

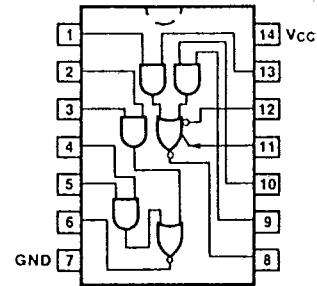
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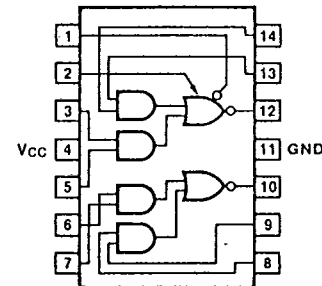
54/7450
54H/74H50

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 V ±5%, T _A = 0°C to +70°C	V _{CC} = +5.0 V ±10%, T _A = -55°C to +125°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 _{CC} H	Power Supply Current	8.0		12.8		mA	V _{IN} = Gnd
I _{CC} L		14		24			V _{IN} = Open

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 μA I ₂ = -320 μA I _{OH} = -500 μA	
		XC			2.4				
V _{OH}	Output HIGH Voltage	XM	2.4				V	I ₁ = 0.15 mA I ₂ = -0.15 mA I _{OH} = -400 mA	
		XC	2.4						
V _{OL}	Output LOW Voltage	XM			0.4		V	I ₁ = 470 μA R ₁ = 68 Ω I _{OL} = 20 mA	
		XC			0.4				
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						
V _{BE(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 _{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						

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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

