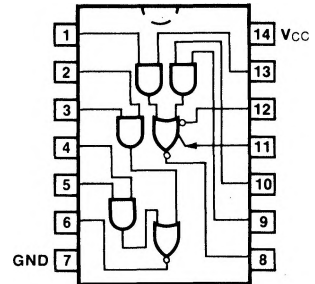


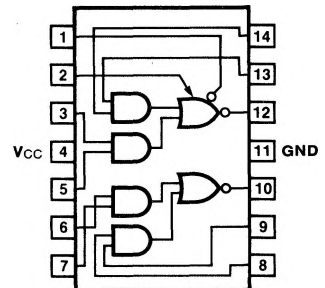
54/7450 54H/74H50

EXPANDABLE DUAL 2-WIDE 2-INPUT
AND-OR-INVERT GATE

CONNECTION DIAGRAMS
PINOUT A



PINOUT B



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	7450PC, 74H50PC		9A
Ceramic DIP (D)	A	7450DC, 74H50DC	5450DM, 54H50DM	6A
Flatpak (F)	B	7450FC, 74H50FC	5450FM, 54H50FM	3I

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

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE: Expander Pins Open

SYMBOL	PARAMETER	54/74	54/74H	UNITS	CONDITIONS	
		Min Max	Min Max			
I_{CCH} I_{CCL}	Power Supply Current	8.0 14	12.8 24	mA	$V_{IN} = \text{Gnd}$ $V_{IN} = \text{Open}$	$V_{CC} = \text{Max}$

DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE: Using Expander Pins

SYMBOL	PARAMETER		54/74		54/74H		UNITS	CONDITIONS	
			Min	Max	Min	Max			
VOH	Output HIGH Voltage	XM			2.4		V	I ₁ = 320 μA I ₂ = -320 μA	I _{OH} = -500 μA
		XC			2.4				
VOH	Output HIGH Voltage	XM	2.4				V	I ₁ = 0.15 mA I ₂ = -0.15 mA	I _{OH} = -400 mA
		XC	2.4						
VOL	Output LOW Voltage	XM			0.4		V	I ₁ = 470 μA R ₁ = 68 Ω	I _{OL} = 20 mA
		XC			0.4				
VOL	Output LOW Voltage	XM		0.4			V	I ₁ = 0.3 mA R ₁ = 138 Ω	I _{OL} = 16 mA
		XC		0.4					
VBE(Q)	Base-Emitter Voltage of Output Transistor Q	XM			1.0		V	I ₁ = 700 μA	I _{OL} = 20 mA R ₁ = 0 Ω
		XC			1.0				
		XM	1.1					I _{OL} = 16 mA R ₁ = 0 Ω	
		XC	1.0						I ₁ = 0.62 mA
I _{INX}	Expander-Node Input Current	XM			-5.85		mA	V _X = 1.4 V, V _{CC} = Min T _A = Min	
		XC			-6.3				
I _X	Expander Current	XM	2.9				mA	V ₁ = 0.4 V, I _{OL} = 16 mA V _{CC} = Min, T _A = Min	
		XC	3.1						

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} t _{PHL}	Propagation Delay		22	15	11	11	ns	Expander Pins Open Figs. 3-1, 3-4	
t _{PLH} t _{PHL}	Propagation Delay				11*	7.4*	ns	C _L = 25 pF R _L = 280 Ω, C _X = 15 pF	

*Typical Value

ADDED PROPAGATION DELAY TIME vs EXPANDER-NODE CAPACITANCE

