74ALVT16260

12-bit to 24-bit multiplexed D-type latches; 3-state

Rev. 03 — 20 March 2006 Product data sheet

1. General description

The 74ALVT16260 is a 12-bit to 24-bit multiplexed D-type latch used in applications where two separate data paths must be multiplexed onto, or demultiplexed from, a single data path. Typical applications include multiplexing or demultiplexing of address and data information in microprocessor or bus-interface applications. This device is also useful in memory-interleaving applications.

Three 12-bit I/O ports (A1 to A12, 1B1 to 1B12 and 2B1 to 2B12) are available for address or data transfer. The output enable inputs ($\overline{OE1B}$, $\overline{OE2B}$, and $\overline{OEA}$) control the bus transceiver functions. $\overline{OE1B}$ and $\overline{OE2B}$ also allow bank control in the A to B direction.

Address or data information can be stored using the internal storage latches. The latch enable inputs (LE1B, LE2B, LEA1B and LEA2B) are used to control data storage. When the latch enable input is HIGH, the latch is transparent. When the latch enable input goes LOW, the data present at the inputs is latched and remains latched until the latch enable input is returned HIGH.

To ensure the high-impedance state during power-up or power-down, all output enable inputs should be tied to V_{CC} through a pull-up resistor. The minimum value of the resistor is determined by the current sinking capability of the driver.

The 74ALVT16260 is available in a SSOP56 and a TSSOP56 package.

2. Features

- 5 V I/O compatible
- Bus hold inputs eliminate the need for external pull-up resistors
- Live insertion and extraction permitted
- Power-up 3-state
- Power-up reset
- Output capability: +64 mA and –32 mA
- Distributed V_{CC} and GND pin configuration minimizes high-speed switching noise
- Latch-up protection:
  - JESD78: exceeds 500 mA
- ESD protection:
  - MIL STD 883C, method 3015: exceeds 2000 V
  - Machine model: exceeds 200 V

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3. Quick reference data

Table 1. Quick reference data

GND = 0 V; T_{amb} = 25 °C.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{CC} = 2.5 V							
I_{CC}	quiescent supply current	V_{CC} = 2.7 V; V_I = GND or V_{CC}; I_O = 0 A; outputs disabled	[1]	-	40	-	µA
t_{PLH}	LOW-to-HIGH propagation delay An to xBn; xBn to An	C_L = 50 pF		-	2.8	-	ns
t_{PHL}	HIGH-to-LOW propagation delay An to xBn; xBn to An	C_L = 50 pF		-	2.7	-	ns
C_i	input capacitance (control pins)	V_I = 0 V or V_{CC}			4	-	pF
C_{io}	input/output capacitance (I/O pins)	$V_{I/O}$ = 0 V or 5.0 V			9	-	pF
V_{CC} = 3.3 V							
I_{CC}	quiescent supply current	V_{CC} = 3.6 V; V_I = GND or V_{CC}; I_O = 0 A; outputs disabled	[1]	-	60	-	µA
t_{PLH}	LOW-to-HIGH propagation delay An to xBn; xBn to An	C_L = 50 pF		-	2.2	-	ns
t_{PHL}	HIGH-to-LOW propagation delay An to xBn; xBn to An	C_L = 50 pF		-	2.0	-	ns
C_i	input capacitance (control pins)	V_I = 0 V or V_{CC}			4	-	pF
C_{io}	input/output capacitance (I/O pins)	$V_{I/O}$ = 0 V or 5.0 V			9	-	pF

[1] I_{CC} is measured with outputs pulled up to V_{CC} or pulled down to ground.

4. Ordering information

Table 2. Ordering information

Type number	Package			
	Temperature range	Name	Description	Version
74ALVT16260DL	–40 °C to +85 °C	SSOP56	plastic shrink small outline package; 56 leads; body width 7.5 mm	SOT371-1
74ALVT16260DGG	–40 °C to +85 °C	TSSOP56	plastic thin shrink small outline package; 56 leads; body width 6.1 mm	SOT364-1

5. Functional diagram

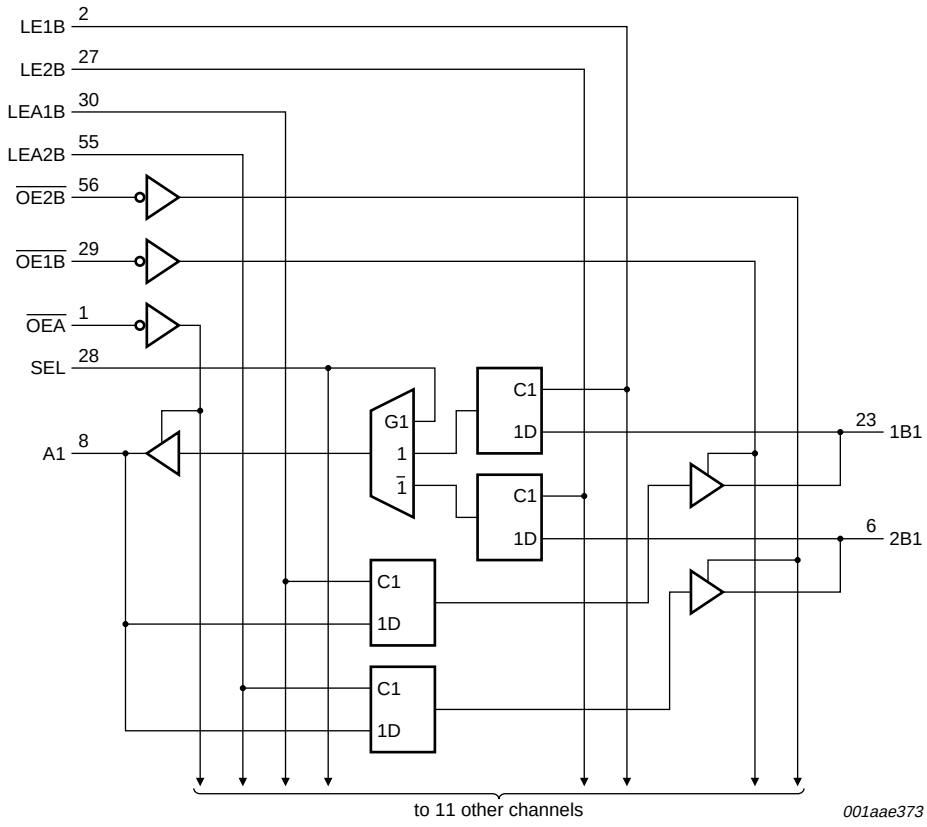


Fig 1. Logic diagram

6. Pinning information

6.1 Pinning

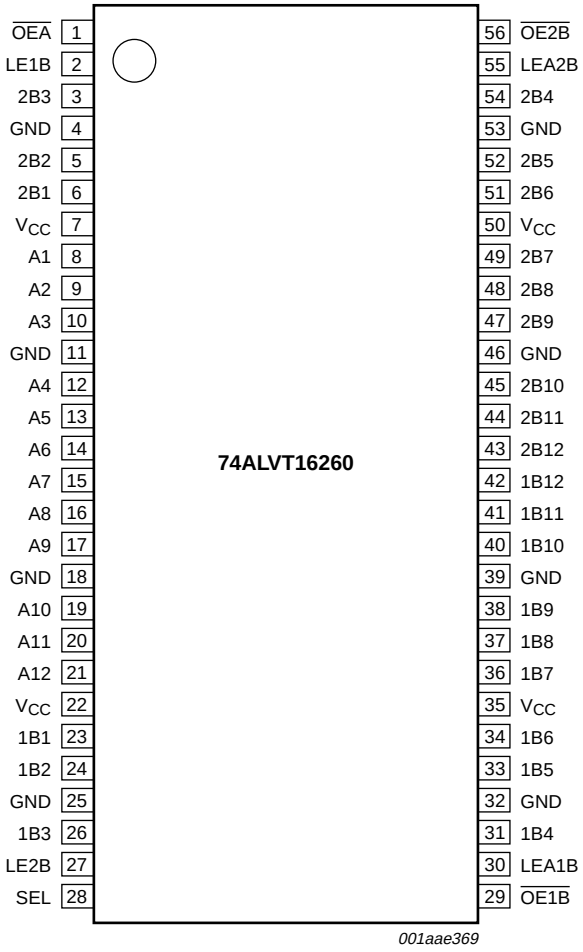


Fig 2. Pin configuration

6.2 Pin description

Table 3. Pin description

Symbol	Pin	Description
$\overline{OEA}$	1	output A enable input (active LOW)
LE1B	2	latch 1B to A enable input
2B3	3	2 data input/output B3
GND	4	ground (0 V)
2B2	5	2 data input/output B2
2B1	6	2 data input/output B1
V_{CC}	7	supply voltage
A1	8	data input/output A1

Table 3. Pin description *...continued*

Symbol	Pin	Description
A2	9	data input/output A2
A3	10	data input/output A3
GND	11	ground (0 V)
A4	12	data input/output A4
A5	13	data input/output A5
A6	14	data input/output A6
A7	15	data input/output A7
A8	16	data input/output A8
A9	17	data input/output A9
GND	18	ground (0 V)
A10	19	data input/output A10
A11	20	data input/output A11
A12	21	data input/output A12
V_{CC}	22	supply voltage
1B1	23	1 data input/output B1
1B2	24	1 data input/output B2
GND	25	ground (0 V)
1B3	26	1 data input/output B3
LE2B	27	latch 2B to A enable input
SEL	28	select B1 or B2 input
$\overline{OE1B}$	29	output 1B enable input (active LOW)
LEA1B	30	latch A to 1B enable input
1B4	31	data input/output B4
GND	32	ground (0 V)
1B5	33	1 data input/output B5
1B6	34	1 data input/output B6
V_{CC}	35	supply voltage
1B7	36	1 data input/output B7
1B8	37	1 data input/output B8
1B9	38	1 data input/output B9
GND	39	ground (0 V)
1B10	40	1 data input/output B10
1B11	41	1 data input/output B11
1B12	42	1 data input/output B12
2B12	43	2 data input/output B12
2B11	44	2 data input/output B11
2B10	45	2 data input/output B10
GND	46	ground (0 V)
2B9	47	2 data input/output B9
2B8	48	2 data input/output B8
2B7	49	2 data input/output B7

Table 3. Pin description *...continued*

Symbol	Pin	Description
V_{CC}	50	supply voltage
2B6	51	2 data input/output B6
2B5	52	2 data input/output B5
GND	53	ground (0 V)
2B4	54	2 data input/output B4
LEA2B	55	latch A to 2B enable input
$\overline{OE2B}$	56	output 2B enable input (active LOW)

7. Functional description

7.1 Function table

Table 4. Function table of input B to output A; $\overline{OE1B}$ = H and $\overline{OE2B}$ = H [1]

Control				Input		Output
$\overline{OEA}$	SEL	LE1B	LE2B	1Bn	2Bn	An
L	H	H	X	H	X	H
				L	X	L
		L	X	X	X	An
	L	X	H	X	H	H
				X	L	L
		X	L	X	X	An
H	X	X	X	X	X	Z

[1] H = HIGH voltage level;
L = LOW voltage level;
X = don't care;
Z = high-impedance OFF-state;
An = HIGH or LOW voltage level one setup time prior to the HIGH-to-LOW LExB transition.

Table 5. Function table of input A to output B; $\overline{OEA}$ = H [1]

Control				Input	Output	
$\overline{OE1B}$	$\overline{OE2B}$	LEA1B	LEA2B	An	1Bn	2Bn
L	L	H	H	H	H	H
		H	H	L	L	L
		H	L	L	L	2Bn
		H	L	H	H	2Bn
		L	H	H	1Bn	H
		L	H	L	1Bn	L
		L	L	X	1Bn	2Bn
L	L	X	X	X	active	active
	H	X	X	X	active	Z
H	L	X	X	X	Z	active
	H	X	X	X	Z	Z

[1] H = HIGH voltage level;
L = LOW voltage level;
X = don't care;
Z = high-impedance OFF-state;
1Bn = HIGH or LOW voltage level one setup time prior to the HIGH-to-LOW LEA2B transition;
2Bn = HIGH or LOW voltage level one setup time prior to the HIGH-to-LOW LEA1B transition;
active = HIGH or LOW voltage level.

8. Limiting values

Table 6. 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	+4.6	V
V_I	input voltage		[1]	–0.5	+7.0	V
V_O	output voltage	output in OFF-state or HIGH-state	[1]	–0.5	+7.0	V
I_{IK}	input clamping current	$V_I < 0$ V		-	–50	mA
I_{OK}	output clamping current	$V_O < 0$ V		-	–50	mA
I_O	output current	output in LOW-state		-	128	mA
		output in HIGH-state		-	–64	mA
T_{stg}	storage temperature			–65	+150	°C
T_j	junction temperature		[2]	-	150	°C

[1] The input and output negative voltage ratings may be exceeded if the input and output clamp current ratings are observed.

[2] The performance capability of a high-performance integrated circuit in conjunction with its thermal environment can create junction temperatures which are detrimental to reliability.

9. Recommended operating conditions

Table 7. Recommended operating conditions

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CC} = 2.5 V						
V_{CC}	supply voltage		2.3	-	2.7	V
V_I	input voltage		0	-	5.5	V
V_{IH}	HIGH-state input voltage		1.7	-	-	V
V_{IL}	LOW-state input voltage		-	-	0.7	V
I_{OH}	HIGH-state output current		-	-	–8	mA
I_{OL}	LOW-state output current	none	-	-	8	mA
		current duty cycle ≤ 50 %; f ≥ 1 kHz	-	-	24	mA
$\Delta t/\Delta V$	input transition rise and fall rate	outputs enabled	-	-	10	ns/V
T_{amb}	ambient temperature		–40	-	+85	°C
V_{CC} = 3.3 V						
V_{CC}	supply voltage		3.0	-	3.6	V

Table 7. Recommended operating conditions *...continued*

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_I	input voltage		0	-	5.5	V
V_{IH}	HIGH-state input voltage		2.0	-	-	V
V_{IL}	LOW-state input voltage		-	-	0.8	V
I_{OH}	HIGH-state output current		-	-	–32	mA
I_{OL}	LOW-state output current	none	-	-	32	mA
		current duty cycle ≤ 50 %; f ≥ 1 kHz	-	-	64	mA
$\Delta t/\Delta V$	input transition rise and fall rate	outputs enabled	-	-	10	ns/V
T_{amb}	ambient temperature	in free air	–40	-	+85	°C

10. Static characteristics

Table 8. Static characteristics

At recommended operating conditions; voltages are referenced to GND (ground = 0 V).
T_{amb} = –40 °C to +85 °C.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{CC} = 2.5 V ± 0.2 V [1]							
V_{IK}	input clamping voltage	V_{CC} = 2.3 V; I_{IK} = –18 mA		-	–0.85	–1.2	V
V_{OH}	HIGH-state output voltage	V_{CC} = 2.3 V to 3.6 V; I_{OH} = –100 µA		V_{CC} – 0.2	V_{CC}	-	V
		V_{CC} = 2.3 V; I_{OH} = –8 mA		1.8	2.1	-	V
V_{OL}	LOW-state output voltage	V_{CC} = 2.3 V; I_{OL} = 100 µA		-	0.07	0.2	V
		V_{CC} = 2.3 V; I_{OL} = 24 mA		-	0.3	0.5	V
V_{RST}	power-up LOW-state output voltage	V_{CC} = 2.7 V; I_O = 1 mA; V_I = V_{CC} or GND	[2]	-	-	0.55	V
I_{LI}	input leakage current						
	control pins	V_{CC} = 2.7 V; V_I = V_{CC} or GND		-	0.1	±1	µA
		V_{CC} = 0 V or 2.7 V; V_I = 5.5 V		-	0.1	10	µA
	I/O data pins	V_{CC} = 2.7 V; V_I = V_{CC}	[3]	-	0.1	1	µA
		V_{CC} = 2.7 V; V_I = 0 V	[3]	-	+0.1	–5	µA
		V_{CC} = 0 V or 2.7 V; V_I = 5.5 V		-	0.1	20	µA
I_{OFF}	power-off leakage current	V_{CC} = 0 V; V_I or V_O = 0 V to 4.5 V		-	0.1	±100	µA
I_{HOLD}	bus hold current data input	V_{CC} = 2.3 V; V_I = 0.7 V	[4]	-	90	-	µA
		V_{CC} = 2.3 V; V_I = 1.7 V	[4]	-	–10	-	µA
I_{EX}	external current into output	output in HIGH-state when V_O > V_{CC}; V_O = 5.5 V; V_{CC} = 2.3 V		-	10	125	µA
$I_{O(pu/pd)}$	power-up/power-down output current	V_{CC} ≤ 1.2 V; V_O = 0.5 V to V_{CC}; V_I = GND or V_{CC}; $\overline{OEx}$ = don't care	[5]	-	1	100	µA
I_{CC}	quiescent supply current	V_{CC} = 2.7 V; V_I = GND or V_{CC}; I_O = 0 A					
		outputs HIGH-state		-	0.04	0.1	mA
		outputs LOW-state		-	2.7	4.5	mA
		outputs disabled	[6]	-	0.04	0.1	mA

Table 8. Static characteristics *…continued*

At recommended operating conditions; voltages are referenced to GND (ground = 0 V).
T_{amb} = −40 °C to +85 °C.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
ΔI_{CC}	additional quiescent supply current	per input pin; V_{CC} = 2.3 V to 2.7 V; one input at V_{CC} − 0.6 V, other inputs at V_{CC} or GND	[7]	-	0.04	0.4	mA
C_i	input capacitance (control pins)	V_I = 0 V or V_{CC}		-	4	-	pF
C_{io}	input/output capacitance (I/O pins)	$V_{I/O}$ = 0 V or 5.0 V		-	9	-	pF
V_{CC} = 3.3 V ± 0.3 V	[8]						
V_{IK}	input clamping voltage	V_{CC} = 3.0 V; I_{IK} = −18 mA		-	−0.85	−1.2	V
V_{OH}	HIGH-state output voltage	V_{CC} = 3.0 V to 3.6 V; I_{OH} = −100 µA		V_{CC} − 0.2	V_{CC}	-	V
		V_{CC} = 3.0 V; I_{OH} = −32 mA		2.0	2.3	-	V
V_{OL}	LOW-state output voltage	V_{CC} = 3.0 V; I_{OL} = 100 µA	[3]	-	0.07	0.2	V
		V_{CC} = 3.0 V; I_{OL} = 16 mA	[3]	-	0.25	0.4	V
		V_{CC} = 3.0 V; I_{OL} = 32 mA	[3]	-	0.3	0.5	V
		V_{CC} = 3.0 V; I_{OL} = 64 mA	[3]	-	0.4	0.55	V
V_{RST}	power-up LOW-state output voltage	V_{CC} = 3.6 V; I_O = 1 mA; V_I = V_{CC} or GND	[2]	-	-	0.55	V
I_{LI}	input leakage current						
	control pins	V_{CC} = 3.6 V; V_I = V_{CC} or GND		-	0.1	±1	µA
		V_{CC} = 0 V or 3.6 V; V_I = 5.5 V		-	0.1	10	µA
	I/O data pins	V_{CC} = 3.6 V; V_I = V_{CC}	[3]	-	0.1	1	µA
		V_{CC} = 3.6 V; V_I = 0 V	[3]	-	+0.1	−5	µA
		V_{CC} = 0 V or 3.6 V; V_I = 5.5 V		-	0.1	20	µA
I_{OFF}	power-off leakage current	V_{CC} = 0 V; V_I or V_O = 0 V to 4.5 V		-	0.1	±100	µA
I_{HOLD}	bus hold current data input	V_{CC} = 3 V; V_I = 0.8 V	[4]	75	130	-	µA
		V_{CC} = 3 V; V_I = 2.0 V	[4]	−75	−140	-	µA
		V_{CC} = 3.6 V; V_I = 0 V to 3.6 V	[4]	±500	-	-	µA
I_{EX}	external current into output	output in HIGH-state when V_O > V_{CC}; V_O = 5.5 V; V_{CC} = 3.0 V		-	10	125	µA
$I_{O(pu/pd)}$	power-up/power-down output current	V_{CC} ≤ 1.2 V; V_O = 0.5 V to V_{CC}; V_I = GND or V_{CC}; $\overline{OEx}$ = don't care	[9]	-	1	±100	µA
I_{CC}	quiescent supply current	V_{CC} = 3.6 V; V_I = GND or V_{CC}; I_O = 0 A					
		outputs HIGH-state		-	0.04	0.1	mA
		outputs LOW-state		-	3.7	6	mA
		outputs disabled	[6]	-	0.06	0.1	mA
ΔI_{CC}	additional quiescent supply current	per input pin; V_{CC} = 3 V to 3.6 V; one input at V_{CC} − 0.6 V, other inputs at V_{CC} or GND	[7]	-	0.04	0.4	mA
C_i	input capacitance (control pins)	V_I = 0 V or V_{CC}		-	4	-	pF
C_{io}	input/output capacitance (I/O pins)	$V_{I/O}$ = 0 V or 5.0 V		-	9	-	pF

[1] Typical values are measured at V_{CC} = 2.5 V and T_{amb} = 25 °C.

[2] For valid test results, data must not be loaded into the flip-flops (or latches) after applying power.

[3] Unused pins at V_{CC} or GND.

[4] This is the bus hold overdrive current required to force the input to the opposite logic state.

[5] This parameter is valid for any V_{CC} between 0 V and 1.2 V with a transition time of up to 10 ms. From V_{CC} = 1.2 V to V_{CC} = 2.5 V ± 0.2 V a transition time of 100 µs is permitted. This parameter is valid for T_{amb} = 25 °C only.

[6] I_{CC} is measured with outputs pulled up to V_{CC} or pulled down to ground.

[7] This is the increase in supply current for each input at the specified voltage level other than V_{CC} or GND.

[8] All typical values are measured at V_{CC} = 3.3 V and T_{amb} = 25 °C.

[9] This parameter is valid for any V_{CC} between 0 V and 1.2 V with a transition time of up to 10 ms. From V_{CC} = 1.2 V to V_{CC} = 3.3 V ± 0.3 V a transition time of 100 µs is permitted. This parameter is valid for T_{amb} = 25 °C only.

11. Dynamic characteristics

Table 9. Dynamic characteristics

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6;
T_{amb} = −40 °C to +85 °C

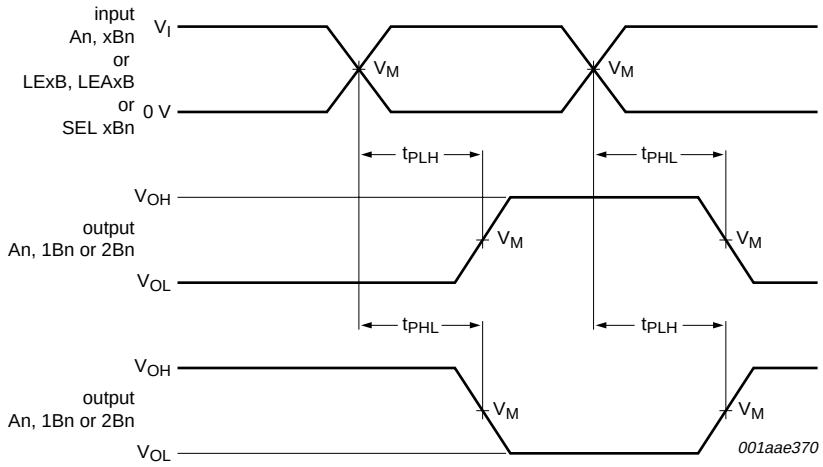
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CC} = 2.5 V ± 0.2 V						
t_{PLH}	LOW-to-HIGH propagation delay	see Figure 3				
	An to xBn; xBn to An		0.8	2.8	5.2	ns
	LExB to An; LEAxB to xBn		1.1	3.1	5.6	ns
	SEL(1Bn) to An		1.2	2.9	4.8	ns
	SEL(2Bn) to An		1.6	3.1	5.2	ns
t_{PHL}	HIGH-to-LOW propagation delay	see Figure 3				
	An to xBn; xBn to An		1.1	2.7	4.9	ns
	LExB to An; LEAxB to xBn		0.9	2.8	5.3	ns
	SEL(1Bn) to An		1.1	2.4	4.5	ns
	SEL(2Bn) to An		1.2	2.7	4.6	ns
t_{PZH}	output enable time to HIGH-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.8	3.5	5.5	ns
t_{PZL}	output enable time to LOW-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.3	2.8	4.6	ns
t_{PHZ}	output disable time from HIGH-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.8	2.8	4.6	ns
t_{PLZ}	output disable time from LOW-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.0	2.2	3.4	ns
t_{su}	setup time	see Figure 5				
	An to LEAxB; xBn to LExB		1.0	-	-	ns
t_h	hold time	see Figure 5				
	LEAxB to An; LExB to xBn		1.0	-	-	ns
t_W	pulse width	see Figure 5				
	LExB HIGH; LEAxB HIGH		3.3	-	-	ns

Table 9. Dynamic characteristics *…continued*

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6;
T_{amb} = −40 °C to +85 °C

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CC} = 3.3 V ± 0.3 V						
t_{PLH}	LOW-to-HIGH propagation delay	see Figure 3				
	An to xBn; xBn to An		0.7	2.2	3.6	ns
	LExB to An; LEAxB to xBn		1.0	2.4	4.1	ns
	SEL(1Bn) to An		1.0	2.2	3.4	ns
	SEL(2Bn) to An		0.9	2.3	3.8	ns
t_{PHL}	HIGH-to-LOW propagation delay	see Figure 3				
	An to xBn; xBn to An		0.7	2.0	3.4	ns
	LExB to An; LEAxB to xBn		1.1	2.3	3.9	ns
	SEL(1Bn) to An		1.0	2.0	3.3	ns
	SEL(2Bn) to An		1.6	2.1	3.4	ns
t_{PZH}	output enable time to HIGH-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.1	2.7	4.1	ns
t_{PZL}	output enable time to LOW-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		1.1	2.1	3.2	ns
t_{PHZ}	output disable time from HIGH-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		2.4	3.4	4.8	ns
t_{PLZ}	output disable time from LOW-state	see Figure 4				
	$\overline{OEA}$ to An; $\overline{OE1B}$ to 1Bn; $\overline{OE2B}$ to 2Bn		2.0	3.0	4.0	ns
t_{su}	setup time	see Figure 5				
	An to LEAxB; xBn to LExB		1	-	-	ns
t_h	hold time	see Figure 5				
	LEAxB to An; LExB to xBn		1	-	-	ns
t_W	pulse width	see Figure 5				
	LExB HIGH; LEAxB HIGH		3.3	-	-	ns

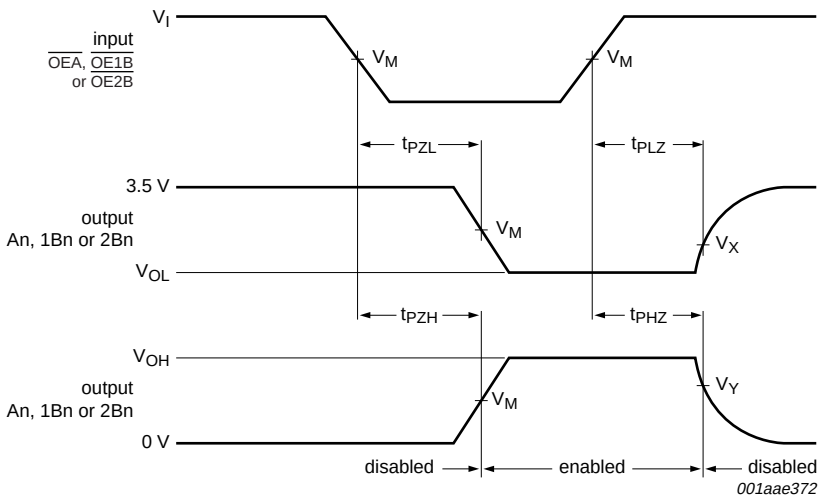
12. Waveforms



Measurement points are given in Table 10.

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

Fig 3. Propagation delay input (An; xBn) to output (xBn; An) or (LExB; LEAxB) to output (An; xBn) or (SELxBn) to output (An)



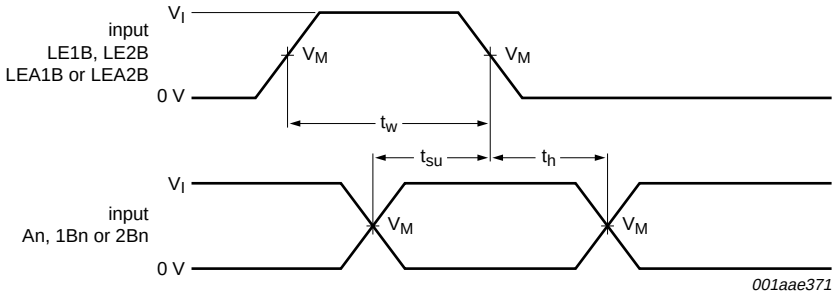
Measurement points are given in Table 10.

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

Fig 4. 3-state output disable and enable time

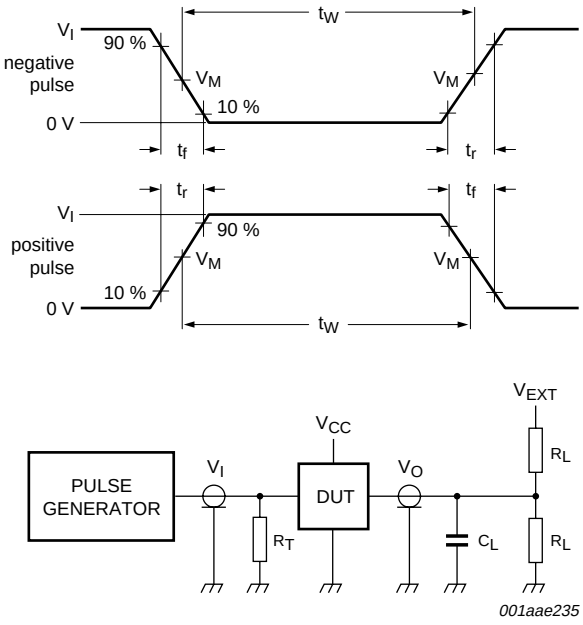
Table 10. Measurement points

Input	Output		
V_M	V_M	V_X	V_Y
1.5 V	1.5 V	V_{OL} + 0.3 V	V_{OH} − 0.3 V



Measurement points are given in Table 10.

Fig 5. Data setup and hold times



Test data is given in Table 11.

Definitions test circuit:

R_L = Load resistor.

C_L = Load capacitance including jig and probe capacitance.

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

V_{EXT} = Test voltage for switching times.

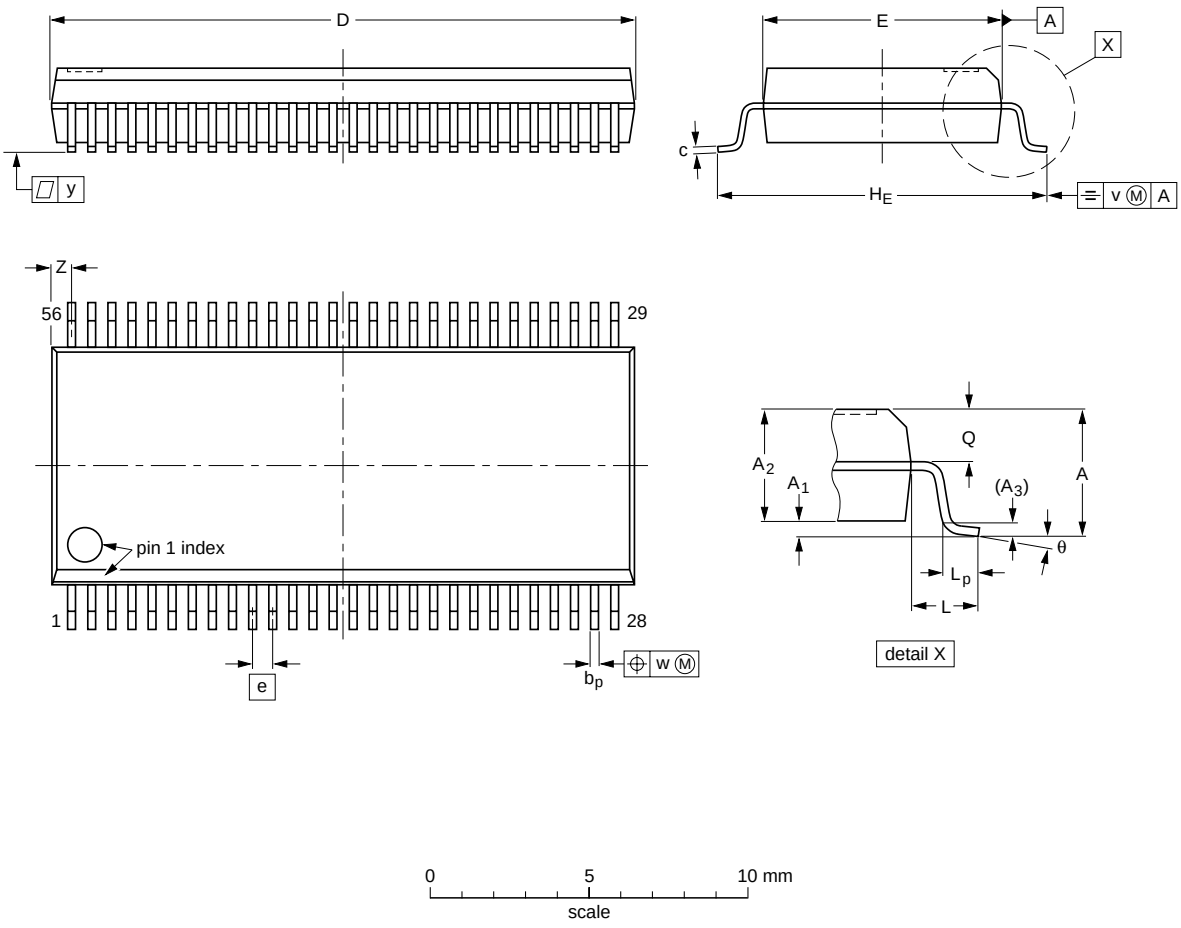
Fig 6. Load circuitry for switching times

Table 11. Test data

Input			Load		V_{EXT}		
V_I	f_i	t_r, t_f	C_L	R_L	t_{PLZ}, t_{PZL}	t_{PLH}, t_{PHL}	t_{PHZ}, t_{PZH}
3.0 V	≤ 10 MHz	≤ 2.5 ns	50 pF	500 Ω	7 V	open	GND

13. Package outline

SSOP56: plastic shrink small outline package; 56 leads; body width 7.5 mm **SOT371-1**



DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A_1	A_2	A_3	b_p	c	D (1)	E (1)	e	H_E	L	L_p	Q	v	w	y	Z (1)	θ
mm	2.8	0.4 0.2	2.35 2.20	0.25	0.3 0.2	0.22 0.13	18.55 18.30	7.6 7.4	0.635	10.4 10.1	1.4	1.0 0.6	1.2 1.0	0.25	0.18	0.1	0.85 0.40	8^o 0^o

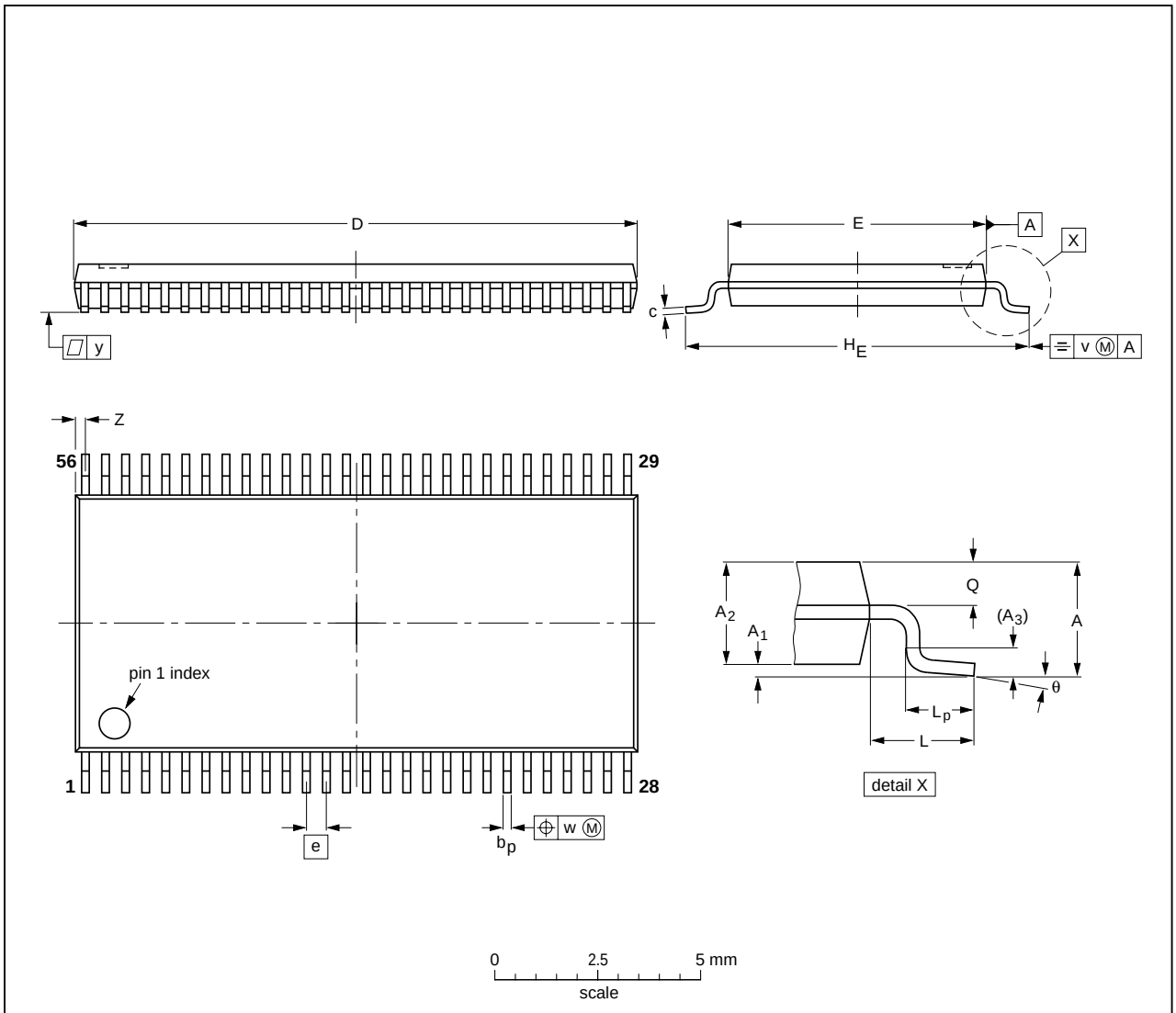
Note

1. Plastic or metal protrusions of 0.25 mm maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT371-1		MO-118				~~99-12-27~~ 03-02-18

Fig 7. Package outline SOT371-1 (SSOP56)

TSSOP56: plastic thin shrink small outline package; 56 leads; body width 6.1 mm **SOT364-1**



DIMENSIONS (mm are the original dimensions).

UNIT	A max.	A_1	A_2	A_3	b_p	c	D(1)	E(2)	e	H_E	L	L_p	Q	v	w	y	Z	θ
mm	1.2	0.15 0.05	1.05 0.85	0.25	0.28 0.17	**0.2** **0.1**	14.1 13.9	6.2 6.0	0.5	8.3 7.9	1	0.8 0.4	0.50 0.35	0.25	0.08	0.1	0.5 0.1	8^o 0^o

Notes

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 VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT364-1		MO-153				~~99-12-27~~ 03-02-19

Fig 8. Package outline SOT364-1 (TSSOP56)

14. Abbreviations

Table 12. Abbreviations

Acronym	Description
ESD	ElectroStatic Discharge
DUT	Device Under Test

15. Revision history

Table 13. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74ALVT16260_3	20060320	Product data sheet	-	74ALVT16260_2 (9397 750 03337)
Modifications:	• The format of this data sheet has been redesigned to comply with the new presentation and information standard of Philips Semiconductors. • Section 2 “Features”: modified ‘JEDEC Std JESD-17’ into ‘JESD78’. • Table 9 “Dynamic characteristics”: changed various values.			
74ALVT16260_2 (9397 750 03337)	19980130	Product specification	-	74ALVT16260_1
74ALVT16260_1	-	-	-	-

16. Legal information

16.1 Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.semiconductors.philips.com.

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