74LVC623A

Octal transceiver with dual enable; 3-state Rev. 5 — 25 November 2011

Product data sheet

General description 1.

The 74LVC623A is an octal transceiver featuring non-inverting 3-state bus compatible outputs in both send and receive directions. This octal bus transceiver is designed for asynchronous two-way communication between data buses.

The control function implementation allows maximum flexibility in timing. This device allows data transmission from the An bus to the Bn bus or from the Bn bus to the An bus, depending upon the logic levels at the enable inputs (pins OEAB and OEBA). The enable inputs can be used to disable the device so that the buses are effectively isolated. The dual enable function configuration gives this transceiver the capability to store data by simultaneous enabling of pins OEAB and OEBA. Each output reinforces its input in this transceiver configuration. Thus, when both control inputs are enabled and all other data sources to the two sets of the bus lines are at high-impedance OFF-state, both sets of the bus lines will remain at their last states. The 8-bit codes appearing on the two sets of buses will be identical.

Inputs can be driven from either 3.3 V or 5 V devices. When disabled, up to 5.5 V can be applied to the outputs. These features allow the use of these devices as translators in mixed 3.3 V or 5 V applications.

2. **Features and benefits**

- 5 V tolerant inputs and outputs for interfacing with 5 V logic
- Wide supply voltage range from 1.2 V to 3.6 V
- CMOS low power consumption
- Direct interface with TTL levels
- High-impedance when V_{CC} = 0 V
- Complies with JEDEC standard:
 - ◆ JESD8-7A (1.65 V to 1.95 V)
 - ◆ JESD8-5A (2.3 V to 2.7 V)
 - ◆ JESD8-C/JESD36 (2.7 V to 3.6 V)
- ESD protection:
 - HBM JESD22-A114F exceeds 2000 V
 - MM JESD22-A115B exceeds 200 V
 - CDM JESD22-C101E exceeds 1000 V
- Specified from -40 °C to +85 °C and from -40 °C to +125 °C.



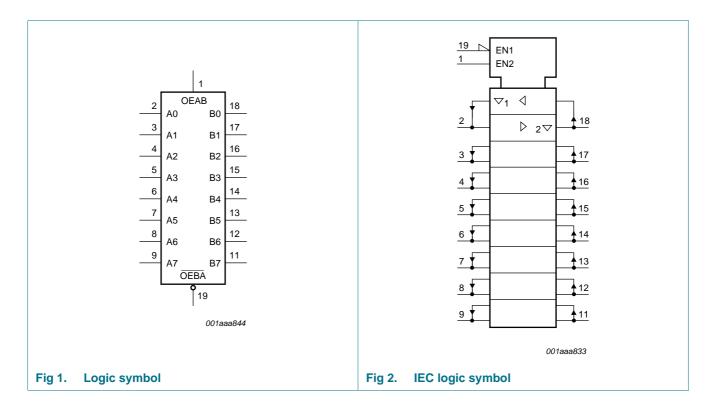
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3. Ordering information

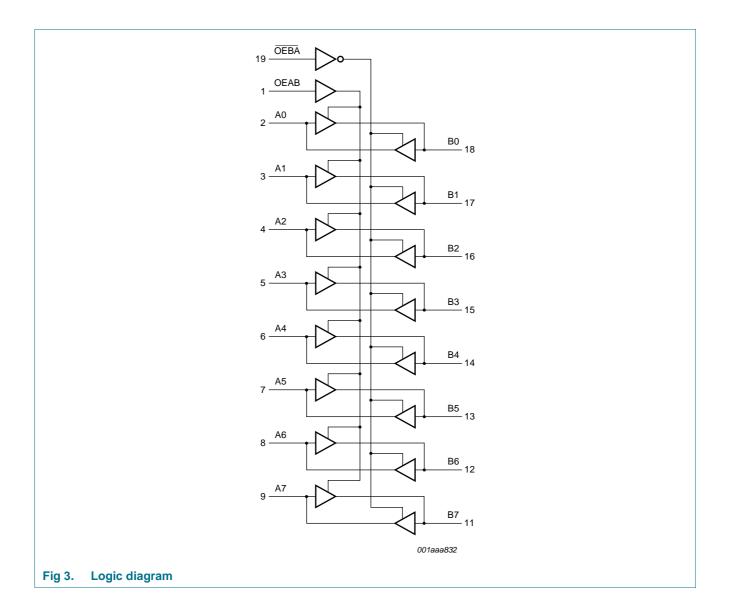
Table 1. Ordering information

Type number	Package	Package											
	Temperature range	Name	Description	Version									
74LVC623AD	–40 °C to +125 °C	SO20	plastic small outline package; 20 leads; body width 7.5 mm	SOT163-1									
74LVC623ADB	–40 °C to +125 °C	SSOP20	plastic shrink small outline package; 20 leads; body width 5.3 mm	SOT339-1									
74LVC623APW	–40 °C to +125 °C	TSSOP20	plastic thin shrink small outline package; 20 leads; body width 4.4 mm	SOT360-1									

4. Functional diagram



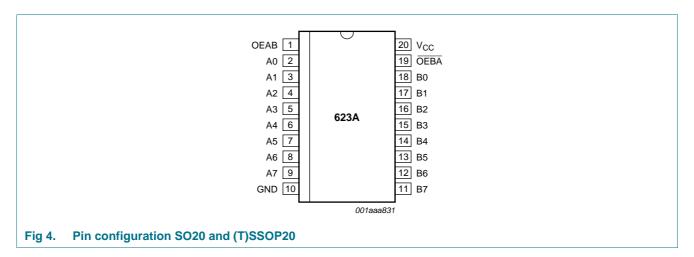
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5. Pinning information

5.1 Pinning



5.2 Pin description

Table 2. Pin description

Pin	Symbol	Description
1	OEAB	output enable input
19	OEBA	output enable input (active LOW)
A[0:7]	2, 3, 4, 5, 6, 7, 8, 9	data input or output
B[0:7]	18, 17, 16, 15, 14, 13, 12, 11	data output or input
10	GND	ground (0 V)
20	V _{CC}	supply voltage

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6. Functional description

Table 3. Function table[1]

Input		Input or output					
OEAB	OEBA	An	Bn				
L	L	An = Bn	input				
Н	Н	input	Bn = An				
L	Н	Z	Z				
Н	L	An = Bn	input				
		input	Bn = An				

^[1] H = HIGH voltage level; L = LOW voltage level; Z = high-impedance OFF-state

7. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134). Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	supply voltage		-0.5	+6.5	V
VI	input voltage		<u>[1]</u> –0.5	+6.5	V
Vo	output voltage	HIGH or LOW state	<u>[2]</u> –0.5	$V_{CC} + 0.5$	V
		3-state	<u>[2]</u> –0.5	+6.5	V
I _{IK}	input clamping current	V _I < 0 V	-50	-	mA
I _{OK}	output clamping current	$V_O > V_{CC}$ or $V_O < 0 V$	-	±50	mA
Io	output current	$V_O = 0 V \text{ to } V_{CC}$	-	±50	mA
I _{CC}	supply current		-	100	mA
I_{GND}	ground current		-100	-	mA
T _{stg}	storage temperature		-65	±150	°C
P _{tot}	total power dissipation	$T_{amb} = -40 ^{\circ}\text{C} \text{ to } +125 ^{\circ}\text{C}$	[3] _	500	mW

^[1] The minimum input voltage ratings may be exceeded if the input current ratings are observed.

^[2] The output voltage ratings may be exceeded if the output current ratings are observed.

^[3] For SO20 package: above 70 °C P_{tot} derates linearly with 8 mW/K.
For (T)SSOP20 packages: above 60 °C P_{tot} derates linearly with 5.5 mW/K.

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8. Recommended operating conditions

Table 5. Recommended operating conditions

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
V_{CC}	supply voltage		1.65	-	3.6	V
		functional	1.2	-	-	V
VI	input voltage		0	-	5.5	V
Vo	output voltage	HIGH or LOW state	0	-	V_{CC}	V
		3-state or V _{CC} = 0 V	0	-	5.5	V
T _{amb}	ambient temperature	in free air	-40	-	+125	°C
Δt/ΔV	input transition rise and fall rate	V_{CC} = 1.65 V to 2.7 V	0	-	20	ns/V
		$V_{CC} = 2.7 \text{ V to } 3.6 \text{ V}$	0	-	10	ns/V

9. Static characteristics

Table 6. Static characteristics

At recommended operating conditions. Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	-40	°C to +8	35 °C	-40 °C to	+125 °C	Unit	
			Min	Typ[1]	Max	Min	Max		
V_{IH}	HIGH-level	V _{CC} = 1.2 V	1.08	-	-	1.08	-	V	
	input voltage	V _{CC} = 1.65 V to 1.95 V	$0.65 \times V_{CC}$	-	-	$0.65 \times V_{CC}$	-	V	
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	1.7	-	-	1.7	-	V	
		V _{CC} = 2.7 V to 3.6 V	2.0	-	-	2.0	-	V	
V _{IL}	LOW-level	V _{CC} = 1.2 V	-	-	0.12	-	0.12	V	
	input voltage	V _{CC} = 1.65 V to 1.95 V	-	-	$0.35 \times V_{CC}$	-	$0.35 \times V_{CC}$	V	
		V _{CC} = 2.3 V to 2.7 V	-	-	0.7	-	0.7	V	
		V _{CC} = 2.7 V to 3.6 V	-	-	0.8	-	0.8	V	
V _{OH}	HIGH-level	$V_I = V_{IH}$ or V_{IL}							
	output voltage	$I_O = -100 \mu A;$ $V_{CC} = 1.65 \text{ V to } 3.6 \text{ V}$	V _{CC} - 0.2	-	-	$V_{CC}-0.3$	-	V	
		$I_O = -4 \text{ mA}; V_{CC} = 1.65 \text{ V}$	1.2	-	-	1.05	-	V	
		$I_{O} = -8 \text{ mA}; V_{CC} = 2.3 \text{ V}$	1.8	-	-	1.65	-	V	
		$I_{O} = -12 \text{ mA}; V_{CC} = 2.7 \text{ V}$	2.2	-	-	2.05	-	V	
		$I_{O} = -18 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.4	-	-	2.25	-	V	
		$I_{O} = -24 \text{ mA}; V_{CC} = 3.0 \text{ V}$	2.2	-	-	2.0	-	V	
V _{OL}	LOW-level	$V_I = V_{IH}$ or V_{IL}							
	output voltage	$I_O = 100 \mu A;$ $V_{CC} = 1.65 \text{ V to } 3.6 \text{ V}$	-	-	0.2	-	0.3	V	
		$I_O = 4 \text{ mA}; V_{CC} = 1.65 \text{ V}$	-	-	0.45	-	0.65	V	
		$I_O = 8 \text{ mA}; V_{CC} = 2.3 \text{ V}$	-	-	0.6	-	0.8	V	
		$I_O = 12 \text{ mA}; V_{CC} = 2.7 \text{ V}$	-	-	0.4	-	0.6	V	
		$I_O = 24 \text{ mA}; V_{CC} = 3.0 \text{ V}$	-	-	0.55	-	0.8	V	
lı	input leakage current	V_{CC} = 3.6 V; V_I = 5.5 V or GND	-	±0.1	±5	-	±20	μΑ	

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Table 6. Static characteristics ...continued

At recommended operating conditions. Voltages are referenced to GND (ground = 0 V).

	•	•			,			
Symbol	Parameter	Conditions	-40	0 °C to +	85 °C	-40 °C t	o +125 °C	Unit
			Min	Typ[1]	Max	Min	Max	
I _{OZ} [2]	OFF-state output current	$V_I = V_{IH}$ or V_{IL} ; $V_{CC} = 3.6 \text{ V}$; $V_O = 5.5 \text{ V}$ or GND;	-	0.1	±5	-	±20	μΑ
l _{OFF}	power-off leakage current	$V_{CC} = 0 \text{ V}$; $V_I \text{ or } V_O = 5.5 \text{ V}$	-	0.1	±10	-	±20	μА
I _{CC}	supply current	$V_{CC} = 3.6 \text{ V}; V_I = V_{CC} \text{ or GND};$ $I_O = 0 \text{ A}$	-	0.1	10	-	40	μА
ΔI_{CC}	additional supply current	per input pin; $V_{CC} = 2.7 \text{ V to } 3.6 \text{ V};$ $V_{I} = V_{CC} - 0.6 \text{ V}; I_{O} = 0 \text{ A}$	-	5	500	-	5000	μА
C _I	input capacitance	$V_{CC} = 0 \text{ V to } 3.6 \text{ V};$ $V_{I} = \text{GND to } V_{CC}$	-	4.0	-	-	-	pF
C _{I/O}	input/output capacitance	$V_{CC} = 0 \text{ V to } 3.6 \text{ V};$ $V_{I} = \text{GND to } V_{CC}$	-	10.0	-	-	-	pF

^[1] All typical values are measured at V_{CC} = 3.3 V (unless stated otherwise) and T_{amb} = 25 °C.

10. Dynamic characteristics

Table 7. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V). For test circuit see Figure 8.

							Unit	
d propagation			Min	Typ[1]	Max	Min	Max	Ī
propagation	An to Bn; Bn to An; see Figure 5	[2]		'		'	'	
delay	V _{CC} = 1.2 V		-	19	-	-	-	ns
	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		1.7	6.4	13.5	1.7	14.2	ns
	$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		1.5	3.4	6.7	1.5	7.4	ns
	$V_{CC} = 2.7 \text{ V}$		1.5	3.4	5.7	1.5	7.5	ns
	$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		1.0	2.9	5.2	1.0	6.5	ns
enable time	OEAB to Bn; see Figure 6	[2]						
	V _{CC} = 1.2 V		-	26	-	-	-	ns
	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		2.7	8.7	17.0	2.7	17.9	ns
	$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		2.2	4.8	8.9	2.2	9.8	ns
	$V_{CC} = 2.7 \text{ V}$		1.5	4.2	6.9	1.5	9.0	ns
	$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		1.0	3.9	6.6	1.0	8.5	ns
	OEBA to An; see Figure 7	[2]						
	V _{CC} = 1.2 V		-	26	-	-	-	ns
	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		2.6	8.1	17.0	2.6	17.9	ns
	$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		2.2	4.5	8.9	2.2	9.8	ns
	$V_{CC} = 2.7 \text{ V}$		1.5	4.6	7.5	1.5	9.5	ns
	$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		1.0	3.6	6.6	1.0	8.5	ns
	delay	$V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.7 \text{ V}$ $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ enable time $OEAB \text{ to Bn; see } \underline{Figure 6}$ $V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.7 \text{ V}$ $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ $\overline{OEBA} \text{ to An; see } \underline{Figure 7}$ $V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	delay $V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.7 \text{ V}$ $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ enable time $OEAB \text{ to Bn; see } \underline{Figure 6}$ $V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.7 \text{ V}$ $V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$ $\overline{OEBA} \text{ to An; see } \underline{Figure 7}$ $V_{CC} = 1.2 \text{ V}$ $V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$ $V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$	$V_{CC} = 1.2 \text{ V} \\ V_{CC} = 1.65 \text{ V to } 1.95 \text{ V} \\ V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ V_{CC} = 2.7 \text{ V} \\ V_{CC} = 3.0 \text{ V to } 3.6 \text{ V} \\ V_{CC} = 3.0 \text{ V to } 3.6 \text{ V} \\ V_{CC} = 1.2 \text{ V} \\ V_{CC} = 1.2 \text{ V} \\ V_{CC} = 1.65 \text{ V to } 1.95 \text{ V} \\ V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ V_{CC} = 2.7 \text{ V} \\ V_{CC} = 3.0 \text{ V to } 3.6 \text{ V} \\ \hline{V_{CC} = 3.0 \text{ V to } 3.6 \text{ V} \\ \hline{V_{CC} = 3.0 \text{ V to } 3.6 \text{ V} \\ \hline{V_{CC} = 1.2 \text{ V} \\ V_{CC} = 1.2 \text{ V} \\ \hline{V_{CC} = 1.2 \text{ V} \\ V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 1.95 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.3 \text{ V to } 2.7 \text{ V} \\ \hline{V_{CC} = 2.7 \text{ V} } \\ \hline{V_{CC} = 2.7 \text{ V} \\ \hline{V_{CC} = 2.7 \text{ V} } \\ \hline{V_{CC} = 2.7 \text{ V} \\ \hline{V_{CC} = 2.7 \text{ V} } \\ \hline{V_{CC} =$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

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^[2] For transceivers, the parameter $I_{\mbox{\scriptsize OZ}}$ includes the input leakage current.

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 Table 7.
 Dynamic characteristics ...continued

Voltages are referenced to GND (ground = 0 V). For test circuit see <u>Figure 8</u>.

Symbol	Parameter	Conditions		-40	°C to +8	5 °C	-40 °C to	+125 °C	Unit
				Min	Typ[1]	Max	Min	Max	
t _{dis}	disable time	OEAB to Bn; see Figure 6	<u>[2]</u>				•		
		V _{CC} = 1.2 V		-	12	-	-	-	ns
		$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		2.3	4.7	10.5	2.3	11.1	ns
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		1.0	2.6	5.7	1.0	6.4	ns
		$V_{CC} = 2.7 \text{ V}$		1.5	4.2	6.2	1.5	8.0	ns
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		1.0	3.2	5.5	1.0	7.0	ns
		OEBA to An; see Figure 7	[2]						
		V _{CC} = 1.2 V		-	11	-	-	-	ns
		$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		3.6	5.2	10.1	3.6	10.7	ns
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		1.0	2.9	5.5	1.0	6.1	ns
		$V_{CC} = 2.7 \text{ V}$		1.5	3.7	5.5	1.5	7.0	ns
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		1.0	3.4	5.3	1.0	7.0	ns
t _{sk(o)}	output skew time	$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$	[3]	-	-	1.0	-	1.5	ns
C_{PD}	power dissipation	per input; $V_I = GND$ to V_{CC}	<u>[4]</u>						
	capacitance	$V_{CC} = 1.65 \text{ V to } 1.95 \text{ V}$		-	11.9	-	-	-	pF
		$V_{CC} = 2.3 \text{ V to } 2.7 \text{ V}$		-	15.5	-	-	-	pF
		$V_{CC} = 3.0 \text{ V to } 3.6 \text{ V}$		-	18.8	-	-	-	pF

^[1] Typical values are measured at T_{amb} = 25 °C and V_{CC} = 1.2 V, 1.8 V, 2.5 V, 2.7 V, and 3.3 V respectively.

t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[4] C_{PD} is used to determine the dynamic power dissipation (P_D in μW).

$$P_D = C_{PD} \times V_{CC}^2 \times f_i \times N + \Sigma (C_L \times V_{CC}^2 \times f_o)$$
 where:

 f_i = input frequency in MHz; f_o = output frequency in MHz

 C_L = output load capacitance in pF

V_{CC} = supply voltage in Volts

N = number of inputs switching

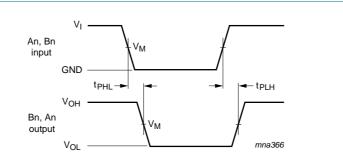
 $\Sigma (C_L \times V_{CC}{}^2 \times f_o)$ = sum of the outputs

 $[\]begin{array}{ll} \hbox{ [2]} & t_{pd} \hbox{ is the same as } t_{PLH} \hbox{ and } t_{PHL}. \\ \\ & t_{en} \hbox{ is the same as } t_{PZL} \hbox{ and } t_{PZH}. \end{array}$

^[3] Skew between any two outputs of the same package switching in the same direction. This parameter is guaranteed by design.

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11. Waveforms



 $V_M = 1.5 \text{ V at } V_{CC} \ge 2.7 \text{ V};$

 $V_M = 0.5 \times V_{CC}$ at $V_{CC} < 2.7$ V.

 V_{OL} and V_{OH} are typical output voltage levels that occur with the output load.

Fig 5. The inputs An, Bn to outputs Bn, An propagation delays

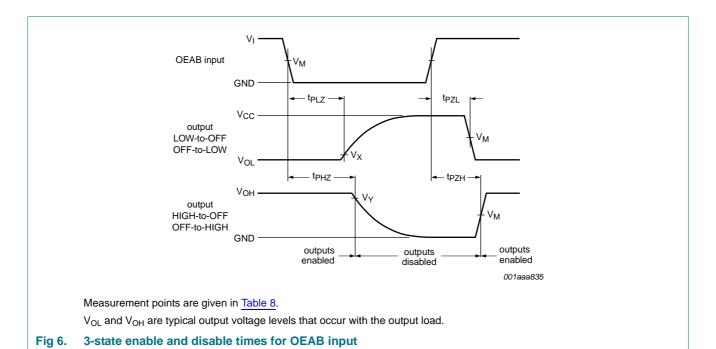
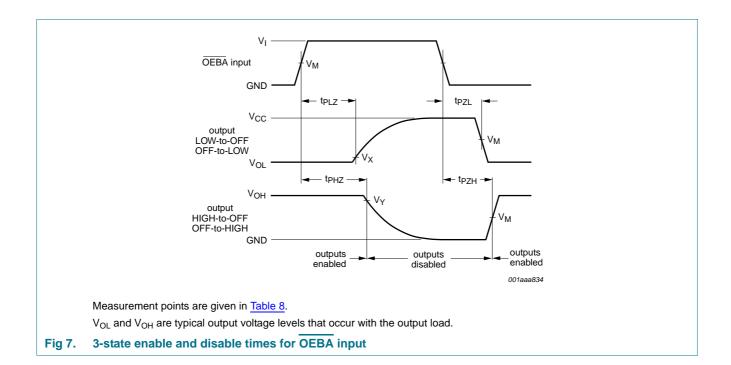


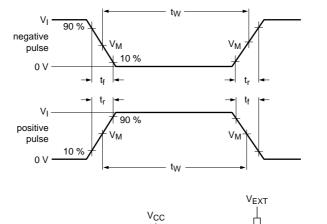
Table 8. Measurement points

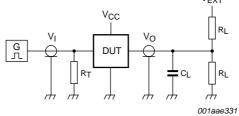
Supply voltage	Input	Output	Output									
V _{CC}	V _M	V _M	V _X	V _Y								
< 2.7 V	$0.5 \times V_{CC}$	$0.5 \times V_{CC}$	V _{OL} + 0.15 V	V _{OH} – 0.15 V								
≥ 2.7 V	1.5 V	1.5 V	V _{OL} + 0.3 V	V _{OH} – 0.3 V								

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Test data is given in Table 9.

Definitions for test circuit:

R_L = Load resistance.

 C_L = Load capacitance including jig and probe capacitance.

 R_T = Termination resistance should be equal to output impedance Z_0 of the pulse generator.

 V_{EXT} = External voltage for measuring switching times.

Fig 8. Test circuit for measuring switching times

Table 9. Test data

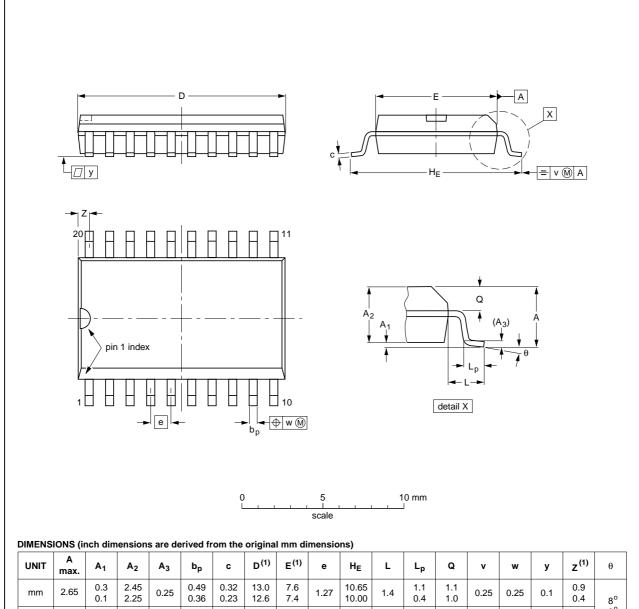
Supply voltage	Input		Load		V _{EXT}	V _{EXT}				
	VI	t _r , t _f	CL	R _L	t _{PLH} , t _{PHL}	t_{PLZ}, t_{PZL}	t _{PHZ} , t _{PZH}			
1.2 V	V_{CC}	≤ 2 ns	30 pF	1 k Ω	open	$2\times V_{CC}$	GND			
1.65 V to 1.95 V	V_{CC}	≤ 2 ns	30 pF	1 kΩ	open	$2\times V_{CC}$	GND			
2.3 V to 2.7 V	V_{CC}	≤ 2 ns	30 pF	500Ω	open	$2\times V_{CC}$	GND			
2.7 V	2.7 V	≤ 2.5 ns	50 pF	500Ω	open	$2\times V_{CC}$	GND			
3.0 V to 3.6 V	2.7 V	≤ 2.5 ns	50 pF	500Ω	open	$2\times V_{CC}$	GND			

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12. Package outline

SO20: plastic small outline package; 20 leads; body width 7.5 mm

SOT163-1



UNIT	A max.	A ₁	A ₂	A ₃	bp	С	D ⁽¹⁾	E ⁽¹⁾	е	HE	L	Lp	Q	v	w	у	z ⁽¹⁾	θ
mm	2.65	0.3 0.1	2.45 2.25	0.25	0.49 0.36	0.32 0.23	13.0 12.6	7.6 7.4	1.27	10.65 10.00	1.4	1.1 0.4	1.1 1.0	0.25	0.25	0.1	0.9 0.4	8°
inches	0.1	0.012 0.004	0.096 0.089	0.01	0.019 0.014	0.013 0.009	0.51 0.49	0.30 0.29	0.05	0.419 0.394	0.055	0.043 0.016	0.043 0.039	0.01	0.01	0.004	0.035 0.016	0°

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

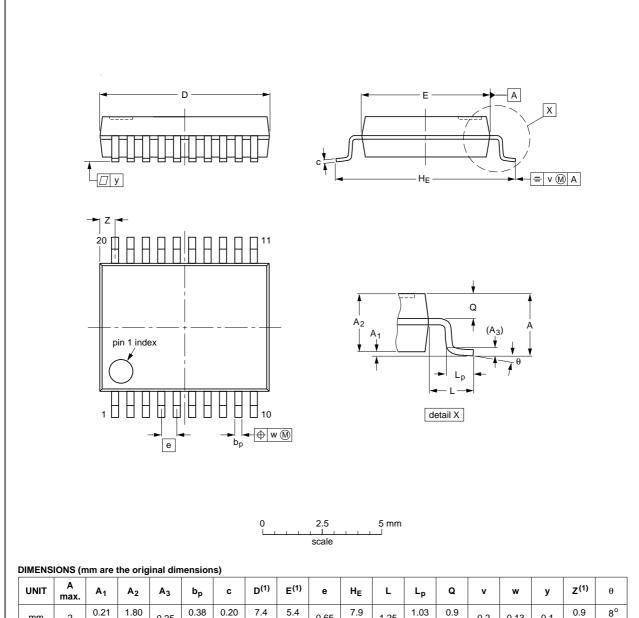
OUTLINE		REFER	EUROPEAN	ISSUE DATE	
VERSION	IEC	JEDEC	JEITA	PROJECTION	ISSUE DATE
SOT163-1	075E04	MS-013			99-12-27 03-02-19

Fig 9. Package outline SOT163-1 (SO20)

74LVC623A

SSOP20: plastic shrink small outline package; 20 leads; body width 5.3 mm

SOT339-1



							-,												
,	JNIT	A max.	A ₁	A ₂	A ₃	bp	С	D ⁽¹⁾	E ⁽¹⁾	е	HE	L	Lp	Q	v	w	у	Z ⁽¹⁾	θ
	mm	2	0.21 0.05	1.80 1.65	0.25	0.38 0.25	0.20 0.09	7.4 7.0	5.4 5.2	0.65	7.9 7.6	1.25	1.03 0.63	0.9 0.7	0.2	0.13	0.1	0.9 0.5	8° 0°

Note

1. Plastic or metal protrusions of 0.2 mm maximum per side are not included.

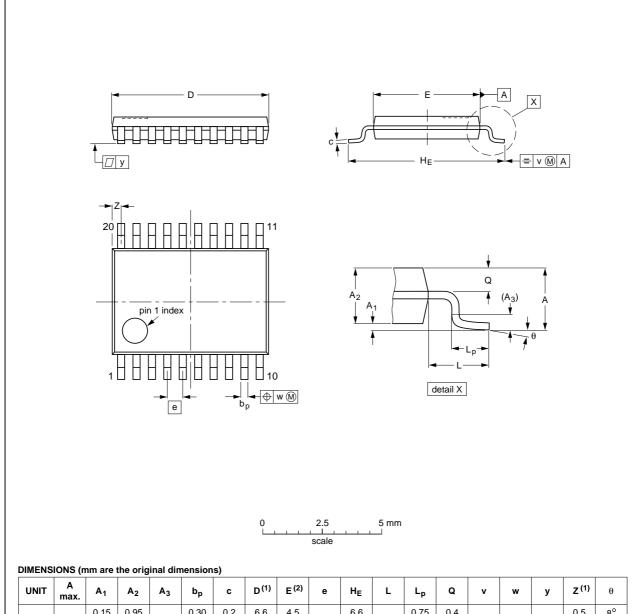
OUTLINE		REFER	EUROPEAN	ISSUE DATE			
VERSION	IEC	JEDEC	JEITA		PROJECTION	ISSUE DATE	
SOT339-1		MO-150				99-12-27 03-02-19	
							-

Fig 10. Package outline SOT339-1 (SSOP20)

Octal transceiver with dual enable; 3-state

TSSOP20: plastic thin shrink small outline package; 20 leads; body width 4.4 mm

SOT360-1



UNIT	A max.	A ₁	A ₂	A ₃	bp	С	D ⁽¹⁾	E ⁽²⁾	е	HE	L	Lp	Q	v	w	у	Z ⁽¹⁾	θ	
mm	1.1	0.15 0.05	0.95 0.80	0.25	0.30 0.19	0.2 0.1	6.6 6.4	4.5 4.3	0.65	6.6 6.2	1	0.75 0.50	0.4 0.3	0.2	0.13	0.1	0.5 0.2	8° 0°	

- 1. Plastic or metal protrusions of 0.15 mm maximum per side are not included.
- 2. Plastic interlead protrusions of 0.25 mm maximum per side are not included.

OUTLINE		REFER	EUROPEAN	ISSUE DATE			
VERSION	IEC	JEDEC	JEITA		PROJECTION	ISSUE DATE	
SOT360-1		MO-153				99-12-27 03-02-19	

Fig 11. Package outline SOT 360-1 (TSSOP20)

Octal transceiver with dual enable; 3-state

13. Abbreviations

Table 10. Abbreviations

Acronym	Description
CDM	Charged Device Model
DUT	Device Under Test
ESD	ElectroStatic Discharge
НВМ	Human Body Model
MM	Machine Model
TTL	Transistor-Transistor Logic

14. Revision history

Table 11. Revision history

74LVC623A v.5 20111125 Product data sheet - 74LVC623A v.4 Modifications: Typographical errors corrected 74LVC623A v.4 20111107 Product data sheet - 74LVC623A v.3 Modifications: The format of this document has been redesigned to comply with the new identity guidelines NXP Semiconductors. Legal texts have been adapted to the new company name where appropriate. Table 4, Table 5, Table 6, Table 7, and Table 9: values added for lower voltage ranges. DHVQFN package added to Section 3 and Section 12. 74LVC623A v.2					
Modifications: • Typographical errors corrected 74LVC623A v.4 20111107 Product data sheet - 74LVC623A v.3 Modifications: • The format of this document has been redesigned to comply with the new identity guidelines NXP Semiconductors. • Legal texts have been adapted to the new company name where appropriate. • Table 4, Table 5, Table 6, Table 7, and Table 9: values added for lower voltage ranges. • DHVQFN package added to Section 3 and Section 12. 74LVC623A v.3 20040506 Product specification - 74LVC623A v.2	Document ID	Release date	Data sheet status	Change notice	Supersedes
74LVC623A v.4 20111107 Product data sheet - 74LVC623A v.3 Modifications: The format of this document has been redesigned to comply with the new identity guidelines NXP Semiconductors. Legal texts have been adapted to the new company name where appropriate. Table 4, Table 5, Table 6, Table 7, and Table 9: values added for lower voltage ranges. DHVQFN package added to Section 3 and Section 12. 74LVC623A v.3 74LVC623A v.2	74LVC623A v.5	20111125	Product data sheet	-	74LVC623A v.4
 Modifications: The format of this document has been redesigned to comply with the new identity guidelines NXP Semiconductors. Legal texts have been adapted to the new company name where appropriate. Table 4, Table 5, Table 6, Table 7, and Table 9: values added for lower voltage ranges. DHVQFN package added to Section 3 and Section 12. 74LVC623A v.3 74LVC623A v.2 	Modifications:	 Typographical 	errors corrected		
NXP Semiconductors. • Legal texts have been adapted to the new company name where appropriate. • <u>Table 4</u> , <u>Table 5</u> , <u>Table 6</u> , <u>Table 7</u> , and <u>Table 9</u> : values added for lower voltage ranges. • DHVQFN package added to <u>Section 3</u> and <u>Section 12</u> . 74LVC623A v.3 20040506 Product specification - 74LVC623A v.2	74LVC623A v.4	20111107	Product data sheet	-	74LVC623A v.3
 Table 4, Table 5, Table 6, Table 7, and Table 9: values added for lower voltage ranges. DHVQFN package added to Section 3 and Section 12. 74LVC623A v.3 20040506 Product specification - 74LVC623A v.2 	Modifications:			signed to comply with	the new identity guidelines of
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74LVC623A v.3 20040506 Product specification - 74LVC623A v.2		• Table 4, Table	5, Table 6, Table 7, and Tab	le 9: values added for	lower voltage ranges.
		 DHVQFN pace 	kage added to Section 3 and	Section 12.	
74LVC623A v.2 19980729 Product specification	74LVC623A v.3	20040506	Product specification	-	74LVC623A v.2
	74LVC623A v.2	19980729	Product specification	-	-

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15. Legal information

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Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
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- [2] The term 'short data sheet' is explained in section "Definitions"
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