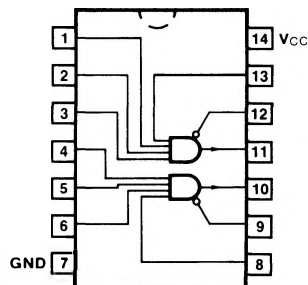


54/7460
54H/74H60
 DUAL 4-INPUT EXPANDER

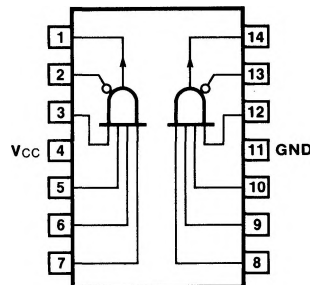
CONNECTION DIAGRAMS
PINOUT A



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	7460PC, 74H60PC		9A
Ceramic DIP (D)	A	7460DC, 74H60DC	5460DM, 54H60DM	6A
Flatpak (F)	B	7460FC, 74H60FC	5460FM, 54H60FM	3I

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 Outputs ¹	1.0/1.0 Note 2	1.25/1.25 Note 2

DC AND AC CHARACTERISTICS: See Section 3³

SYMBOL	PARAMETER	54/74		54/74H		UNITS	CONDITIONS ⁴	
		Min	Max	Min	Max			
V_{ON}	Output ON Voltage	0.4				V	$V_{CC} = \text{Min}$, $V_{IN} = 2.0 \text{ V}$ $V_1 = 1.0 \text{ V}$, $R = 1.1 \text{ k}\Omega$ $T_A = \text{Min}$	
V_{ON}	Output ON Voltage			0.4	0.4	V	$T_A = -55^\circ \text{ C}$ $I_{ON} = 5.85 \text{ mA}$ $T_A = 0^\circ \text{ C}$ $I_{ON} = 6.3 \text{ mA}$ $V_{CC} = \text{Min}$, $V_{IN} = 2.0 \text{ V}$ $V_1 = 1.0 \text{ V}$	
V_{ON}	Output ON Voltage			0.4	0.4	V	$T_A = +125^\circ \text{ C}$ $I_{ON} = 7.85 \text{ mA}$ $T_A = +70^\circ \text{ C}$ $I_{ON} = 7.4 \text{ mA}$ $V_{CC} = \text{Max}$, $V_{IN} = 2.0 \text{ V}$, $V_1 = 0.6 \text{ V}$	

1. A maximum of four expanders may be connected to one expandable AND-OR-Invert gate
2. Expander Outputs
3. DC limits apply over operating temperature range; AC limits apply at $T_A = +25^\circ \text{ C}$ and $V_{CC} = +5.0 \text{ V}$.
4. V_1 is applied to x output terminal during test.

DC AND AC CHARACTERISTICS: See Section 31 (Cont'd)

SYMBOL	PARAMETER	54/74		54/74H		UNITS	CONDITIONS ²	
		Min	Max	Min	Max			
I _{OFF}	Output OFF Current	150				μA	TA = -55°C	V _{CC} = Min, V _{IN} = 0.8 V, V ₁ = 4.5 V, R = 1.2 kΩ
		270					TA = 0°C	
I _{OFF}	Output OFF Current			320		μA	TA = -55°C	V _{CC} = Min, V _{IN} = 0.8 V, V ₁ = 4.5 V, R = 575 Ω
				570			TA = 0°C	
I _{ON}	Output ON Current	-0.3		-0.47		mA	TA = -55°C	V _{CC} = Min, V _{IN} = 2.0 V, V ₁ = 1.0 V
		-0.43		-0.6			TA = 0°C	
I _{CC(OFF)} I _{CC(ON)}	Power Supply Current	4.0 2.5		4.5 3.5		mA	V _{IN} = Open	V _{CC} = Max, V ₁ = 0.85 V
							V _{IN} = Gnd	
t _{PLH} t _{PHL}	Propagation Delay	30 20				ns	Figs. 3-1, 3-4	

OUTPUT CAPACITANCE: V_{CC} and Ground Terminals Open

SYMBOL	PARAMETER	54/74		54/74H		UNITS	CONDITIONS
		Min	Max	Min	Max		
C _X	Effective Capacitance of Output Transistor Q ₁			1.3 ³		pF	f = 1.0 MHz, TA = +25°C

1. DC limits apply over operating temperature range; AC limits apply at TA = +25°C and V_{CC} = +5.0 V.
2. V₁ is applied to x output terminal during test.
3. Typical Value