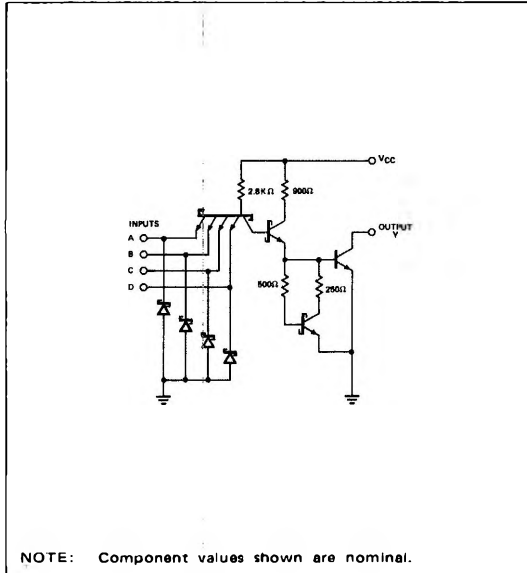


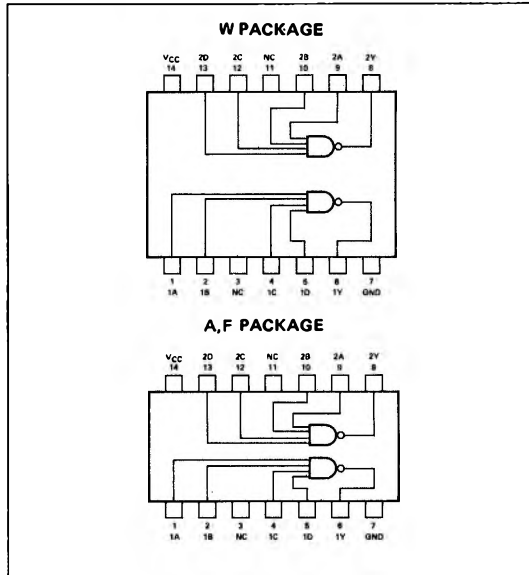
S54S22-A, F, W • N74S22-A, P

DIGITAL 54/74 TTL SERIES

SCHEMATIC (each gate)



PIN CONFIGURATIONS



RECOMMENDED OPERATING CONDITIONS

	S54S22			N74S22			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply Voltage V_{CC}	4.5	5	5.5	4.75	5	5.25	V
Normalized Fan-Out from any Output, N			10			10	
Operating Free-Air Temperature, T_A	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS *	MIN TYP ** MAX			UNIT
		MIN	TYP **	MAX	
V_{IH} High-level input voltage		2			V
V_{IL} Low-level input voltage				0.8	V
V_I Input clamp voltage	$V_{CC} = \text{MIN}, I_I = -18\text{mA}$			-1.2	V
I_{OH} High-level output current	$V_{CC} = \text{MIN}, V_{OH} = 5.5\text{V}$			250	μA
V_{OL} Low-level output voltage	$V_{CC} = \text{MIN}, I_{OL} = 20\text{mA}$			0.5	V
I_I Input current at maximum input voltage	$V_{CC} = \text{MAX}, V_I = 5.5\text{V}$			1	mA
I_{IH} High-level input current (each input)	$V_{CC} = \text{MAX}, V_I = 2.7\text{V}$			50	μA
I_{IL} Low-level input current (each input)	$V_{CC} = \text{MAX}, V_I = 0.5\text{V}$			-2	mA
I_{CCH} Supply current, high-level output (average per gate)	$V_{CC} = \text{MAX},$ All inputs at 0V		1.5	3.3	mA
I_{CCL} Supply current, low-level output (average per gate)	$V_{CC} = \text{MAX},$ All inputs at 5V		5	9	mA

DIGITAL 54/74 TTL SERIES ■ S54S22, N74S22

SWITCHING CHARACTERISTICS, $V_{CC} = 5V$, $T_A = 25^\circ C$, $N = 10$

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT
t_{PLH}	Propagation delay time, low-to-high-level output	$C_L = 15pF$	$R_L = 280\Omega$	NOTE 1	2	5	7.5	ns
		$C_L = 50pF$	$R_L = 280\Omega$		7.5			
t_{PHL}	Propagation delay time, high-to-low-level output	$C_L = 15pF$	$R_L = 280\Omega$		2	4.5	7	ns
		$C_L = 50pF$	$R_L = 280\Omega$		7			

* 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 $V_{CC} = 5V$, $T_A = 25^\circ C$.

NOTE 1: Load circuit and waveforms are shown on page 2-293