SN54H62, SN74H62

4-Wide AND-OR Expanders

These devices contain 4-mode AND-OR expanders. In the J and N packages they perform the Boolean function X = AB + CDE + FGH + IJ when connected to X and X inputs of SN54H50/SN74H50, SN54H53/SN74H53, or SN54H55/SN74H55. In a W package the function is Y = ABC + DE + FG + HIJ. The SN54H62 is characterized for operation over the full military temperature range of -55°C to 125°C while the SN74H62 is characterized for operation from 0°C to 70°C.

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

• ISO-9001
• AS9120 certification
• Qualified Manufacturers List (QML) MIL-PRF-38535
    • Class Q Military
    • Class V Space Level
• Qualified Suppliers List of Distributors (QSLD)
    • Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

- **Package Options Include Plastic and Ceramic DIPs**

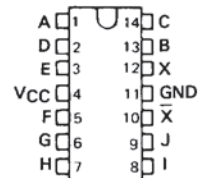- **Dependable Texas Instruments Quality and Reliability**

description

These devices contain 4-wide AND-OR expanders. In the J and N packages they perform the Boolean function $X = AB + CDE + FGH + IJ$ when connected to X and $\overline{X}$ inputs of SN54H50/SN74H50, SN54H53/SN74H53, or SN54H55/SN74H55. In a W package the function is $Y = ABC + DE + FG + HIJ$.

The SN54H62 is characterized for operation over the full military temperature range of $-55\,^{\circ}C$ to $125\,^{\circ}C$. The SN74H62 is characterized for operation from $0\,^{\circ}C$ to $70\,^{\circ}C$.

SN54H62 . . . J PACKAGE
SN74H62 . . . J OR N PACKAGE
(TOP VIEW)

A	1	14	V_{CC}
B	2	13	J
C	3	12	I
D	4	11	H
E	5	10	G
$\overline{X}$	6	9	F
GND	7	8	X
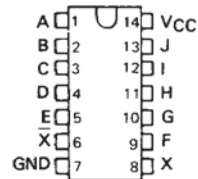
SN54H62 . . . W PACKAGE
(TOP VIEW)

A	1	14	C
D	2	13	B
E	3	12	X
V_{CC}	4	11	GND
F	5	10	$\overline{X}$
G	6	9	J
H	7	8	I

NC – No internal connection

logic diagrams

J OR N PACKAGE
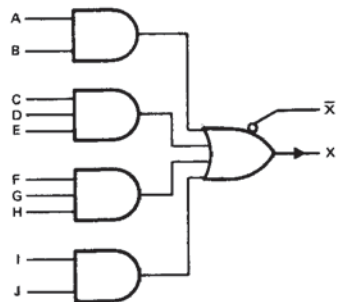
W PACKAGE
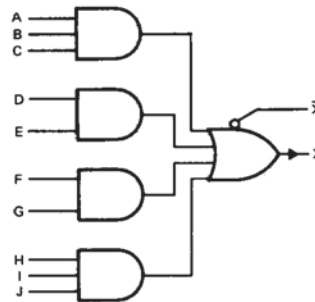
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TEXAS INSTRUMENTS
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schematic

'H62
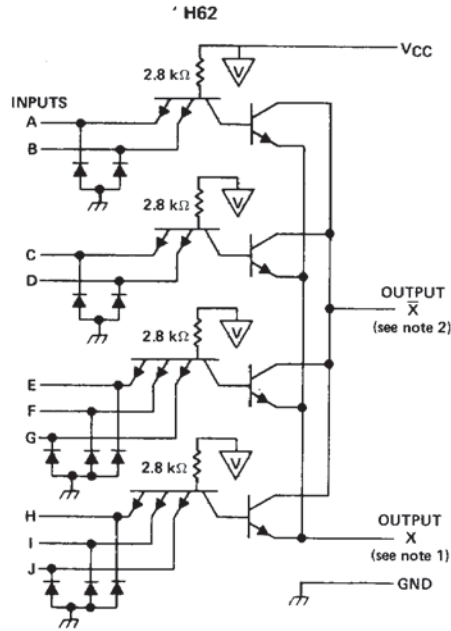
NOTES: 1. Connect to X input of 'H50, 'H53, or 'H55 circuit.
2. Connect to $\overline{X}$ input of 'H50, 'H53, or 'H55 circuit.
Resistor values shown are nominal.

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

Supply voltage, V_{CC} (see Note 3) . . . . 7 V
Input voltage . . . . 5.5 V
Operating free-air temperature range: SN54H62 . . . . − 55°C to 125°C
                                        SN74H62 . . . . 0°C to 70°C
Storage temperature range . . . . − 65°C to 150°C

NOTE 3: Voltage values are with respect to network ground terminal.

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recommended operating conditions

		SN54H62 MIN	SN54H62 NOM	SN54H62 MAX	SN74H62 MIN	SN74H62 NOM	SN74H62 MAX	UNIT
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

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

PARAMETER	TEST CONDITIONS[†]	SN54H62 MIN	SN54H62 TYP[‡]	SN54H62 MAX	SN74H62 MIN	SN74H62 TYP[‡]	SN74H62 MAX	UNIT
$V_{XX(on)}$	$V_{CC} = $ MIN, $V_{IH} = 2$ V, $V_X = 1.1$ V, $I_{\overline{X}} = 5.85$ mA, $T_A = -55°C$			0.4				V
	$V_{CC} = $ MIN, $V_{IH} = 2$ V, $V_X = 1$ V, $I_{\overline{X}} = 6.3$ mA, $T_A = 0°C$						0.4	
	$V_{CC} = $ MAX, $V_{IH} = 2$ V, $V_X = 1$ V, $I_{\overline{X}} = 7.85$ mA, $T_A = 125°C$			0.4				
	$V_{CC} = $ MAX, $V_{IH} = 2$ V, $V_X = 1$ V, $I_{\overline{X}} = 7.4$ mA, $T_A = 70°C$						0.4	
$I_{X(on)}$	$V_{CC} = $ MIN, $V_{IH} = 2$ V, $V_X = 1.1$ V, $I_{\overline{X}} = 0$, $T_A = -55°C$	−0.47						mA
	$V_{CC} = $ MIN, $V_{IH} = 2$ V, $V_X = 1$ V, $I_{\overline{X}} = 0$, $T_A = 0°C$				−0.6			
$I_{X(off)}$	$V_{CC} = $ MIN, $V_{IL} = 0.8$ V, $V_{\overline{X}} = 4.5$ V, $R_X = 575$ Ω, $T_A = -55°C$			0.32				mA
	$V_{CC} = $ MIN, $V_{IL} = 0.8$ V, $V_{\overline{X}} = 4.5$ V, $R_X = 575$ Ω, $T_A = 0°C$						0.57	
I_I	$V_{CC} = $ MAX, $V_I = 5.5$ V			1			1	mA
I_{IH}	$V_{CC} = $ MAX, $V_I = 2.4$ V			50			50	µA
I_{IL}	$V_{CC} = $ MAX, $V_I = 0.4$ V			−2			−2	mA
$I_{CC(on)}$	$V_{CC} = $ MAX, $V_I = 4.5$ V, $V_X = 0.85$ V, $I_{\overline{X}} = 0$		3.8	7		3.8	7	mA
$I_{CC(off)}$	$V_{CC} = $ MAX, $V_I = 0$, $V_X = 0.85$ V, $I_{\overline{X}} = 0$		6	9		6	9	mA
$C_{\overline{X}}$	V_{CC}, inputs, and X open; f = 1 MHz		6.0			6.0		pF

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at $V_{CC} = 5$ V (except $C_{\overline{X}}$), $T_A = 25°C$.

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