MOTOROLA

MC74AC520
MC74ACT520
MC74AC521
MC74ACT521

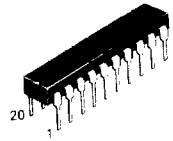
Product Preview

8-Bit Identity Comparator

8-BIT IDENTITY COMPARATOR

The MC74AC534/74ACT534 is a high-speed, low-power octal D-type flip-flop featuring separate D-type inputs for each flip-flop and 3-state outputs for bus-oriented applications. A buffered Clock (CP) and Output Enable ($\overline{OE}$) are common to all flip-flops. The MC74AC534/74ACT534 is the same as the MC74AC374/74ACT374 except that the outputs are inverted.

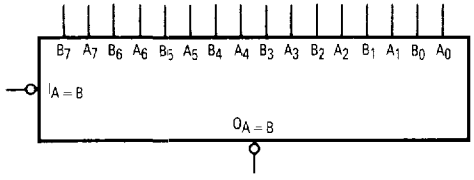
- Edge-Triggered D-Type Inputs
- Buffered Positive Edge-Triggered Clock
- 3-State Outputs for Bus-Oriented Applications
- Outputs Source/Sink 24 mA
- 'ACT534 Has TTL Compatible Inputs
- Inverted Output Version of MC74AC374/74ACT374

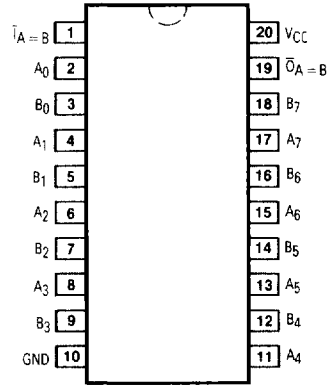


N SUFFIX
CASE 738-03
PLASTIC

DW SUFFIX
CASE 751D-03
PLASTIC

LOGIC SYMBOL





PIN NAMES

A_0–A_7	Word A Inputs
B_0–B_7	Word B Inputs
$\overline{I}_{A=B}$	Expansion or Enable Input
$\overline{O}_{A=B}$	Identity Output

TRUTH TABLE

Inputs		Outputs
$\overline{I}_{A=B}$	A, B	$\overline{O}_{A=B}$
L	A = B*	L
L	A ≠ B	H
H	A = B*	H
H	A ≠ B	H

H = HIGH Voltage Level
L = LOW Voltage Level
*$A_0 = B_0$, $A_1 = B_1$, $A_2 = B_2$, etc.

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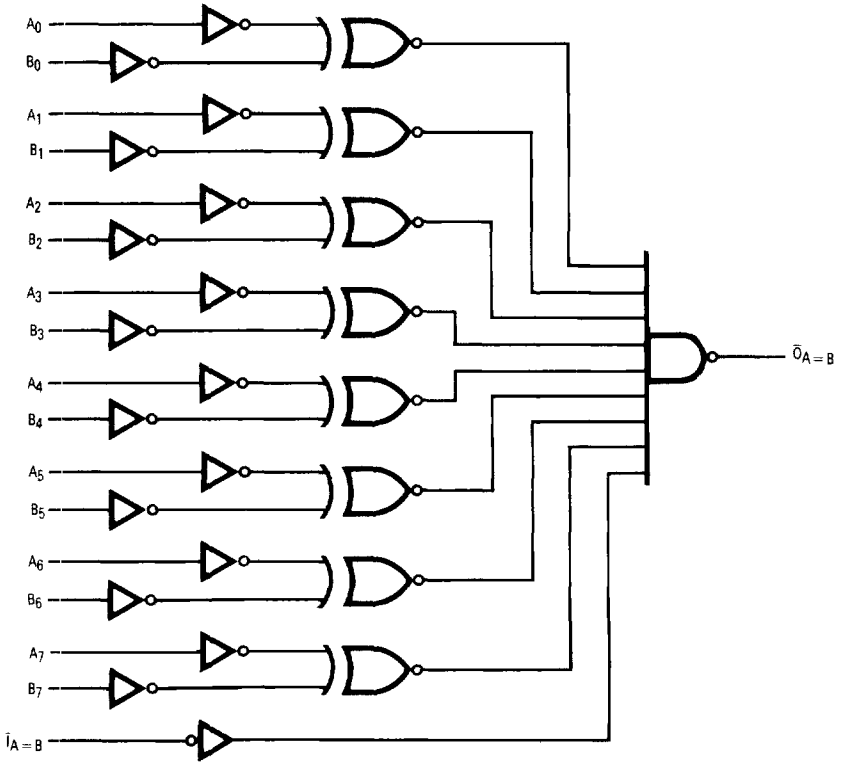
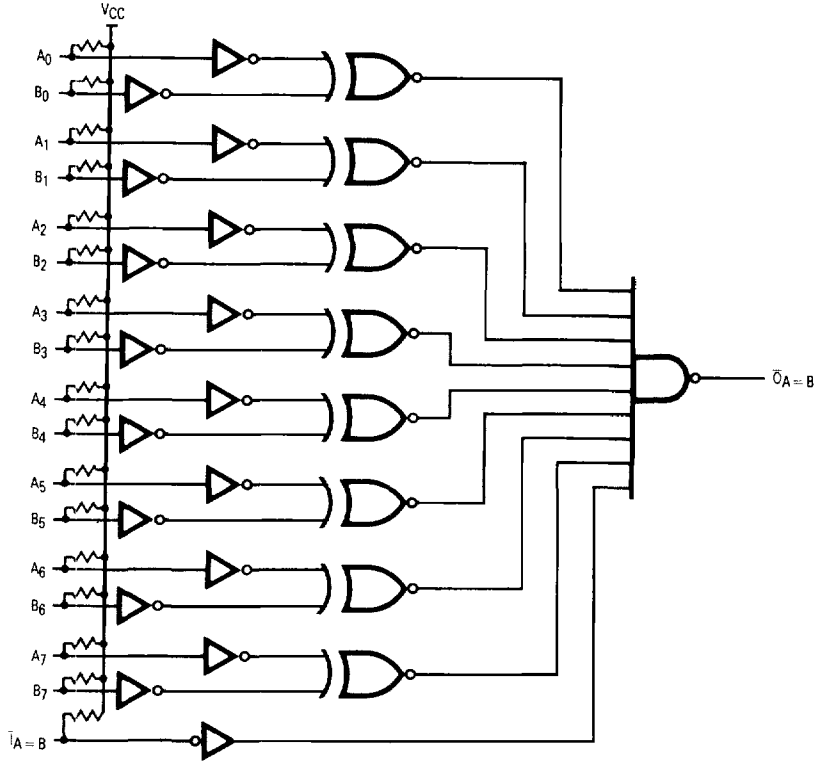
LOGIC DIAGRAM (MC74AC521/74ACT521)



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

LOGIC DIAGRAM (MC74AC520/74ACT520)



Please note that this diagram is provided only for the understanding of logic operations and should not be used to estimate propagation delays.

DC CHARACTERISTICS (unless otherwise specified)

Symbol	Parameter	Value	Units	Test Conditions
I_{CC}	Maximum Quiescent Supply Current	80	μA	$V_{IN} = V_{CC}$ or Ground, $V_{CC} = 5.5$ V, T_A = Worst Case
I_{CC}	Maximum Quiescent Supply Current	8.0	μA	$V_{IN} = V_{CC}$ or Ground, $V_{CC} = 5.5$ V, $T_A = 25°C$
I_{CCT}	Maximum Additional I_{CC}/input ('ACT520/521)	1.5	mA	$V_{IN} = V_{CC} - 2.1$ V $V_{CC} = 5.5$ V, T_A = Worst Case

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AC CHARACTERISTICS (For Figures and Waveforms — See Section 3)

Symbol	Parameter	V_{CC}* (V)	74AC T_A = +25°C, C_L = 50 pF			74AC T_A = −40°C to +85°C, C_L = 50 pF		Units	Fig. No.
			Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay A_n or B_n to $\overline{O}_{A=B}$	3.3 5.0		13 9.5				ns	3-6
t_{PHL}	Propagation Delay A_n or B_n to $\overline{O}_{A=B}$	3.3 5.0		13 9.5				ns	3-6
t_{PLH}	Propagation Delay $A=B$ to $\overline{O}_{A=B}$	3.3 5.0		9.0 6.5				ns	3-6
t_{PHL}	Propagation Delay $A=B$ to $\overline{O}_{A=B}$	3.3 5.0		9.5 7.0				ns	3-6

*Voltage Range 3.3 is 3.3 V ± 0.3 V
Voltage Range 5.0 is 5.0 V ± 0.5 V

AC CHARACTERISTICS (For Figures and Waveforms — See Section 3)

Symbol	Parameter	V_{CC}* (V)	74ACT T_A = +25°C, C_L = 50 pF			74ACT T_A = −40°C to +85°C, C_L = 50 pF		Units	Fig. No.
			Min	Typ	Max	Min	Max		
t_{PLH}	Propagation Delay A_n or B_n to $\overline{O}_{A=B}$	5.0		9.5				ns	3-6
t_{PHL}	Propagation Delay A_n or B_n to $\overline{O}_{A=B}$	5.0		9.5				ns	3-6
t_{PLH}	Propagation Delay $I_{A=B}$ to $\overline{O}_{A=B}$	5.0		6.5				ns	3-6
t_{PHL}	Propagation Delay $I_{A=B}$ to $\overline{O}_{A=B}$	5.0		7.0				ns	3-6

*Voltage Range 5.0 is 5.0 V ± 0.5 V

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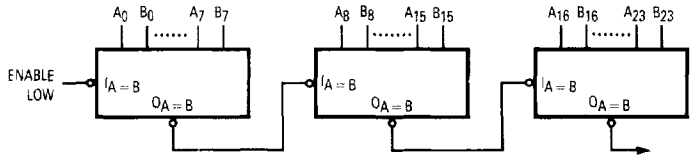
CAPACITANCE

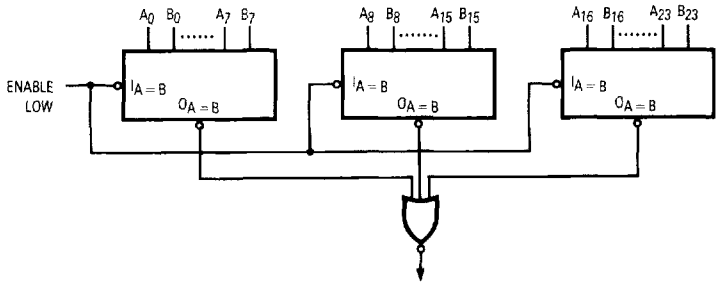
Symbol	Parameter	Value Typ	Units	Test Conditions
C_{IN}	Input Capacitance	4.5	pF	V_{CC} = 5.0 V
C_{PD}	Power Dissipation Capacitance		pF	V_{CC} = 5.0 V

APPLICATIONS

RIPPLE EXPANSION



PARALLEL EXPANSION



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