERIES

SCHEMATIC (each gate)



PIN CONFIGURATIONS



RECOMMENDED OPERATING CONDITIONS

	MIN	NOM	MAX	UNIT
Supply Voltage V _{CC} : S54H20 Circuits	4.5	5	5.5	V
N74H20 Circuits	4.75	5	5.25	V
Normalized Fan-Out from each Output, N	1		10	
Operating Free-Air Temperature Range, T _A : S54H20 Circuits	-55	25	125	°c
N74H20 Circuits	0	25	70	°c

	PARAMETER		TEST CONDITIONS*		TYP**	MAX	UNIT
V _{in(1)}	Logical 1 input voltage required at all input terminals to ensure logical 0 level at output	V _{CC} = MIN		2			V
V _{in(0)}	Logical 0 input voltage required of any input terminal to ensure logical 1 level at output	V _{CC} = MIN,				0.8	\ \ \
V _{out(1)}	Logical 1 output voltage	$V_{CC} = MIN,$ $I_{load} = -500\mu A$	V _{in} = 0.8V,	2.4			V
V _{out(0)}	Logical 0 output voltage	V _{CC} = MIN, I _{sink} = 20mA	V _{in} = 2V,			0.4	\ \
¹ in(0)	Logical 0 level input current (each input)	V _{CC} = MAX,	$V_{in} = 0.4V$			-2	mA
¹ in(1)	Logical 1 level input current (each input)	$V_{CC} = MAX,$ $V_{CC} = MAX,$	V _{in} = 2.4V V _{in} = 5.5V			50 1	μA mA
¹os	Short circuit output current [†]	V _{CC} = MAX,		-40		-100	mA
¹ CC(0)	Logical 0 level supply current	V _{CC} = MAX,	V _{in} = 4.5V		13	20	mA
¹ CC(1)	Logical 1 level supply current	V _{CC} = MAX,	V _{in} = 0		5	8.4	mA

SIGNETICS DIGITAL 54/74 TTL SERIES - S54H20 • N74H20

SWITCHING CHARACTERISTICS, V_{CC} = 5V, T_A = 25°C, N = 10

	PARAMETER	Т	EST CONDITIONS	MIN	TYP	MAX	UNIT
tpd0	Propagation delay time to logical O level	C _L = 25pF,	R _L = 280Ω		7	10	ns
^t pd1	Propagation delay time to logical 1 level	CL = 25pF,	R _L = 280Ω		6	10	ns

^{*} 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°C.

† Not more than one output should be shorted at a time and duration of short circuit test should not exceed 1 second.