

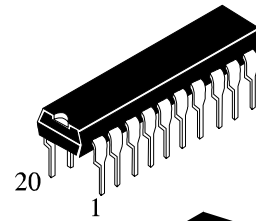
IN74LV623

OCTAL 3-STATE NONINVERTING BUS TRANSCEIVER

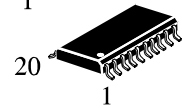
Microcircuits IN74LV623 are pin-to-pin compatible with microcircuits of series 74HC623A, 74HCT623A. Input voltage levels are compatible with standard C-MOS levels

Features:

- Output voltage levels are compatible with input levels C-MOS, N-MOS and TTL microcircuits.
- Supply voltage range from 1.2 to 3.6 V.
- Maximum input current: 1.0 mA; 0.1 mA at T = 25 °C.
- Consumption current 8 mA.



N SUFFIX
PLASTIC



DW SUFFIX
SOIC

ORDERING INFORMATION

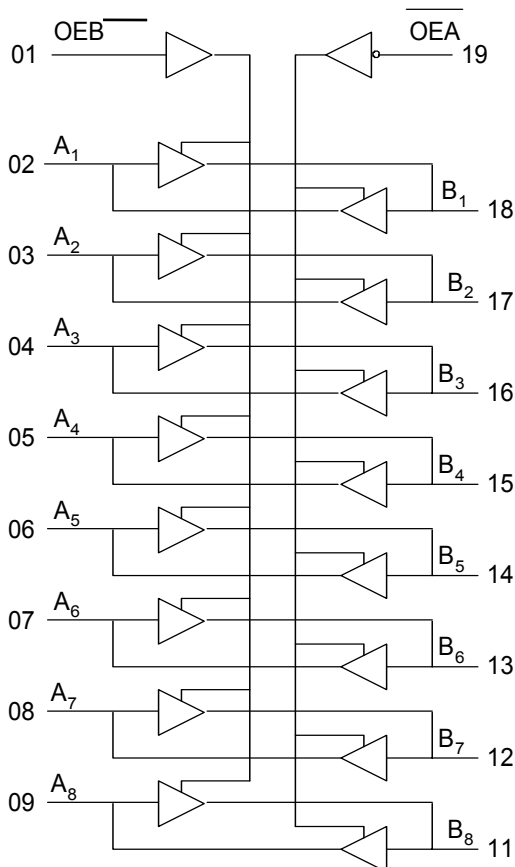
IN74LV623N Plastic

IN74LV623D SOIC

IZ74LV623 Chip

T_A = -40° ÷ 125° C for all packages

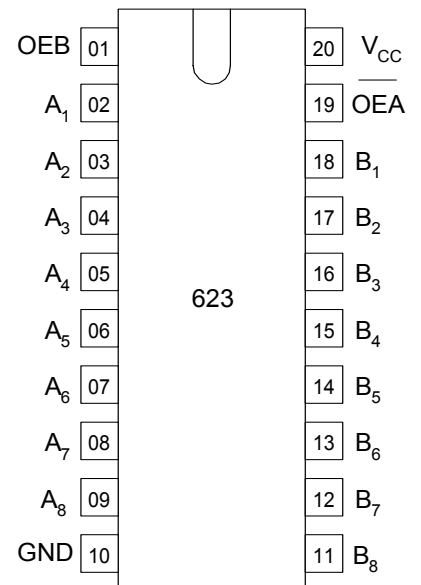
Block diagram



Truth table

Inputs		Inputs/Outputs	
OEB	OEA	A	B
L	L	A=B	Input
H	H	Input	B=A
L	H	Z	Z
H	H	A=B	B=A

Pinout



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Absolute maximum ratings*

Symbol	Parameter	Value	Unit
V_{CC}	Supply voltage	from -0.5 to +5.0	V
I_{IK}^{*1}	Input diode current	± 20	mA
I_{OK}^{*2}	Output diode current	± 50	mA
I_O^{*3}	Output current source-drain	± 35	mA
I_{CC}	Supply output current	± 70	mA
I_{GND}	Common output current	± 70	mA
P_D	Dissipation power at free air change, Plastic DIP SOIC *4	750 500	mW
T_{stg}	Storage temperature	from -65 to +150	$^{\circ}C$
T_L		260	$^{\circ}C$

* Under absolute maximum conditions operation of microcircuits is not guaranteed. Operation under maximum conditions is guaranteed.

*1 If $V_I < -0.5V$ or $V_I > V_{CC} + 0.5 V$.

*2 If $V_O < -0.5V$ or $V_O > V_{CC} + 0.5 V$.

*3 If $-0.5V < V_O < V_{CC} + 0.5 V$.

*4 Under operation in the temperature range from $65^{\circ}C$ to $125^{\circ}C$ value of dissipation power drops down - to $10 \text{ mW}/^{\circ}C$ for Plastic DIP
- to $7 \text{ mW}/^{\circ}C$ for SOIC

Maximum conditions

Symbol	Parameter	Min	Max	Unit	
V_{CC}	Supply voltage	1.2	3.6	V	
V_{IN}	Input voltage	0	V_{CC}	V	
V_{OUT}	Output voltage	0	V_{CC}	V	
T_A	Operation temperature. For all packages	-40	125	$^{\circ}C$	
t_{LH}, t_{HL}	Period of signal rise and fall edges (Figure 1)	$V_{CC} = 1.2 \text{ B}$	0	1000	ns
		$V_{CC} = 2.0 \text{ B}$		700	
		$V_{CC} = 3.0 \text{ B}$		500	
		$V_{CC} = 3.6 \text{ B}$		400	

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DC electrical characteristics

Sym bol	Parameter	Test conditions	V _{CC} , V	Value						Unit
				25°C		From -40°C to 85°C		From -40°C to 125°C		
				min	max	min	max	min	max	
V _{IH}	High input voltage	V _O = V _{CC} -0.1 V	1.2	0.9	-	0.9	-	0.9	-	V
			2.0	1.4	-	1.4	-	1.4	-	
			3.0	2.1	-	2.1	-	2.1	-	
			3.6	2.5	-	2.5	-	2.5	-	
V _{IL}	Low input voltage	V _O = 0.1 V	1.2	-	0.3	-	0.3	-	0.3	V
			2.0	-	0.6	-	0.6	-	0.6	
			3.0	-	0.9	-	0.9	-	0.9	
			3.6	-	1.1	-	1.1	-	1.1	
V _{OH}	High output voltage	V _I = V _{IH} or V _{IL} I _o = -50 mA	1.2	1.11	-	1.1	-	1.1	-	V
			2.0	1.91	-	1.9	-	1.9	-	
			3.0	2.91	-	2.9	-	2.9	-	
			3.6	3.51	-	3.5	-	3.5	-	
			V _I = V _{IH} or V _{IL} I _o = -8 mA	3.0	2.48	-	2.34	-	2.20	-
V _{OL}	Low output voltage	V _I = V _{IH} or V _{IL} I _o = 50 mA	1.2	-	0.09	-	0.1	-	0.1	V
			2.0	-	0.09	-	0.1	-	0.1	
			3.0	-	0.09	-	0.1	-	0.1	
			3.6	-	0.09	-	0.1	-	0.1	
			V _I = V _{IH} or V _{IL} I _o = 8 mA	3.0	-	0.33	-	0.4	-	0.5
I _I	Input current	V _I = V _{CC} or 0 V	3.6	-	±0.1	-	±1.0	-	±1.0	µA
I _{OZ}	Output current in «off» state	Outputs in the third state V _I = V _{IL} or V _{IH} V _O = V _{CC} or 0 V	3.6	-	±0.5	-	±5	-	±10	µA
I _{CC}	Consumption current	V _I = V _{CC} or 0 V I _o = 0 mA	3.6	-	8.0	-	80	-	160	µA

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AC electrical characteristics ($C_L=50$ pF, $t_{LH} = t_{HL} = 6.0$ ns)

Symbol	Parameter	Test conditions	V_{CC} , V	Value						Unit
				25°C		From -40°C to 85°C		From -40°C to 125°C		
				min	max	min	max	min	max	
t_{PHL} , t_{PLH} from A to B; from B to A	Propagation delay time in «on» and «off» states	Fig. 1	1.2	-	100	-	125	-	140	ns
			2.0	-	23	-	28	-	34	
			3.0	-	14	-	18	-	21	
t_{PHZ} , t_{PLZ} from OE to Y	Propagation delay time when switching from high, low levels into «off» state	Fig. 2	1.2	-	120	-	140	-	160	
			2.0	-	30	-	37	-	43	
			3.0	-	20	-	24	-	28	
t_{PZH} , t_{PZL} from OE to Y	Propagation delay time when switching from «off» state into high, low levels	Fig.2	1.2	-	120	-	140	-	160	
			2.0	-	28	-	35	-	43	
			3.0	-	17	-	21	-	26	
t_{THL} , t_{TLH}	Transition time when switching on, off	Fig. 1	1.2	-	60	-	75	-	90	
			2.0	-	16	-	20	-	24	
			3.0	-	10	-	13	-	15	
C_I	Input capacitance		3.0	-	7	-	-	-	-	pF
C_{PD}	Dynamic capacitance (for one channel)	$V_I = 0$ V or V_{CC}	3.0	-	50	-	-	-	-	

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- Time diagram of control of AC characteristics t_{PLH} , t_{PHL}

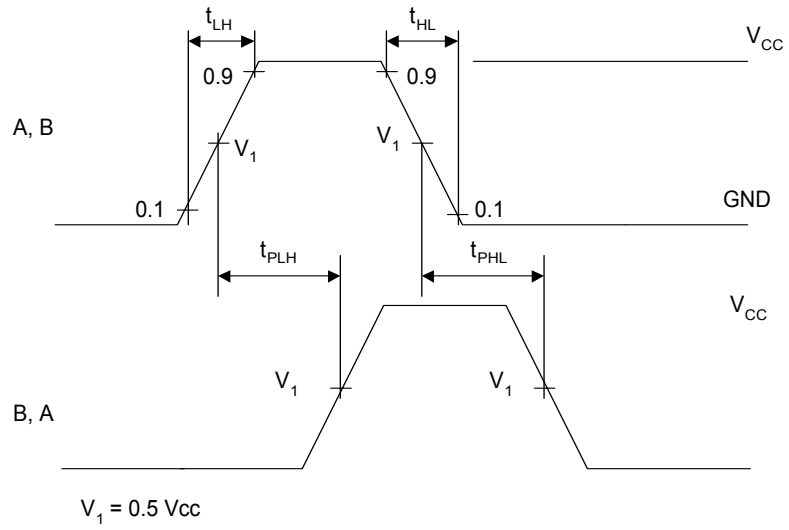


Fig. 1

- Time diagram of control of AC characteristics t_{PLZ} , t_{PHZ} , t_{PZL} , t_{PZH}

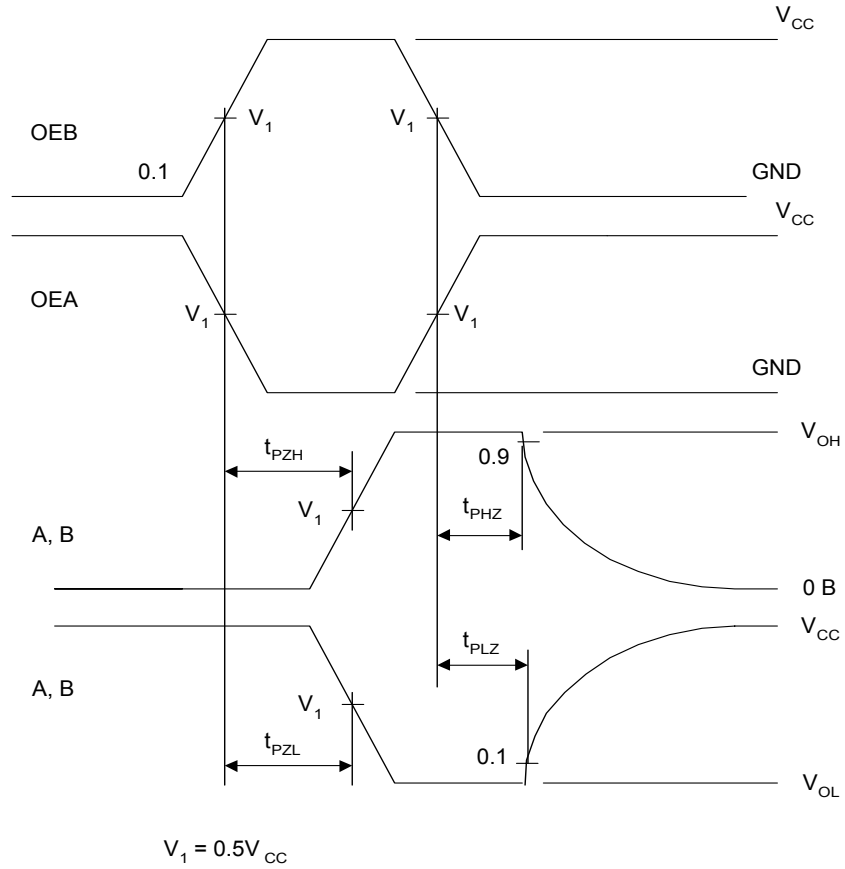


Fig. 2