

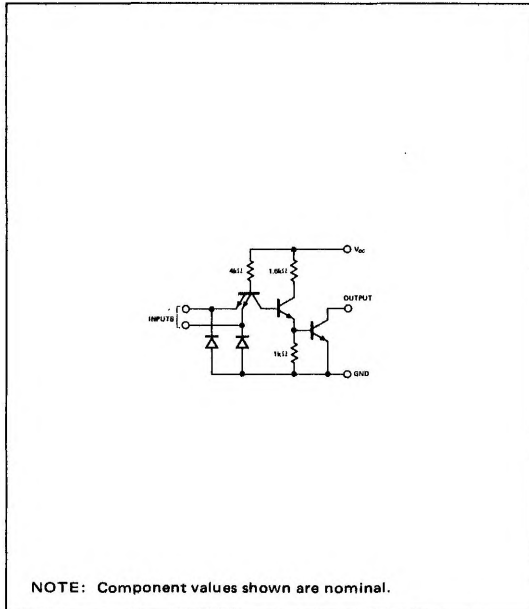
# signetics QUADRUPLE 2-INPUT POSITIVE NAND GATE WITH OPEN COLLECTOR OUTPUT

# S5403 N7403

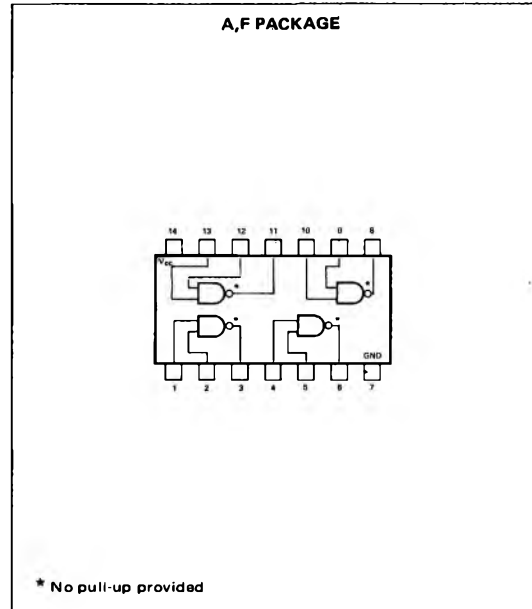
S5403-A,F • N7403-A,F

DIGITAL 54/74 TTL SERIES

SCHEMATIC (each gate)



PIN CONFIGURATIONS



RECOMMENDED OPERATING CONDITIONS

	MIN	NOM	MAX	UNIT
Supply Voltage $V_{CC}$ : S5403 Circuits	4.5	5	5.5	V
N7403 Circuits	4.75	5	5.25	V
Normalized Fan-Out from Output, N			10	
Operating Free-Air Temperature Range, $T_A$ : S5403 Circuits	-55	25	125	°C
N7403 Circuits	0	25	70	°C

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

PARAMETER	TEST CONDITIONS*	MIN	TYP**	MAX	UNIT
$V_{in(1)}$	Logical 1 input voltage required at both input terminals to ensure logical 0 (on) level at output	$V_{CC} = \text{MIN}$	2		V
$V_{in(0)}$	Logical 0 input voltage required at either input terminal to ensure logical 1 (off) level at output	$V_{CC} = \text{MIN}$ , $V_{in} = 0.8V$		0.8	V
$I_{out(1)}$	Output reverse current	$V_{CC} = \text{MIN}$ , $V_{out(1)} = 5.5V$		250	$\mu A$
$V_{out(0)}$	Logical 0 output voltage (on level)	$V_{CC} = \text{MIN}$ , $I_{sink} = 16mA$		0.4	V
$I_{in(0)}$	Logical 0 level input current (each input)	$V_{CC} = \text{MAX}$ , $V_{in} = 0.4V$		-1.6	mA
$I_{in(1)}$	Logical 1 level input current (each input)	$V_{CC} = \text{MAX}$ , $V_{CC} = \text{MAX}$ , $V_{in} = 2.4V$ , $V_{in} = 5.5V$		40 1	$\mu A$ mA

## ELECTRICAL CHARACTERISTICS (Cont'd)

PARAMETER		TEST CONDITIONS*		MIN	TYP	MAX	UNIT
$I_{CC(0)}$	Logical 0 level supply current	$V_{CC} = \text{MAX}$ ,	$V_{in} = 5\text{V}$		12	22	mA
$I_{CC(1)}$	Logical 1 level supply current	$V_{CC} = \text{MAX}$ ,	$V_{in} = 0$		4	8	mA

SWITCHING CHARACTERISTICS,  $V_{CC} = 5\text{V}$ ,  $T_A = 25^\circ\text{C}$ ,

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$t_{pd0}$	Propagation delay time to logical 0 level	$C_L = 15\text{pF}$ ,	$R_L = 400\Omega$		8	15	ns
$t_{pd1}$	Propagation delay time to logical 1 level	$C_L = 15\text{pF}$ ,	$R_L = 4\text{k}\Omega$		35	45	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  $V_{CC} = 5\text{V}$ ,  $T_A = 25^\circ\text{C}$