

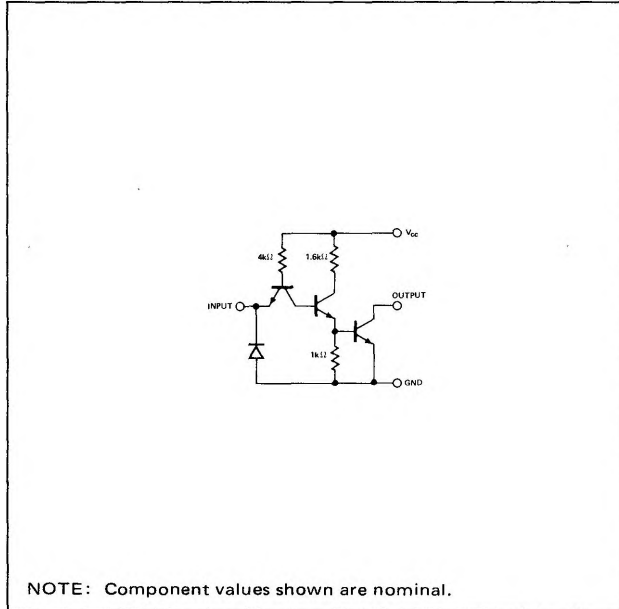
# HEX INVERTER WITH OPEN COLLECTOR OUTPUT

# S5405 N7405

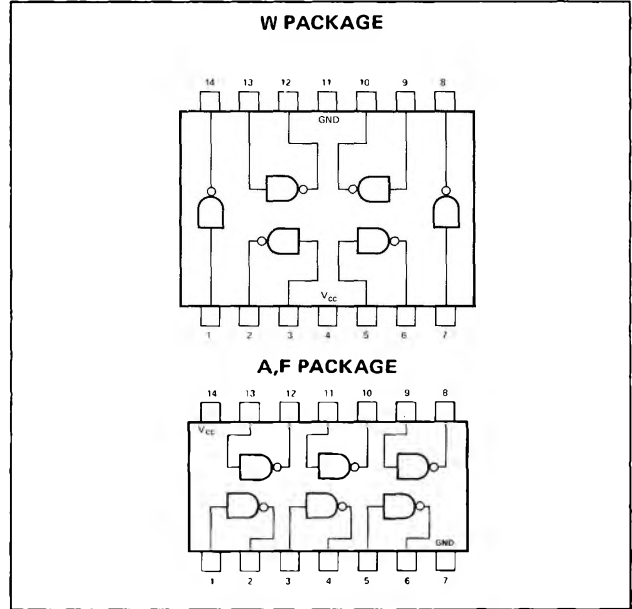
S5405-A,F,W • N7405-A,F

DIGITAL 54/74 TTL SERIES

## SCHEMATIC (each inverter)



## PIN CONFIGURATIONS



## RECOMMENDED OPERATING CONDITIONS

	MIN	NOM	MAX	UNIT
Supply Voltage $V_{CC}$ : S5405 Circuits	4.5	5	5.5	V
N7405 Circuits	4.75	5	5.25	V
Normalized Fan-Out from Output, N			10	
Operating Free-Air Temperature Range, $T_A$ : S5405 Circuits	-55	25	125	$^{\circ}\text{C}$
N7405 Circuits	0	25	70	$^{\circ}\text{C}$

## 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 input terminal to ensure logical 0 (on) level at output	$V_{CC} = \text{MIN}$	2		V
$V_{in(0)}$	Logical 0 input voltage required at input terminal to ensure logical 1 (off) level at output	$V_{CC} = \text{MIN}$		0.8	V
$I_{out(1)}$	Output reverse current	$V_{CC} = \text{MIN},$ $V_{out(1)} = 5.5\text{V}$		250	$\mu\text{A}$
$V_{out(0)}$	Logical 0 output voltage (on level)	$V_{CC} = \text{MIN},$ $I_{\text{sink}} = 16\text{mA}$		0.4	V
$I_{in(0)}$	Logical 0 level input current	$V_{CC} = \text{MAX},$		-1.6	$\text{mA}$
$I_{in(1)}$	Logical 1 level input current	$V_{CC} = \text{MAX},$ $V_{CC} = \text{MAX},$		40 1	$\mu\text{A}$ $\text{mA}$
$I_{CC(0)}$	Logical 0 level supply current	$V_{CC} = 5\text{V},$ $T_A = 25^{\circ}\text{C}$		18 33	$\text{mA}$
$I_{CC(1)}$	Logical 1 level supply current	$V_{CC} = 5\text{V},$ $T_A = 25^{\circ}\text{C}$		6 12	$\text{mA}$

**SIGNETICS DIGITAL 54/74 TTL SERIES - S5405 • N7405****SWITCHING CHARACTERISTICS,  $V_{CC} = 5V$ ,  $T_A = 25^\circ C$** 

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNIT
$t_{pd0}$	Propagation delay time to logical 0 level	$C_L = 15pF$ ,	$R_L = 400\Omega$		8	15	ns
$t_{pd1}$	Propagation delay time to logical 1 level	$C_L = 15pF$ ,	$R_L = 4 k\Omega$		40	55	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  $V_{CC} = 5V$ ,  $T_A = 25^\circ C$