

TYPES SN54H61, SN74H61 TRIPLE 3-INPUT EXPANDERS

REVISED DECEMBER 1983

- Package Options Include Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

description

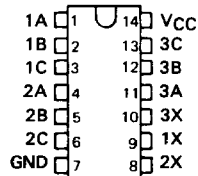
These devices contain three independent 3-input expanders. They perform the Boolean function $X = ABC$ when connected to X input of SN54H52/SN74H52.

The SN54H61 is characterized for operation over the full military temperature range of -55°C to 125°C . The SN74H61 is characterized for operation from 0°C to 70°C .

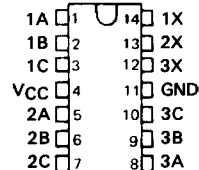
logic diagram (each gate)



SN54H61 ... J PACKAGE
SN74H61 ... J OR N PACKAGE
(TOP VIEW)

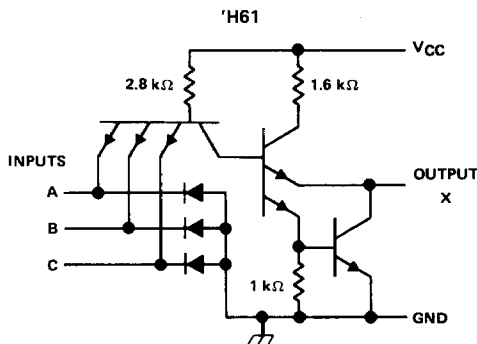


SN54H61 ... W PACKAGE
(TOP VIEW)



NC - No internal connection

schematic (each gate)



Resistor values shown are nominal.

3

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PRODUCTION DATA
This document contains information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

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INSTRUMENTS

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TYPES SN54H61, SN74H61 TRIPLE 3-INPUT EXPANDERS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage	5.5 V
Operating free-air temperature range: SN54H61	-55°C to 125°C
SN74H61	0°C to 70°C
Storage temperature range	-65°C to 150°C

NOTE 1: Voltage values are with respect to network ground terminal.

recommended operating conditions

	SN54H61			SN74H61			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
V_{IH} High-level input voltage	2			2			V
V_{IL} Low-level input voltage		0.8			0.8		V
T_A Operating free-air temperature	-55		125	0		70	°C

The 'H52 is designed for use with up to six 'H61 expanders.

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS †	SN54H61			SN74H61			UNIT
		MIN	TYP ‡	MAX	MIN	TYP ‡	MAX	
$V_{X(on)}$	$V_{CC} = \text{MIN}$, $V_{IH} = 2 \text{ V}$, $I_X = 4.5 \text{ mA}$, $T_A = \text{MIN}$		1			1	V	
	$V_{CC} = \text{MIN}$, $V_{IH} = 2 \text{ V}$, $I_X = 5.35 \text{ mA}$, $T_A = \text{MIN}$							
$I_{X(off)}$	$V_{CC} = \text{MIN}$, $V_{IL} = 0.8 \text{ V}$, $V_X = 2.2 \text{ V}$, $T_A = \text{MAX}$			50		50	μA	
I_I	$V_{CC} = 5.5 \text{ V}$, $V_I = 5.5 \text{ V}$			1		1	mA	
I_{IH}	$V_{CC} = 5.5 \text{ V}$, $V_I = 2.4 \text{ V}$			50		50	μA	
I_{IL}	$V_{CC} = 5.5 \text{ V}$, $V_I = 0.4 \text{ V}$			-2		-2	mA	
$I_{CC(on)}$	$V_{CC} = 5.5 \text{ V}$, $V_I = 4.5 \text{ V}$		11	16		11	16	mA
$I_{CC(off)}$	$V_{CC} = 5.5 \text{ V}$, $V_I = 0 \text{ V}$		5	7		5	7	mA
C_X	V_{CC} and inputs open; $f = 1 \text{ MHz}$		5.4			5.4	pF	

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

‡ All typical values are at $V_{CC} = 5 \text{ V}$ (except C_X), $T_A = 25^\circ\text{C}$.

3

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