

5460/7460 Dual 4-Input Expander

	Schottky TTL				High-Speed TTL				Low-Power Schottky TTL				Standard TTL				Low-Power TTL									
	Device Type		Package		Device Type		Package		Device Type		Package		Device Type		Package		Device Type		Package							
	C	P	M	CF	C	P	M	CF	C	P	M	CF	C	P	M	CF	C	P	M	CF						
T.I.					SN54H60	J	□	W	□					SN5460	J	□	W	□								
FAIRCHILD					SN74H60	J	□	N	□					SN7460	J	□	N	□								
					FM54H60/FM9H60	D	□	□	F	□					FM5460/FM9N60	D	□	□	F	□						
MOTOROLA					FC74H60/FC9H60	D	□	P	□					FC7460/FC9N60	D	□	P	□								
					MC3130	L	□	□	F	□					MC5460	L	□	□	F	□						
N.S.C.					MC3030	L	□	P	□	F	□					MC7460	L	□	P	□	F	□				
					DM54H60	J	□	N	□					DM5460	J	□	N	□								
PHILIPS					DM74H60	J	□	N	□					DM7460	J	□	N	□								
					N74H60		□							FLY101/7460		□										
SIGNETICS					SS4H60	F	□	A	□	W	□					SS460	F	□	A	□	W	□				
					N74H60	F	□	A	□	W	□					N7460	F	□	A	□	W	□				
SIEMENS																										
FUJITSU					MB607	□	M	□						MB406	□	M	□									
HITACH														HD7460/HD2502	□	P	□									
MTSUBISHI														M53260/M5304		P	□									
NEC														μPB210	D	□	C	□								
TOSHIBA														TD3460A		P	□									

Electrical Characteristics SN5460 SN7460

absolute maximum ratings over operating free-air temperature range

Supply voltage, V <sub>CC</sub>	TV	Operating free air temperature range	SN54*	-55°C to 125°C
Input voltage	5.5V	temperature range	SN74*	0°C to 70°C
Intermittent voltage	5.5V	Storage temperature range		-65°C to 150°C

recommended operating conditions

	SN5460			SN7460			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V <sub>CC</sub>	4.5	5	5.5	4.75	5	5.25	V
Operating free-air temperature, T <sub>A</sub>	-55		75	0		70	°C

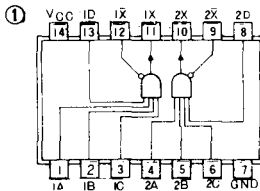
electrical characteristics over recommended operating free-air temperature range

PARAMETER	TEST CONDITIONS †	MIN	TYP ‡	MAX	UNIT	
V <sub>IH</sub>	High-level input voltage		2		V	
V <sub>IL</sub>	Low-level input voltage			0.8	V	
V <sub>XX(on)</sub>	On-state voltage between expander outputs	SN54* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>IH</sub> = 2V, I <sub>X</sub> = 3.5mA SN74* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>IH</sub> = 2V, I <sub>X</sub> = 0		V <sub>X</sub> = 1.1V V <sub>X</sub> = 1V	0.4	V
I <sub>X(on)</sub>	On-state expander current	SN54* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>IH</sub> = 2V, I <sub>X</sub> = 0 SN74* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>IH</sub> = 2V, I <sub>X</sub> = 0		V <sub>X</sub> = 1.1V V <sub>X</sub> = 1V	-0.3 -0.43	mA
I <sub>X(off)</sub>	Off-state expander current	SN54* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>X</sub> = 4.5V SN74* V <sub>CC</sub> = MIN, T <sub>A</sub> = MIN, V <sub>X</sub> = 4.5V		V <sub>IL</sub> = 0.8V, R <sub>X</sub> = 1.2kΩ	150 270	μA
I <sub>I</sub>	Input current at maximum input voltage	V <sub>CC</sub> = MAX, V <sub>I</sub> = 5.5V			1	mA
I <sub>IH</sub>	High-level input current	V <sub>CC</sub> = MAX, V <sub>I</sub> = 2.4V			40	mA
I <sub>IL</sub>	Low-level input current	V <sub>CC</sub> = MAX, V <sub>I</sub> = 0.4V			-1.6	mA
I <sub>CC(on)</sub>	Supply current, expander on	V <sub>CC</sub> = MAX, V <sub>X</sub> = 0.85V, I <sub>X</sub> = 0			1.2 2.5	mA
I <sub>CC(off)</sub>	Supply current, expander off	V <sub>CC</sub> = MAX, V <sub>X</sub> = 0.85V, I <sub>X</sub> = 0			2 4	mA

Pin Assignments (Top View)

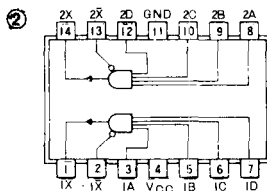
'60 positive logic:

X = ABCD when connected to X and X̄ inputs of SN5423/SN7423, SN5450/SN7450, or SN5453/SN7453

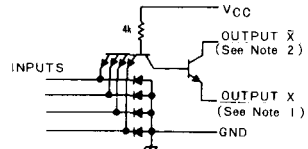


'H60 positive logic:

X = ABCD when connected to X and X̄ inputs of SN54H50/SN74H50, SN54H53/SN74H53, or SN54H55/SN74H55

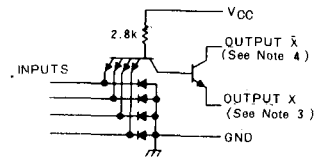


Schematics (each gate)



'60 CIRCUIT

NOTES: 1. Connect to X input of '23, '50, or '53 circuit.  
2. Connect to X̄ input of '23, '50, or '53 circuit.



'H60 CIRCUIT

NOTES: 3. Connect to X input of 'H50, 'H53, or 'H55 circuit.  
4. Connect to X̄ input of 'H50, 'H53, or 'H55 circuit.

Resistor values shown are nominal and in ohms.

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

‡ All typical values are at V<sub>CC</sub> = 5V, T<sub>A</sub> = 25°C.

The '23, '50, and '53 are designed for use with up to four '60 expanders.

The 'H50, 'H53, and 'H55 are designed for use with up to four 'H60 expanders.