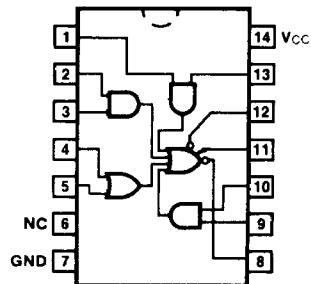


✓ 54/7453 011601
 ✓ 54H/74H53 011602

EXPANDABLE 4-WIDE, 2-INPUT AOI GATE ('53)
 EXPANDABLE 2-2-2-3-INPUT AOI GATE ('H53)

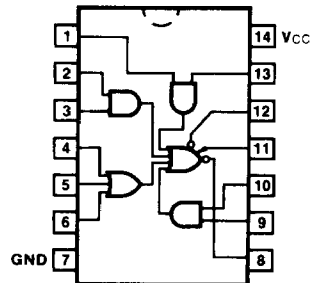
CONNECTION DIAGRAMS
 PINOUT A



ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		$V_{CC} = +5.0\text{ V} \pm 5\%$, $T_A = 0^\circ\text{C to } +70^\circ\text{C}$	$V_{CC} = +5.0\text{ V} \pm 10\%$, $T_A = -55^\circ\text{C to } +125^\circ\text{C}$	
Plastic DIP (P)	A	7453PC		9A
	B	74H53PC		
Ceramic DIP (D)	A	7453DC	5453DM	6A
	B	74H53DC	54H53DM	
Flatpak (F)	C	7453FC	5453FM	3I
	D	74H53FC	54H53FM	

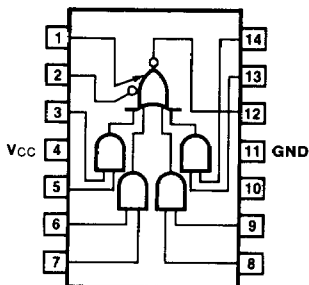
PINOUT B



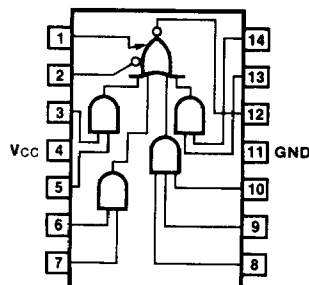
INPUT LOADING/FAN-OUT: See Section 3 for U.L. definitions

PINS	54/74 (U.L.) HIGH/LOW	54/74H (U.L.) HIGH/LOW
Inputs	1.0/1.0	1.25/1.25
Outputs	20/10	12.5/12.5

PINOUT C



PINOUT D



4

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE: Using Expander Pins

SYMBOL	PARAMETER		54/74		54/74H		UNITS	CONDITIONS		
			Min	Max	Min	Max				
V _{OH}	Output HIGH Voltage	XM			2.4		V	I ₁ = 320 μ A I ₂ = -320 μ A	I _{OH} = -500 μ A	
		XC			2.4					I ₁ = 570 μ A I ₂ = -570 μ A
V _{OH}	Output HIGH Voltage	XM	2.4				V	I ₁ = 0.15 mA I ₂ = -0.15 mA	I _{OH} = -400 μ A	
		XC	2.4							I ₁ = 270 μ A I ₂ = -270 μ A
V _{OL}	Output LOW Voltage	XM			0.4		V	I ₁ = 470 μ A R ₁ = 68 Ω	I _{OL} = 20 mA	
		XC			0.4					I ₁ = 600 μ A R ₁ = 63 Ω
V _{OL}	Output LOW Voltage	XM	0.4				V	I ₁ = 0.3 mA R ₁ = 138 Ω	I _{OL} = 16 mA	
		XC	0.4							I ₁ = 0.43 mA R ₁ = 130 Ω
V _{BE(Q)}	Base-Emitter Voltage of Output Transistor Q	XM			1.0		V	I ₁ = 700 μ A	I _{OL} = 20 mA R ₁ = 0 Ω	
		XC			1.0					I ₁ = 1.1 mA
		XM	1.1							I ₁ = 0.41 mA
		XC	1.0							I ₁ = 0.62 mA R ₁ = 0 Ω
I _{INX}	Expander-Node Input Current	XM			-5.85		mA	V _X = 1.4 V		
		XC			-6.3					
I _X	Expander Current	XM	2.9				mA	V ₁ = 0.4 V, I _{OL} = 16 mA		
		XC	3.1							
I _{CC}	Power Supply Current		8.0		11		mA	V _{IN} = Gnd	V _{CC} = Max	
I _{CC}			9.5		14			V _{IN} = Open		

AC CHARACTERISTICS: V_{CC} = +5.0 V, T_A = +25°C (See Section 3 for waveforms and load configurations)

SYMBOL	PARAMETER		54/74		54/74H		UNITS	CONDITIONS	
			Min	Max	Min	Max			
t _{PLH}	Propagation Delay		22		11		ns	Expander Pins Open Figs. 3-1, 3-4	
t _{PHL}			15		11				
t _{PLH}	Propagation Delay				11.4*		ns	C _X = 15 pF	
t _{PHL}					7.4*				

*Typical Value