74AVC32T245

32-bit dual supply translating transceiver with configurable voltage translation; 3-state

Rev. 1 — 16 January 2013   **Product data sheet**

1. General description

The 74AVC32T245 is a 32-bit transceiver with bidirectional level voltage translation and 3-state outputs. The device can be used as eight 8-bit input-output ports (nAn and nBn), two 16-bit transceiver or as a 32-bit transceiver. It has dual supplies ($V_{CC(A)}$ and $V_{CC(B)}$) for voltage translation and four 8-bit input-output ports (nAn and nBn) each with its own output enable ($n\overline{OE}$) and send/receive (nDIR) input for direction control. $V_{CC(A)}$ and $V_{CC(B)}$ can be independently supplied at any voltage between 0.8 V and 3.6 V making the device suitable for low voltage translation between any of the following voltages: 0.8 V, 1.2 V, 1.5 V, 1.8 V, 2.5 V and 3.3 V. A HIGH on nDIR selects transmission from nAn to nBn while a LOW on nDIR selects transmission from nBn to nAn. A HIGH on $n\overline{OE}$ causes the outputs to assume a high-impedance OFF-state

The device is fully specified for partial power-down applications using I_{OFF}. The I_{OFF} circuitry disables the output, preventing any damaging backflow current through the device when it is powered down. In suspend mode when either $V_{CC(A)}$ or $V_{CC(B)}$ are at GND level, both nAn and nBn are in the high-impedance OFF-state.

2. Features and benefits

- Wide supply voltage range:
  - ◆ $V_{CC(A)}$: 0.8 V to 3.6 V
  - ◆ $V_{CC(B)}$: 0.8 V to 3.6 V
- Complies with JEDEC standards:
  - ◆ JESD8-12 (0.8 V to 1.3 V)
  - ◆ JESD8-11 (0.9 V to 1.65 V)
  - ◆ JESD8-7 (1.2 V to 1.95 V)
  - ◆ JESD8-5 (1.8 V to 2.7 V)
  - ◆ JESD8-B (2.7 V to 3.6 V)
- ESD protection:
  - ◆ HBM JESD22-A114F Class 3B exceeds 8000 V
  - ◆ MM JESD22-A115-A exceeds 200 V
  - ◆ CDM JESD22-C101D exceeds 1000 V
- Maximum data rates:
  - ◆ 380 Mbit/s ($\geq$ 1.8 V to 3.3 V translation)
  - ◆ 200 Mbit/s ($\geq$ 1.1 V to 3.3 V translation)
  - ◆ 200 Mbit/s ($\geq$ 1.1 V to 2.5 V translation)
  - ◆ 200 Mbit/s ($\geq$ 1.1 V to 1.8 V translation)
  - ◆ 150 Mbit/s ($\geq$ 1.1 V to 1.5 V translation)

nexperia

◆ 100 Mbit/s (≥ 1.1 V to 1.2 V translation)
■ Suspend mode
■ Latch-up performance exceeds 100 mA per JESD 78 Class II
■ Inputs accept voltages up to 3.6 V
■ I_{OFF} circuitry provides partial Power-down mode operation
■ Multiple package options
■ Specified from −40 °C to +85 °C and −40 °C to +125 °C

3. Ordering information

Table 1.   Ordering information

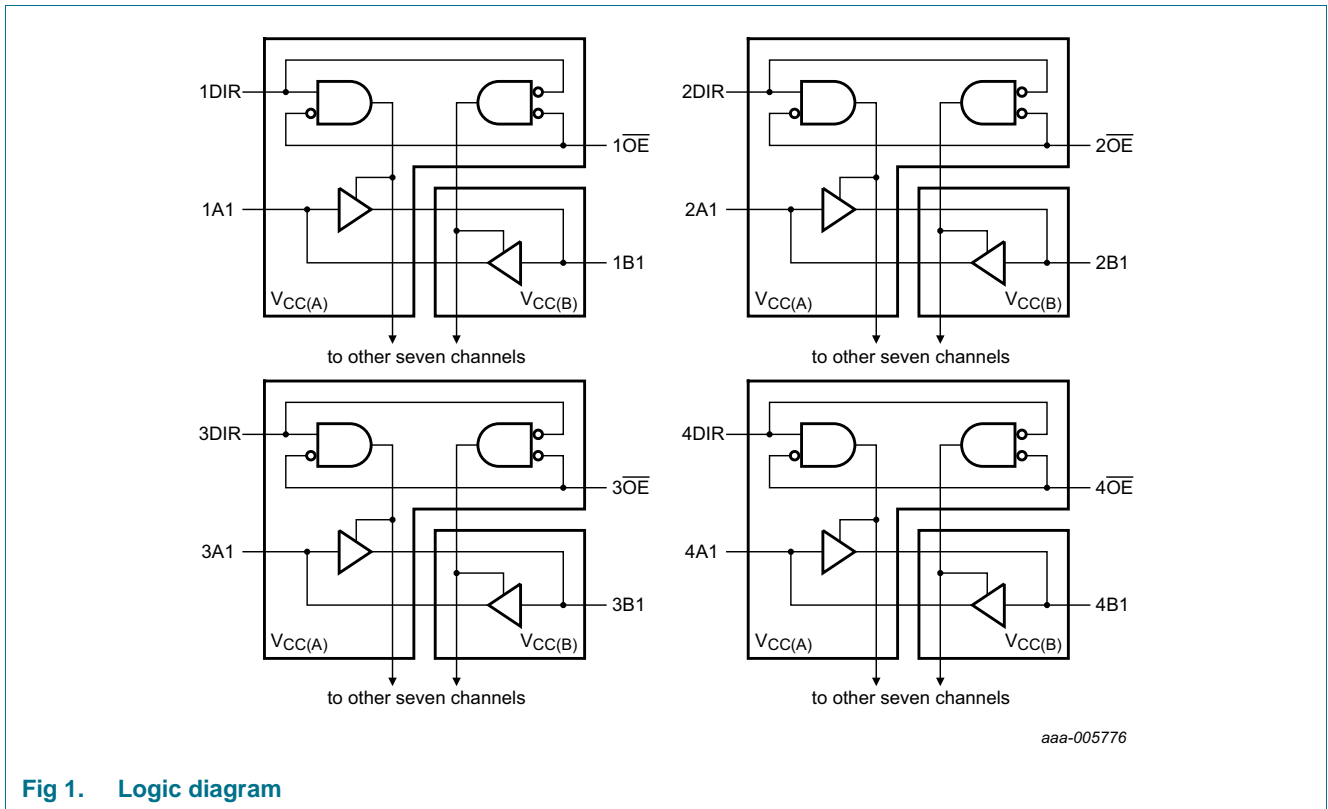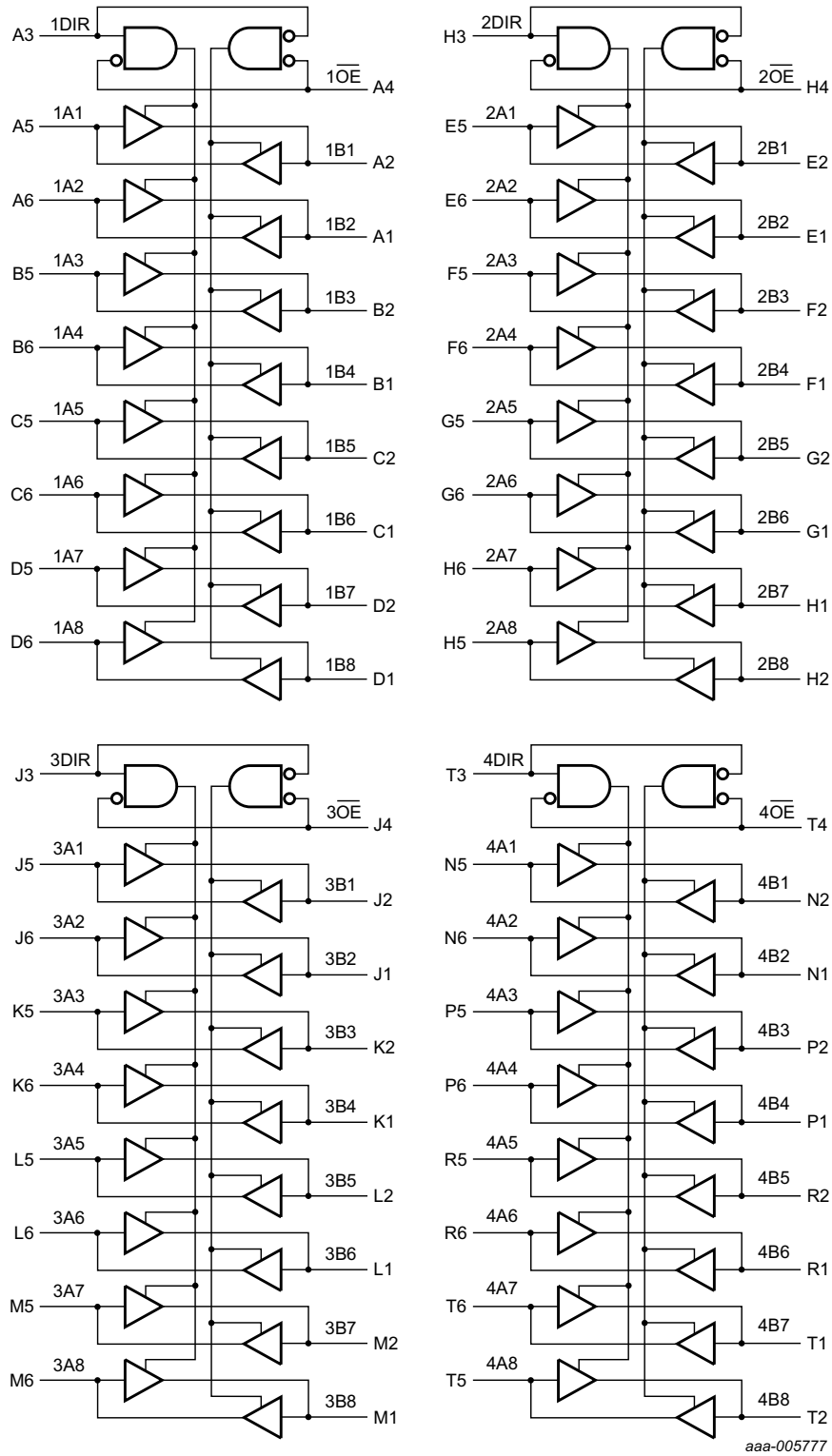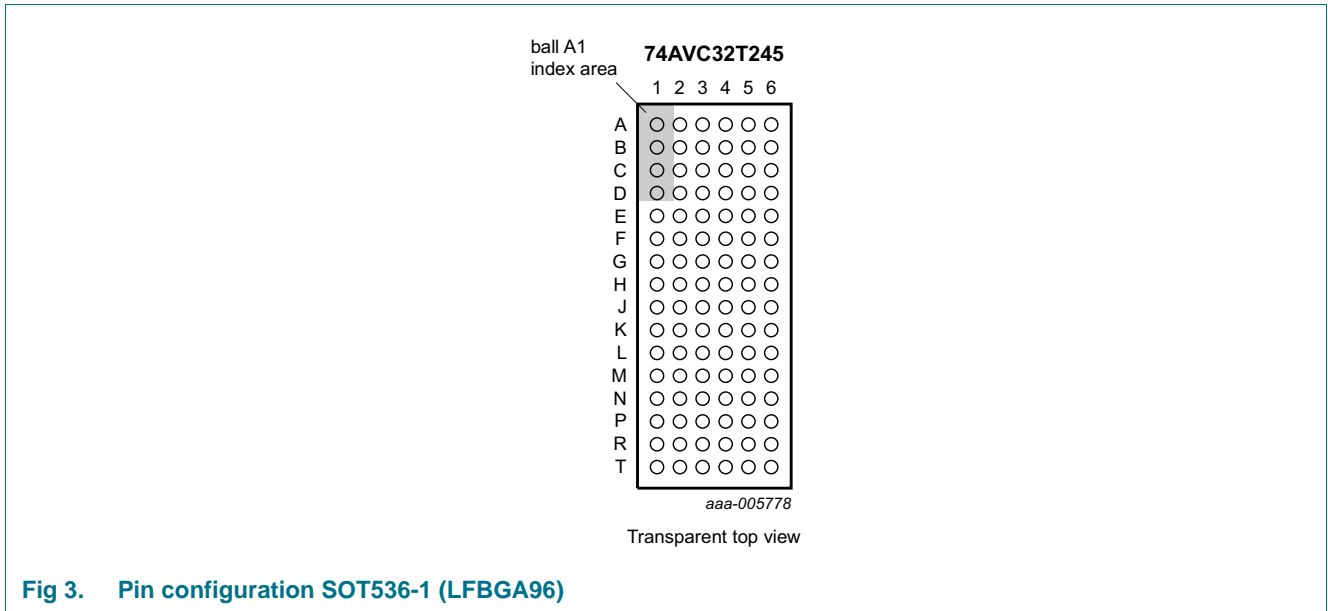| Type number	Package			
	Temperature range	Name	Description	Version
74AVC32T245EC	−40 °C to +125 °C	LFBGA96	plastic low profile fine-pitch ball grid array package; 96 balls; body 13.5 × 5.5 × 1.05 mm	SOT536-1

4. Functional diagram

Fig 1.   Logic diagram

All information provided in this document is subject to legal disclaimers.

aaa-005777

Fig 2. Logic symbol

5. Pinning information

5.1 Pinning

Fig 3. **Pin configuration SOT536-1 (LFBGA96)**

5.2 Pin description

Table 2. **Pin description**

Symbol	Ball	Description
1DIR, 2DIR, 3DIR, 4DIR	A3, H3, J3, T3	direction control
1$\overline{\text{OE}}$, 2$\overline{\text{OE}}$, 3$\overline{\text{OE}}$, 4$\overline{\text{OE}}$	A4, H4, J4, T4	output enable input (active LOW)
1A1 to 1A8	A5, A6, B5, B6, C5, C6, D5, D6	input or output
1B1 to 1B8	A2, A1, B2, B1, C2, C1, D2, D1	input or output
2A1 to 2A8	E5, E6, F5, F6, G5, G6, H6, H5	input or output
2B1 to 2B8	E2, E1, F2, F1, G2, G1, H1, H2	input or output
3A1 to 3A8	J5, J6, K5, K6, L5, L6, M5, M6	input or output
3B1 to 3B8	J2, J1, K2, K1, L2, L1, M2, M1	input or output
4A1 to 4A8	N5, N6, P5, P6, R5, R6, T6, T5	input or output
4B1 to 4B8	N2, N1, P2, P1, R2, R1, T1, T2	input or output
GND[1]	B3, B4, D3, D4, E3, E4, G3, G4, K3, K4, M3, M4, N3, N4, R3, R4	ground (0 V)
$V_{CC(A)}$	C4, F4, L4, P4	supply voltage A (nAn, n$\overline{\text{OE}}$ and nDIR inputs are referenced to $V_{CC(A)}$)
$V_{CC(B)}$	C3, F3, L3, P3	supply voltage B (nBn inputs are referenced to $V_{CC(B)}$)

[1]   All GND pins must be connected to ground (0 V).

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

4 of 24

6. Functional description

Table 3.   Function table[1]

Supply voltage	Input		Input/output[3]	
$V_{CC(A)}$, $V_{CC(B)}$	nOE[2]	nDIR[2]	nAn[2]	nBn[2]
0.8 V to 3.6 V	L	L	nAn = nBn	input
0.8 V to 3.6 V	L	H	input	nBn = nAn
0.8 V to 3.6 V	H	X	Z	Z
GND[3]	X	X	Z	Z

[1]   H = HIGH voltage level; L = LOW voltage level; X = don't care; Z = high-impedance OFF-state.

[2]   The nAn, nDIR and nOE input circuit is referenced to $V_{CC(A)}$; The nBn input circuit is referenced to $V_{CC(B)}$.

[3]   If at least one of $V_{CC(A)}$ or $V_{CC(B)}$ is at GND level, the device goes into suspend mode.

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
$V_{CC(A)}$	supply voltage A			−0.5	+4.6	V
$V_{CC(B)}$	supply voltage B			−0.5	+4.6	V
I_{IK}	input clamping current	$V_I < 0$ V		−50	-	mA
V_I	input voltage		[1]	−0.5	+4.6	V
I_{OK}	output clamping current	$V_O < 0$ V		−50	-	mA
V_O	output voltage	Active mode	[1][2][3]	−0.5	V_{CCO} + 0.5	V
		Suspend or 3-state mode	[1]	−0.5	+4.6	V
I_O	output current	V_O = 0 V to V_{CCO}	[2]	-	±50	mA
I_{CC}	supply current	per $V_{CC(A)}$ or $V_{CC(B)}$ pin		-	100	mA
I_{GND}	ground current	per GND pin		−100	-	mA
T_{stg}	storage temperature			−65	+150	°C
P_{tot}	total power dissipation	T_{amb} = −40 °C to +125 °C				
		LFBGA96 package	[4]	-	1000	mW

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

[2] V_{CCO} is the supply voltage associated with the output port.

[3] V_{CCO} + 0.5 V should not exceed 4.6 V.

[4]   Above 70 °C the value of P_{tot} derates linearly with 1.8 mW/K.

8. Recommended operating conditions

Table 5.   Recommended operating conditions

Symbol	Parameter	Conditions		Min	Max	Unit
$V_{CC(A)}$	supply voltage A			0.8	3.6	V
$V_{CC(B)}$	supply voltage B			0.8	3.6	V
V_I	input voltage			0	3.6	V
V_O	output voltage	Active mode	[1]	0	V_{CCO}	V
		Suspend or 3-state mode		0	3.6	V
T_{amb}	ambient temperature			−40	+125	°C
$\Delta t/\Delta V$	input transition rise and fall rate	V_{CCI} = 0.8 V to 3.6 V	[2]	-	5	ns/V

[1] V_{CCO} is the supply voltage associated with the output port.

[2] V_{CCI} is the supply voltage associated with the input port.

9. Static characteristics

Table 6.   Typical static characteristics at T_{amb} = 25 °C[1][2]
At recommended operating conditions; voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$ or V_{IL}					
		I_O = −1.5 mA; $V_{CC(A)} = V_{CC(B)}$ = 0.8 V		-	0.69	-	V
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ or V_{IL}					
		I_O = 1.5 mA; $V_{CC(A)} = V_{CC(B)}$ = 0.8 V		-	0.07	-	V
I_I	input leakage current	nDIR, nOE input; V_I = 0 V or 3.6 V; $V_{CC(A)} = V_{CC(B)}$ = 0.8 V to 3.6 V		-	±0.025	±0.25	μA
I_{OZ}	OFF-state output current	A or B port; V_O = 0 V or V_{CCO}; $V_{CC(A)} = V_{CC(B)}$ = 3.6 V	[3]	-	±0.5	±2.5	μA
		suspend mode A port; V_O = 0 V or V_{CCO}; $V_{CC(A)}$ = 3.6 V; $V_{CC(B)}$ = 0 V	[3]	-	±0.5	±2.5	μA
		suspend mode B port; V_O = 0 V or V_{CCO}; $V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 3.6 V	[3]	-	±0.5	±2.5	μA
I_{OFF}	power-off leakage current	A port; V_I or V_O = 0 V to 3.6 V; $V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 0.8 V to 3.6 V		-	±0.1	±1	μA
		B port; V_I or V_O = 0 V to 3.6 V; $V_{CC(B)}$ = 0 V; $V_{CC(A)}$ = 0.8 V to 3.6 V		-	±0.1	±1	μA
C_I	input capacitance	nDIR, nOE input; V_I = 0 V or 3.3 V; $V_{CC(A)} = V_{CC(B)}$ = 3.3 V		-	2.0	-	pF
$C_{I/O}$	input/output capacitance	A and B port; V_O = 3.3 V or 0 V; $V_{CC(A)} = V_{CC(B)}$ = 3.3 V		-	4.5	-	pF

[1] V_{CCO} is the supply voltage associated with the output port.

[2] V_{CCI} is the supply voltage associated with the data input port.

[3]   For I/O ports, the parameter I_{OZ} includes the input leakage current.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet   **Rev. 1 — 16 January 2013**   **6 of 24**

Table 7. **Static characteristics** [1][2]

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

Symbol	Parameter	Conditions	−40 °C to +85 °C		−40 °C to +125 °C		Unit
			Min	**Max**	**Min**	**Max**	
V_{IH}	HIGH-level input voltage	data input					
		V_{CCI} = 0.8 V	$0.70V_{CCI}$	-	$0.70V_{CCI}$	-	V
		V_{CCI} = 1.1 V to 1.95 V	$0.65V_{CCI}$	-	$0.65V_{CCI}$	-	V
		V_{CCI} = 2.3 V to 2.7 V	1.6	-	1.6	-	V
		V_{CCI} = 3.0 V to 3.6 V	2	-	2	-	V
		nDIR, nOE input					
		$V_{CC(A)}$ = 0.8 V	$0.70V_{CC(A)}$	-	$0.70V_{CC(A)}$	-	V
		$V_{CC(A)}$ = 1.1 V to 1.95 V	$0.65V_{CC(A)}$	-	$0.65V_{CC(A)}$	-	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V	1.6	-	1.6	-	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V	2	-	2	-	V
V_{IL}	LOW-level input voltage	data input					
		V_{CCI} = 0.8 V	-	$0.30V_{CCI}$	-	$0.30V_{CCI}$	V
		V_{CCI} = 1.1 V to 1.95 V	-	$0.35V_{CCI}$	-	$0.35V_{CCI}$	V
		V_{CCI} = 2.3 V to 2.7 V	-	0.7	-	0.7	V
		V_{CCI} = 3.0 V to 3.6 V	-	0.8	-	0.8	V
		nDIR, nOE input					
		$V_{CC(A)}$ = 0.8 V	-	$0.30V_{CC(A)}$	-	$0.30V_{CC(A)}$	V
		$V_{CC(A)}$ = 1.1 V to 1.95 V	-	$0.35V_{CC(A)}$	-	$0.35V_{CC(A)}$	V
		$V_{CC(A)}$ = 2.3 V to 2.7 V	-	0.7	-	0.7	V
		$V_{CC(A)}$ = 3.0 V to 3.6 V	-	0.8	-	0.8	V
V_{OH}	HIGH-level output voltage	$V_I = V_{IH}$ or V_{IL}					
		$I_O = -100\ \mu A$; $V_{CC(A)} = V_{CC(B)}$ = 0.8 V to 3.6 V	$V_{CCO} - 0.1$	-	$V_{CCO} - 0.1$	-	V
		$I_O = -3$ mA; $V_{CC(A)} = V_{CC(B)}$ = 1.1 V	0.85	-	0.85	-	V
		$I_O = -6$ mA; $V_{CC(A)} = V_{CC(B)}$ = 1.4 V	1.05	-	1.05	-	V
		$I_O = -8$ mA; $V_{CC(A)} = V_{CC(B)}$ = 1.65 V	1.2	-	1.2	-	V
		$I_O = -9$ mA; $V_{CC(A)} = V_{CC(B)}$ = 2.3 V	1.75	-	1.75	-	V
		$I_O = -12$ mA; $V_{CC(A)} = V_{CC(B)}$ = 3.0 V	2.3	-	2.3	-	V

74AVC32T245

All information provided in this document is subject to legal disclaimers.

Table 7.   Static characteristics *…continued*[1][2]

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

Symbol	Parameter	Conditions		–40 °C to +85 °C		–40 °C to +125 °C		Unit
				Min	Max	Min	Max	
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ or V_{IL}						
		$I_O = 100\ \mu A$; $V_{CC(A)} = V_{CC(B)} = 0.8\ V$ to $3.6\ V$		-	0.1	-	0.1	V
		$I_O = 3\ mA$; $V_{CC(A)} = V_{CC(B)} = 1.1\ V$		-	0.25	-	0.25	V
		$I_O = 6\ mA$; $V_{CC(A)} = V_{CC(B)} = 1.4\ V$		-	0.35	-	0.35	V
		$I_O = 8\ mA$; $V_{CC(A)} = V_{CC(B)} = 1.65\ V$		-	0.45	-	0.45	V
		$I_O = 9\ mA$; $V_{CC(A)} = V_{CC(B)} = 2.3\ V$		-	0.55	-	0.55	V
		$I_O = 12\ mA$; $V_{CC(A)} = V_{CC(B)} = 3.0\ V$		-	0.7	-	0.7	V
I_I	input leakage current	nDIR, nOE input; $V_I = 0\ V$ or $3.6\ V$; $V_{CC(A)} = V_{CC(B)} = 0.8\ V$ to $3.6\ V$		-	±1	-	±5	μA
I_{OZ}	OFF-state output current	A or B port; $V_O = 0\ V$ or V_{CCO}; $V_{CC(A)} = V_{CC(B)} = 3.6\ V$	[3]	-	±5	-	±30	μA
		suspend mode A port; $V_O = 0\ V$ or V_{CCO}; $V_{CC(A)} = 3.6\ V$; $V_{CC(B)} = 0\ V$	[3]	-	±5	-	±30	μA
		suspend mode B port; $V_O = 0\ V$ or V_{CCO}; $V_{CC(A)} = 0\ V$; $V_{CC(B)} = 3.6\ V$	[3]	-	±5	-	±30	μA
I_{OFF}	power-off leakage current	A port; V_I or $V_O = 0\ V$ to $3.6\ V$; $V_{CC(A)} = 0\ V$; $V_{CC(B)} = 0.8\ V$ to $3.6\ V$		-	±5	-	±30	μA
		B port; V_I or $V_O = 0\ V$ to $3.6\ V$; $V_{CC(B)} = 0\ V$; $V_{CC(A)} = 0.8\ V$ to $3.6\ V$		-	±5	-	±30	μA

74AVC32T245

Product data sheet **Rev. 1 — 16 January 2013** **8 of 24**

Table 7.   Static characteristics *...continued*[1][2]

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

Symbol	Parameter	Conditions	–40 °C to +85 °C		–40 °C to +125 °C		Unit
			Min	Max	Min	Max	
I_{CC}	supply current	A port; V_I = 0 V or V_{CCi}; I_O = 0 A					
		$V_{CC(A)}$ = 0.8 V to 3.6 V; $V_{CC(B)}$ = 0.8 V to 3.6 V	-	60	-	250	μA
		$V_{CC(A)}$ = 1.1 V to 3.6 V; $V_{CC(B)}$ = 1.1 V to 3.6 V	-	50	-	200	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(B)}$ = 0 V	-	50	-	200	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 3.6 V	−10	-	−40	-	μA
		B port; V_I = 0 V or V_{CCi}; I_O = 0 A					
		$V_{CC(A)}$ = 0.8 V to 3.6 V; $V_{CC(B)}$ = 0.8 V to 3.6 V	-	60	-	250	μA
		$V_{CC(A)}$ = 1.1 V to 3.6 V; $V_{CC(B)}$ = 1.1 V to 3.6 V	-	50	-	200	μA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(B)}$ = 0 V	−10	-	−40	-	μA
		$V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 3.6 V	-	50	-	200	μA
		A plus B port ($I_{CC(A)}$ + $I_{CC(B)}$); I_O = 0 A; V_I = 0 V or V_{CCi}; $V_{CC(A)}$ = 0.8 V to 3.6 V; $V_{CC(B)}$ = 0.8 V to 3.6 V	-	110	-	370	μA
		A plus B port ($I_{CC(A)}$ + $I_{CC(B)}$); I_O = 0 A; V_I = 0 V or V_{CCi}; $V_{CC(A)}$ = 1.1 V to 3.6 V; $V_{CC(B)}$ = 1.1 V to 3.6 V	-	90	-	300	μA

[1] V_{CCO} is the supply voltage associated with the output port.

[2] V_{CCi} is the supply voltage associated with the data input port.

[3]   For I/O ports, the parameter I_{OZ} includes the input leakage current.

Table 8.   Typical total supply current ($I_{CC(A)}$ + $I_{CC(B)}$)

$V_{CC(A)}$	$V_{CC(B)}$							Unit
	0 V	0.8 V	1.2 V	1.5 V	1.8 V	2.5 V	3.3 V	
0 V	0	0.2	0.2	0.2	0.2	0.2	0.2	μA
0.8 V	0.2	0.2	0.2	0.2	0.2	0.6	3.2	μA
1.2 V	0.2	0.2	0.2	0.2	0.2	0.2	1.6	μA
1.5 V	0.2	0.2	0.2	0.2	0.2	0.2	0.8	μA
1.8 V	0.2	0.2	0.2	0.2	0.2	0.2	0.4	μA
2.5 V	0.2	0.6	0.2	0.2	0.2	0.2	0.2	μA
3.3 V	0.2	3.2	1.6	0.8	0.4	0.2	0.2	μA

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

9 of 24

10. Dynamic characteristics

Table 9. **Typical power dissipation capacitance at $V_{CC(A)} = V_{CC(B)}$ and T_{amb} = 25 °C** [1][2]
Voltages are referenced to GND (ground = 0 V).

Symbol	Parameter	Conditions	$V_{CC(A)} = V_{CC(B)}$						Unit
			0.8 V	1.2 V	1.5 V	1.8 V	2.5 V	3.3 V	
C_{PD}	power dissipation capacitance	A port: (direction nAn to nBn); output enabled	0.2	0.2	0.2	0.2	0.3	0.4	pF
		A port: (direction nAn to nBn); output disabled	0.2	0.2	0.2	0.2	0.3	0.4	pF
		A port: (direction nBn to nAn); output enabled	9	9.7	9.8	10.3	11.7	13.7	pF
		A port: (direction nBn to nAn); output disabled	0.6	0.6	0.6	0.7	0.7	0.7	pF
		B port: (direction nAn to nBn); output enabled	9	9.7	9.8	10.3	11.7	13.7	pF
		B port: (direction nAn to nBn); output disabled	0.6	0.6	0.6	0.7	0.7	0.7	pF
		B port: (direction nBn to nAn); output enabled	0.2	0.2	0.2	0.2	0.3	0.4	pF
		B port: (direction nBn to nAn); output disabled	0.2	0.2	0.2	0.2	0.3	0.4	pF

[1] 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 = load capacitance in pF;

V_{CC} = supply voltage in V;

N = number of inputs switching;

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

[2] f_i = 10 MHz; V_I = GND to V_{CC}; $t_r = t_f$ = 1 ns; C_L = 0 pF; $R_L = \infty \ \Omega$.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

Product data sheet

Rev. 1 — 16 January 2013

10 of 24

Table 10. Typical dynamic characteristics at $V_{CC(A)}$ = 0.8 V and T_{amb} = 25 °C [1]

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6; for wave forms see Figure 4 and Figure 5

Symbol	Parameter	Conditions	$V_{CC(B)}$						Unit
			0.8 V	1.2 V	1.5 V	1.8 V	2.5 V	3.3 V	
t_{pd}	propagation delay	nAn to nBn	14.4	7.0	6.2	6.0	5.9	6.0	ns
		nBn to nAn	14.4	12.4	12.1	11.9	11.8	11.8	ns
t_{dis}	disable time	nOE to nAn	16.2	16.2	16.2	16.2	16.2	16.2	ns
		nOE to nBn	17.6	10.0	9.0	9.1	8.7	9.3	ns
t_{en}	enable time	nOE to nAn	21.9	21.9	21.9	21.9	21.9	21.9	ns
		nOE to nBn	22.2	11.1	9.8	9.4	9.4	9.6	ns

[1] t_{pd} is the same as t_{PLH} and t_{PHL}; t_{dis} is the same as t_{PLZ} and t_{PHZ}; t_{en} is the same as t_{PZL} and t_{PZH}.

Table 11. Typical dynamic characteristics at $V_{CC(B)}$ = 0.8 V and T_{amb} = 25 °C [1]

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6; for wave forms see Figure 4 and Figure 5

Symbol	Parameter	Conditions	$V_{CC(A)}$						Unit
			0.8 V	1.2 V	1.5 V	1.8 V	2.5 V	3.3 V	
t_{pd}	propagation delay	nAn to nBn	14.4	12.4	12.1	11.9	11.8	11.8	ns
		nBn to nAn	14.4	7.0	6.2	6.0	5.9	6.0	ns
t_{dis}	disable time	nOE to nAn	16.2	5.9	4.4	4.2	3.1	3.5	ns
		nOE to nBn	17.6	14.2	13.7	13.6	13.3	13.1	ns
t_{en}	enable time	nOE to nAn	21.9	6.4	4.4	3.5	2.6	2.3	ns
		nOE to nBn	22.2	17.7	17.2	17.0	16.8	16.7	ns

[1] t_{pd} is the same as t_{PLH} and t_{PHL}; t_{dis} is the same as t_{PLZ} and t_{PHZ}; t_{en} is the same as t_{PZL} and t_{PZH}.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet **Rev. 1 — 16 January 2013** 11 of 24

Table 12. Dynamic characteristics for temperature range −40 °C to +85 °C [1]

Voltages are referenced to GND (ground = 0 V); for test circuit see *Figure 6*; for wave forms see *Figure 4* and *Figure 5*.

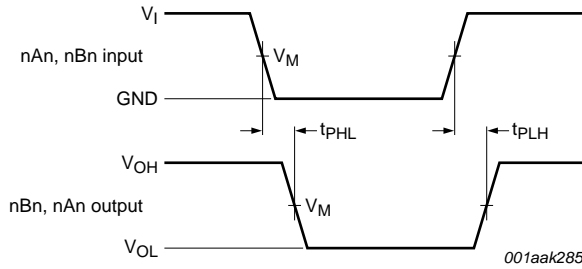| Symbol	Parameter	Conditions	$V_{CC(B)}$										Unit
			1.2 V ± 0.1 V		1.5 V ± 0.1 V		1.8 V ± 0.15 V		2.5 V ± 0.2 V		3.3 V ± 0.3 V		
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
$V_{CC(A)}$ = 1.1 V to 1.3 V													
t_{pd}	propagation delay	nAn to nBn	0.5	9.2	0.5	6.9	0.5	6.0	0.5	5.1	0.5	4.9	ns
		nBn to nAn	0.5	9.2	0.5	8.7	0.5	8.5	0.5	8.2	0.5	8.0	ns
t_{dis}	disable time	nOE to nAn	1.5	11.6	1.5	11.6	1.5	11.6	1.5	11.6	1.5	11.6	ns
		nOE to nBn	1.5	12.5	1.5	9.7	1.5	9.5	1.0	8.1	1.0	8.9	ns
t_{en}	enable time	nOE to nAn	1.0	14.5	1.0	14.5	1.0	14.5	1.0	14.5	1.0	14.5	ns
		nOE to nBn	1.1	14.9	1.1	11.0	1.1	9.6	1.0	8.1	1.0	7.7	ns
$V_{CC(A)}$ = 1.4 V to 1.6 V													
t_{pd}	propagation delay	nAn to nBn	0.5	8.7	0.5	6.2	0.5	5.2	0.5	4.1	0.5	3.7	ns
		nBn to nAn	0.5	6.9	0.5	6.2	0.5	5.9	0.5	5.6	0.5	5.5	ns
t_{dis}	disable time	nOE to nAn	1.5	9.1	1.5	9.1	1.5	9.1	1.5	9.1	1.5	9.1	ns
		nOE to nBn	1.5	11.4	1.5	8.7	1.5	7.5	1.0	6.5	1.0	6.3	ns
t_{en}	enable time	nOE to nAn	1.0	10.1	1.0	10.1	1.0	10.1	1.0	10.1	1.0	10.1	ns
		nOE to nBn	1.0	13.5	1.0	10.1	0.5	8.1	0.5	5.9	0.5	5.2	ns
$V_{CC(A)}$ = 1.65 V to 1.95 V													
t_{pd}	propagation delay	nAn to nBn	0.5	8.5	0.5	5.9	0.5	4.8	0.5	3.7	0.5	3.3	ns
		nBn to nAn	0.5	6.0	0.5	5.2	0.5	4.8	0.5	4.5	0.5	4.4	ns
t_{dis}	disable time	nOE to nAn	1.5	7.7	1.5	7.7	1.5	7.7	1.5	7.7	1.5	7.7	ns
		nOE to nBn	1.5	11.1	1.5	8.4	1.5	7.1	1.0	5.9	1.0	5.7	ns
t_{en}	enable time	nOE to nAn	1.0	7.8	1.0	7.8	1.0	7.8	1.0	7.8	1.0	7.8	ns
		nOE to nBn	1.0	13.0	1.0	9.2	0.5	7.4	0.5	5.3	0.5	4.5	ns
$V_{CC(A)}$ = 2.3 V to 2.7 V													
t_{pd}	propagation delay	nAn to nBn	0.5	8.2	0.5	5.6	0.5	4.6	0.5	3.3	0.5	2.8	ns
		nBn to nAn	0.5	5.1	0.5	4.1	0.5	3.7	0.5	3.4	0.5	3.2	ns
t_{dis}	disable time	nOE to nAn	1.0	6.1	1.0	6.1	1.0	6.1	1.0	6.1	1.0	6.1	ns
		nOE to nBn	1.0	10.6	1.0	7.9	1.0	6.6	1.0	6.1	1.0	5.2	ns
t_{en}	enable time	nOE to nAn	0.5	5.3	0.5	5.3	0.5	5.3	0.5	5.3	0.5	5.3	ns
		nOE to nBn	0.5	12.5	0.5	9.4	0.5	7.3	0.5	5.1	0.5	4.5	ns
$V_{CC(A)}$ = 3.0 V to 3.6 V													
t_{pd}	propagation delay	nAn to nBn	0.5	8.0	0.5	5.5	0.5	4.4	0.5	3.2	0.5	2.7	ns
		nBn to nAn	0.5	4.9	0.5	3.7	0.5	3.3	0.5	2.9	0.5	2.7	ns
t_{dis}	disable time	nOE to nAn	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	ns
		nOE to nBn	1.0	10.3	1.0	7.7	1.0	6.5	1.0	5.2	0.5	5.0	ns
t_{en}	enable time	nOE to nAn	0.5	4.3	0.5	4.3	0.5	4.2	0.5	4.1	0.5	4.0	ns
		nOE to nBn	0.5	12.4	0.5	9.3	0.5	7.2	0.5	4.9	0.5	4.0	ns

[1] t_{pd} is the same as t_{PLH} and t_{PHL}; t_{dis} is the same as t_{PLZ} and t_{PHZ}; t_{en} is the same as t_{PZL} and t_{PZH}.

74AVC32T245

Product data sheet

Rev. 1 — 16 January 2013

12 of 24

Table 13. Dynamic characteristics for temperature range −40 °C to +125 °C [1]

Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6; for wave forms see Figure 4 and Figure 5

Symbol	Parameter	Conditions	$V_{CC(B)}$										Unit
			1.2 V ± 0.1 V		1.5 V ± 0.1 V		1.8 V ± 0.15 V		2.5 V ± 0.2 V		3.3 V ± 0.3 V		
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
$V_{CC(A)}$ = 1.1 V to 1.3 V													
t_{pd}	propagation delay	nAn to nBn	0.5	10.2	0.5	7.6	0.5	6.6	0.5	5.7	0.5	5.4	ns
		nBn to nAn	0.5	10.2	0.5	9.6	0.5	9.4	0.5	9.1	0.5	8.8	ns
t_{dis}	disable time	nOE to nAn	1.5	12.8	1.5	12.8	1.5	12.8	1.5	12.8	1.5	12.8	ns
		nOE to nBn	1.5	13.8	1.5	10.7	1.5	10.5	1.0	9.0	1.5	9.8	ns
t_{en}	enable time	nOE to nAn	1.0	16.0	1.0	16.0	1.0	16.0	1.0	16.0	1.0	16.0	ns
		nOE to nBn	1.1	16.4	1.1	12.1	1.1	10.6	1.0	9.0	1.0	8.5	ns
$V_{CC(A)}$ = 1.4 V to 1.6 V													
t_{pd}	propagation delay	nAn to nBn	0.5	9.6	0.5	6.9	0.5	5.8	0.5	4.6	0.5	4.1	ns
		nBn to nAn	0.5	7.6	0.5	6.9	0.5	6.5	0.5	6.2	0.5	6.1	ns
t_{dis}	disable time	nOE to nAn	1.5	10.1	1.5	10.1	1.5	10.1	1.5	10.1	1.5	10.1	ns
		nOE to nBn	1.5	12.6	1.5	9.6	1.5	8.3	1.0	7.2	1.0	7.0	ns
t_{en}	enable time	nOE to nAn	1.0	11.2	1.0	11.2	1.0	11.2	1.0	11.2	1.0	11.2	ns
		nOE to nBn	1.0	14.9	1.0	11.2	0.5	9.0	0.5	6.5	0.5	5.8	ns
$V_{CC(A)}$ = 1.65 V to 1.95 V													
t_{pd}	propagation delay	nAn to nBn	0.5	9.4	0.5	6.5	0.5	5.3	0.5	4.1	0.5	3.7	ns
		nBn to nAn	0.5	6.6	0.5	5.8	0.5	5.3	0.5	5.0	0.5	4.9	ns
t_{dis}	disable time	nOE to nAn	1.5	8.5	1.5	8.5	1.5	8.5	1.5	8.5	1.5	8.5	ns
		nOE to nBn	1.5	12.3	1.5	9.3	1.5	7.9	1.0	6.5	1.0	6.3	ns
t_{en}	enable time	nOE to nAn	1.0	8.6	1.0	8.6	1.0	8.6	1.0	8.6	1.0	8.6	ns
		nOE to nBn	1.0	14.3	1.0	10.2	0.5	8.2	0.5	5.9	0.5	5.0	ns
$V_{CC(A)}$ = 2.3 V to 2.7 V													
t_{pd}	propagation delay	nAn to nBn	0.5	9.1	0.5	6.2	0.5	5.1	0.5	3.7	0.5	3.1	ns
		nBn to nAn	0.5	5.7	0.5	4.6	0.5	4.1	0.5	3.8	0.5	3.6	ns
t_{dis}	disable time	nOE to nAn	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	1.0	6.8	ns
		nOE to nBn	1.0	11.7	1.0	8.7	1.0	7.3	1.0	6.8	1.0	5.8	ns
t_{en}	enable time	nOE to nAn	0.5	5.9	0.5	5.9	0.5	5.9	0.5	5.9	0.5	5.9	ns
		nOE to nBn	0.5	13.8	0.5	10.4	0.5	8.1	0.5	5.7	0.5	5.0	ns
$V_{CC(A)}$ = 3.0 V to 3.6 V													
t_{pd}	propagation delay	nAn to nBn	0.5	8.8	0.5	6.1	0.5	4.9	0.5	3.6	0.5	3.0	ns
		nBn to nAn	0.5	5.4	0.5	4.1	0.5	3.7	0.5	3.2	0.5	3.0	ns
t_{dis}	disable time	nOE to nAn	0.5	5.5	0.5	5.5	0.5	5.5	0.5	5.5	0.5	5.5	ns
		nOE to nBn	1.0	11.4	1.0	8.5	1.0	7.2	1.0	5.8	0.5	5.5	ns
t_{en}	enable time	nOE to nAn	0.5	4.8	0.5	4.8	0.5	4.7	0.5	4.6	0.5	4.4	ns
		nOE to nBn	0.5	13.7	0.5	10.3	0.5	8.0	0.5	5.4	0.5	4.4	ns

[1] t_{pd} is the same as t_{PLH} and t_{PHL}; t_{dis} is the same as t_{PLZ} and t_{PHZ}; t_{en} is the same as t_{PZL} and t_{PZH}.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet **Rev. 1 — 16 January 2013** **13 of 24**

11. Waveforms

Measurement points are given in Table 14.

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

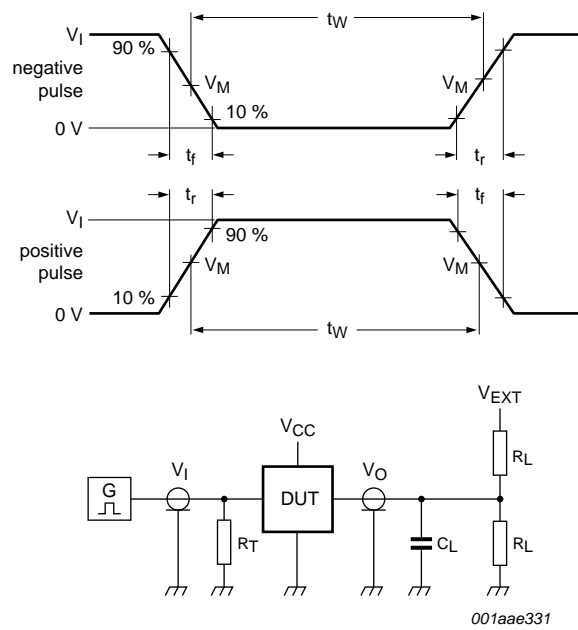**Fig 4.   The data input (nAn, nBn) to output (nBn, nAn) propagation delay times**
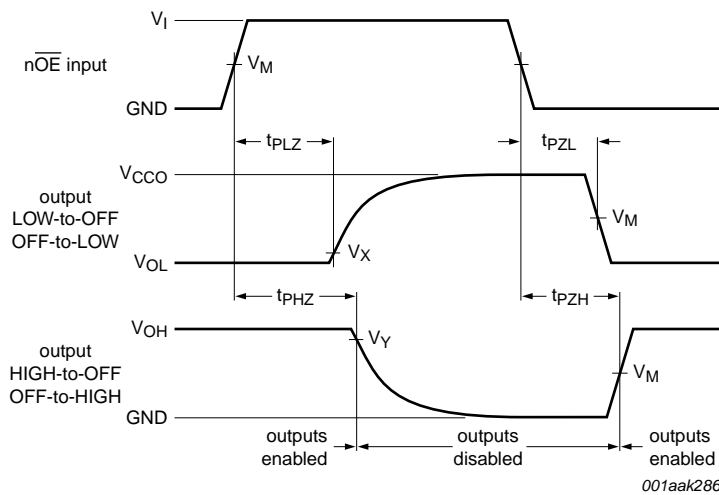
Measurement points are given in Table 14.

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

Fig 5.   Enable and disable times

Table 14.   Measurement points

Supply voltage	Input[1]	Output[2]		
$V_{CC(A)}$, $V_{CC(B)}$	V_M	V_M	V_X	V_Y
0.8 V to 1.6 V	$0.5V_{CCI}$	$0.5V_{CCO}$	$V_{OL} + 0.1$ V	$V_{OH} - 0.1$ V
1.65 V to 2.7 V	$0.5V_{CCI}$	$0.5V_{CCO}$	$V_{OL} + 0.15$ V	$V_{OH} - 0.15$ V
3.0 V to 3.6 V	$0.5V_{CCI}$	$0.5V_{CCO}$	$V_{OL} + 0.3$ V	$V_{OH} - 0.3$ V

[1] V_{CCI} is the supply voltage associated with the data input port.

[2] V_{CCO} is the supply voltage associated with the output port.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

14 of 24

Test data is given in Table 15.

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

R_T = Termination resistance.

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

Fig 6. Test circuit for measuring switching times

Table 15. Test data

Supply voltage	Input		Load		V_{EXT}		
$V_{CC(A)}$, $V_{CC(B)}$	V_I[1]	$\Delta t / \Delta V$[2]	C_L	R_L	t_{PLH}, t_{PHL}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}[3]
0.8 V to 1.6 V	V_{CCI}	≤ 1.0 ns/V	15 pF	2 kΩ	open	GND	$2V_{CCO}$
1.65 V to 2.7 V	V_{CCI}	≤ 1.0 ns/V	15 pF	2 kΩ	open	GND	$2V_{CCO}$
3.0 V to 3.6 V	V_{CCI}	≤ 1.0 ns/V	15 pF	2 kΩ	open	GND	$2V_{CCO}$

[1] V_{CCI} is the supply voltage associated with the data input port.

[2] dV/dt ≥ 1.0 V/ns

[3] V_{CCO} is the supply voltage associated with the output port.

74AVC32T245

Product data sheet

Rev. 1 — 16 January 2013

15 of 24

12. Typical propagation delay characteristics
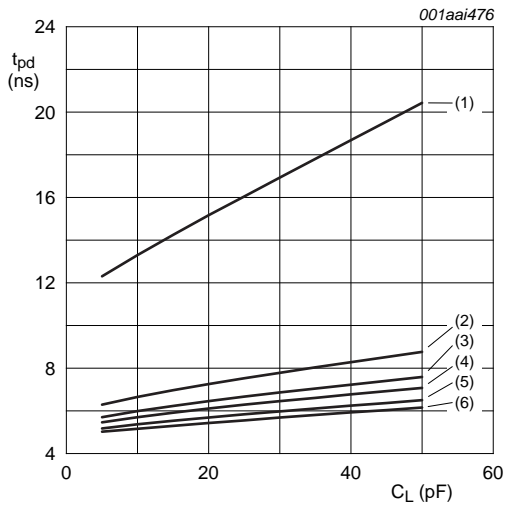
a. Propagation delay (nAn to nBn); $V_{CC(A)}$ = 0.8 V

(1) $V_{CC(B)}$ = 0.8 V.
(2) $V_{CC(B)}$ = 1.2 V.
(3) $V_{CC(B)}$ = 1.5 V.
(4) $V_{CC(B)}$ = 1.8 V.
(5) $V_{CC(B)}$ = 2.5 V.
(6) $V_{CC(B)}$ = 3.3 V.
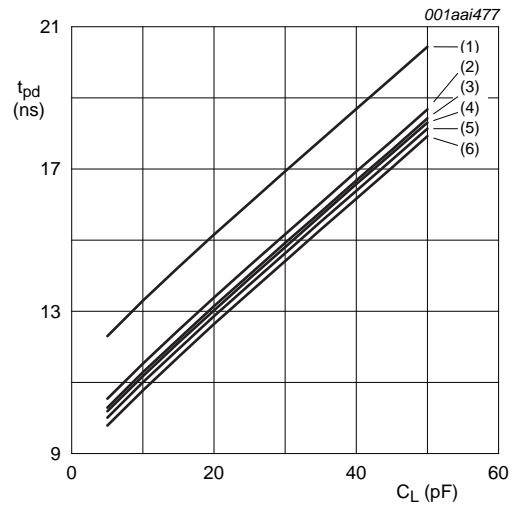
b. Propagation delay (nAn to nBn); $V_{CC(B)}$ = 0.8 V

(1) $V_{CC(A)}$ = 0.8 V.
(2) $V_{CC(A)}$ = 1.2 V.
(3) $V_{CC(A)}$ = 1.5 V.
(4) $V_{CC(A)}$ = 1.8 V.
(5) $V_{CC(A)}$ = 2.5 V.
(6) $V_{CC(A)}$ = 3.3 V.

Fig 7.   Typical propagation delay versus load capacitance; T_{amb} = 25 °C

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

16 of 24
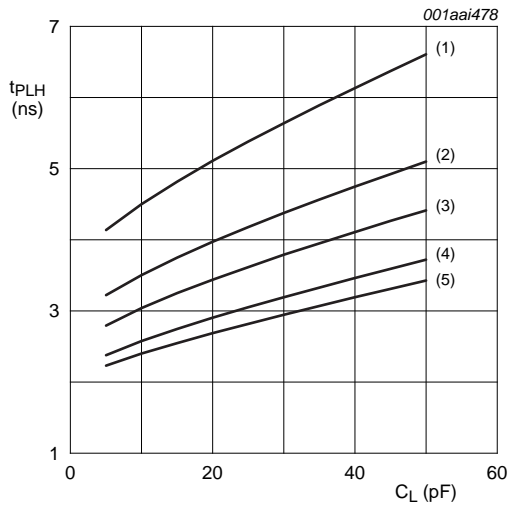
a. LOW to HIGH propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.2 V
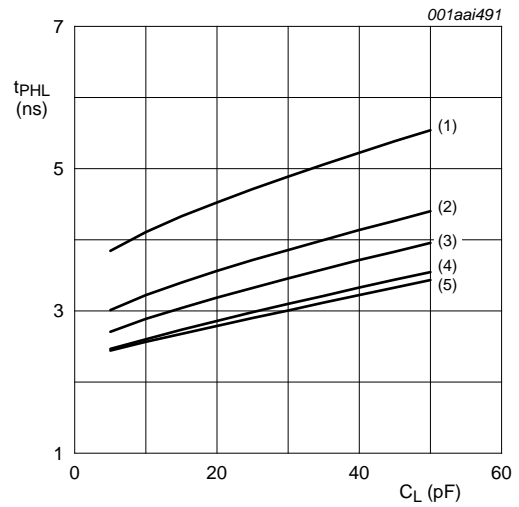
b. HIGH to LOW propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.2 V
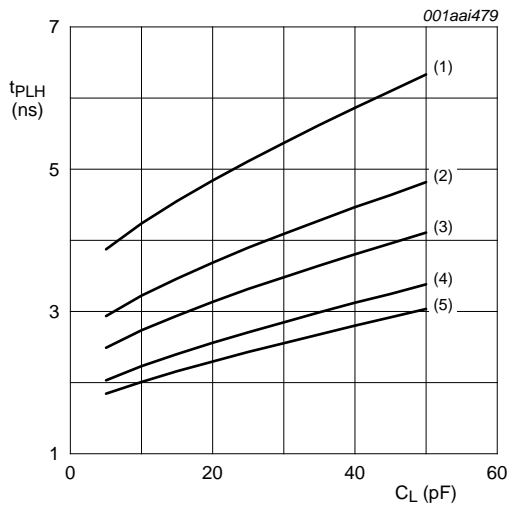
c. LOW to HIGH propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.5 V
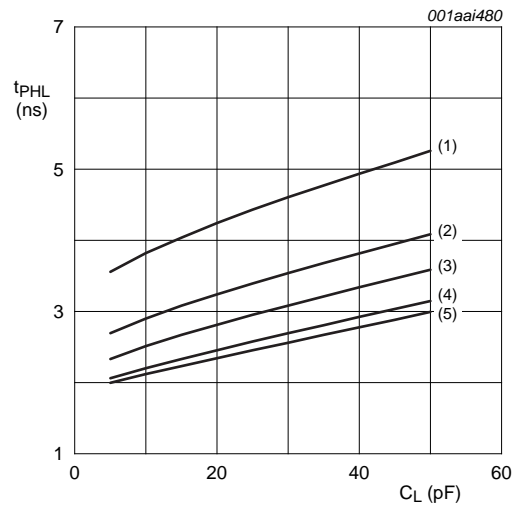
d. HIGH to LOW propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.5 V

(1) $V_{CC(B)}$ = 1.2 V.

(2) $V_{CC(B)}$ = 1.5 V.

(3) $V_{CC(B)}$ = 1.8 V.
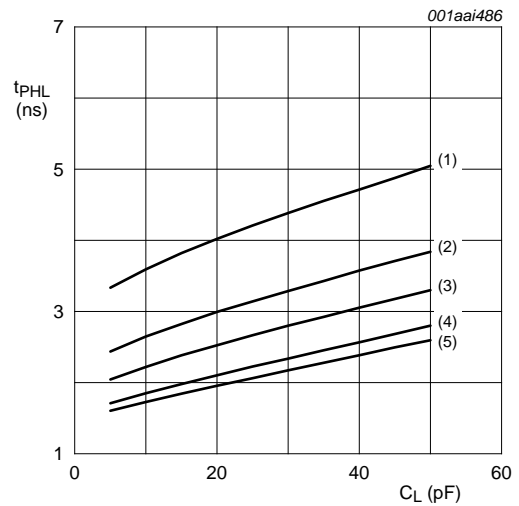
(4) $V_{CC(B)}$ = 2.5 V.

(5) $V_{CC(B)}$ = 3.3 V.

Fig 8. Typical propagation delay versus load capacitance; T_{amb} = 25 °C
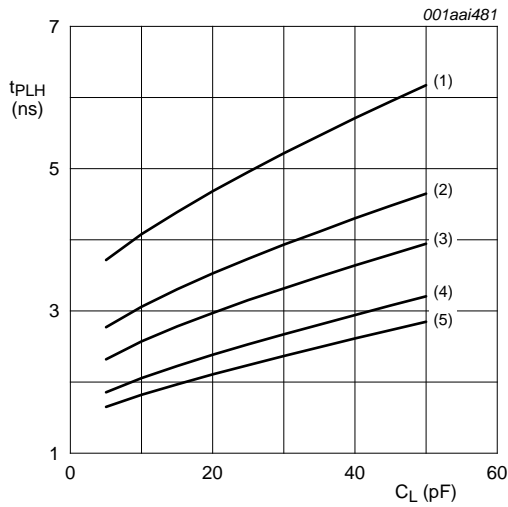
a. LOW to HIGH propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.8 V
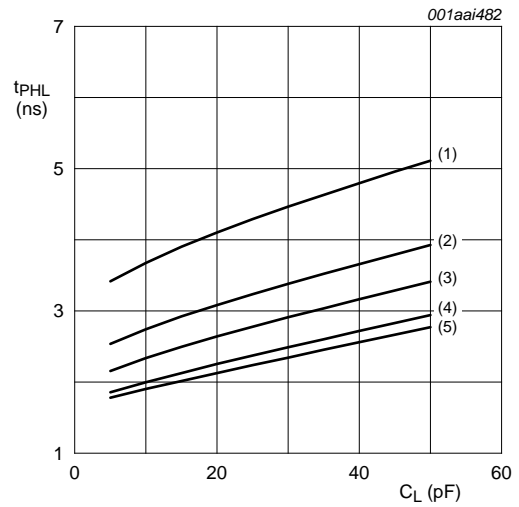
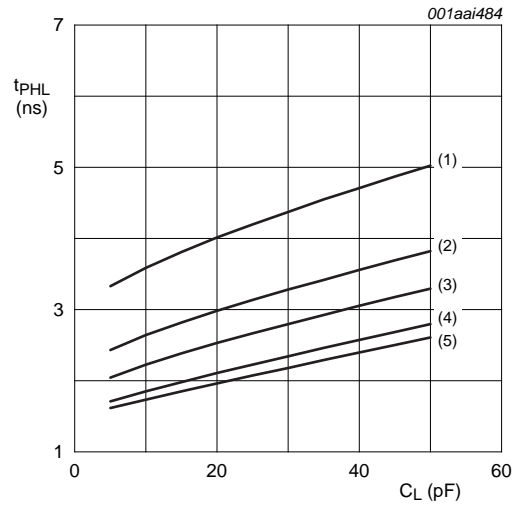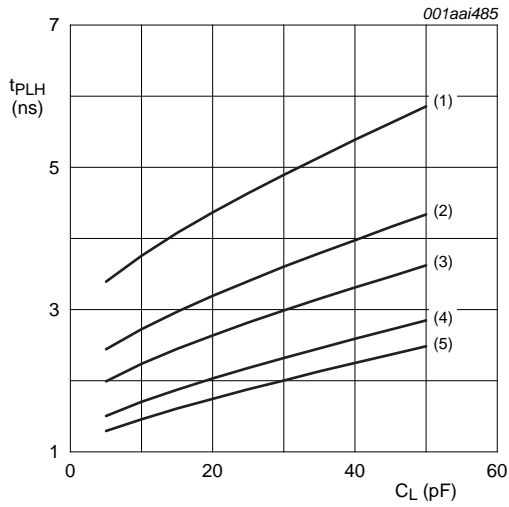b. HIGH to LOW propagation delay (nAn to nBn); $V_{CC(A)}$ = 1.8 V
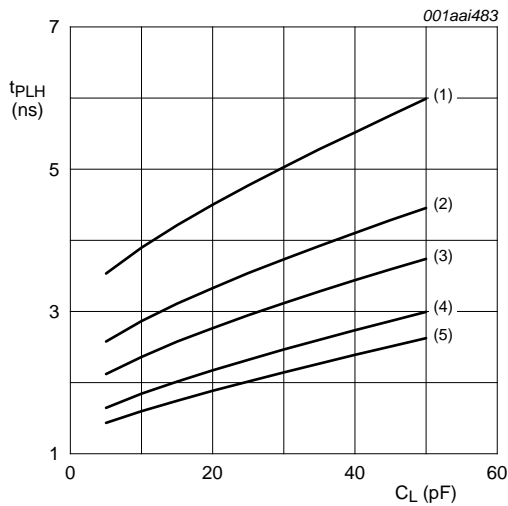
c. LOW to HIGH propagation delay (nAn to nBn); $V_{CC(A)}$ = 2.5 V

d. HIGH to LOW propagation delay (nAn to nBn); $V_{CC(A)}$ = 2.5 V

(1) $V_{CC(B)}$ = 1.2 V.

(2) $V_{CC(B)}$ = 1.5 V.

(3) $V_{CC(B)}$ = 1.8 V.

(4) $V_{CC(B)}$ = 2.5 V.

(5) $V_{CC(B)}$ = 3.3 V.

Fig 9. Typical propagation delay versus load capacitance; T_{amb} = 25 °C

a. LOW to HIGH propagation delay (nAn to nBn); $V_{CC(A)} = 3.3$ V

b. HIGH to LOW propagation delay (nAn to nBn); $V_{CC(A)} = 3.3$ V

(1) $V_{CC(B)} = 1.2$ V.

(2) $V_{CC(B)} = 1.5$ V.

(3) $V_{CC(B)} = 1.8$ V.

(4) $V_{CC(B)} = 2.5$ V.

(5) $V_{CC(B)} = 3.3$ V.

Fig 10. Typical propagation delay versus load capacitance; T_{amb} = 25 °C

13. Package outline

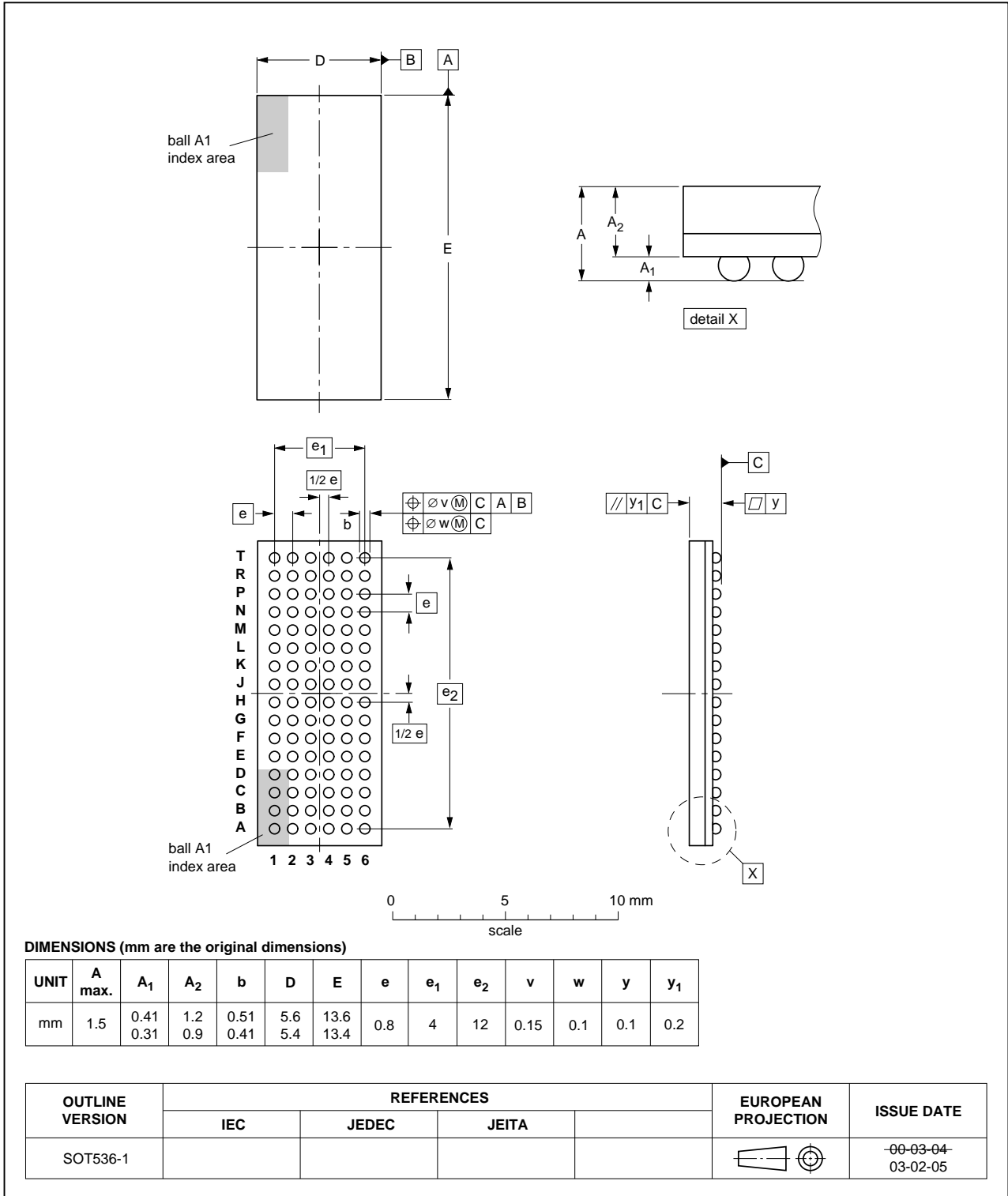**LFBGA96: plastic low profile fine-pitch ball grid array package; 96 balls; body 13.5 x 5.5 x 1.05 mm   SOT536-1**

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A_1	A_2	b	D	E	e	e_1	e_2	v	w	y	y_1
mm	1.5	0.41 0.31	1.2 0.9	0.51 0.41	5.6 5.4	13.6 13.4	0.8	4	12	0.15	0.1	0.1	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT536-1						~~00-03-04~~ 03-02-05

Fig 11.   Package outline SOT536-1 (LFBGA96)

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

20 of 24

14. Abbreviations

Table 16.   Abbreviations

Acronym	Description
CDM	Charged Device Model
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model
MM	Machine Model

15. Revision history

Table 17.   Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AVC32T245 v.1	20130116	Product data sheet	-	-

74AVC32T245

All information provided in this document is subject to legal disclaimers.

Product data sheet

Rev. 1 — 16 January 2013

21 of 24

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.nexperia.com.

16.2 Definitions

Draft — The document is a draft version only. The content is still under internal review and subject to formal approval, which may result in modifications or additions. Nexperia does not give any representations or warranties as to the accuracy or completeness of information included herein and shall have no liability for the consequences of use of such information.

Short data sheet — A short data sheet is an extract from a full data sheet with the same product type number(s) and title. A short data sheet is intended for quick reference only and should not be relied upon to contain detailed and full information. For detailed and full information see the relevant full data sheet, which is available on request via the local Nexperia sales office. In case of any inconsistency or conflict with the short data sheet, the full data sheet shall prevail.

Product specification — The information and data provided in a Product data sheet shall define the specification of the product as agreed between Nexperia and its customer, unless Nexperia and customer have explicitly agreed otherwise in writing. In no event however, shall an agreement be valid in which the Nexperia product is deemed to offer functions and qualities beyond those described in the Product data sheet.

16.3 Disclaimers

Limited warranty and liability — Information in this document is believed to be accurate and reliable. However, Nexperia does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. Nexperia takes no responsibility for the content in this document if provided by an information source outside of Nexperia.

In no event shall Nexperia be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Notwithstanding any damages that customer might incur for any reason whatsoever, Nexperia's aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the *Terms and conditions of commercial sale* of Nexperia.

Right to make changes — Nexperia reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — Nexperia products are not designed, authorized or warranted to be suitable for use in life support, life-critical or safety-critical systems or equipment, nor in applications where failure or malfunction of a Nexperia product can reasonably be expected to result in personal injury, death or severe property or environmental damage. Nexperia and its suppliers accept no liability for inclusion and/or use of Nexperia products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. Nexperia makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Customers are responsible for the design and operation of their applications and products using Nexperia products, and Nexperia accepts no liability for any assistance with applications or customer product design. It is customer's sole responsibility to determine whether the Nexperia product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products.

Nexperia does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using Nexperia products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). Nexperia does not accept any liability in this respect.

Limiting values — Stress above one or more limiting values (as defined in the Absolute Maximum Ratings System of IEC 60134) will cause permanent damage to the device. Limiting values are stress ratings only and (proper) operation of the device at these or any other conditions above those given in the Recommended operating conditions section (if present) or the Characteristics sections of this document is not warranted. Constant or repeated exposure to limiting values will permanently and irreversibly affect the quality and reliability of the device.

Terms and conditions of commercial sale — Nexperia products are sold subject to the general terms and conditions of commercial sale, as published at http://www.nexperia.com/profile/terms, unless otherwise agreed in a valid written individual agreement. In case an individual agreement is concluded only the terms and conditions of the respective agreement shall apply. Nexperia hereby expressly objects to applying the customer's general terms and conditions with regard to the purchase of Nexperia products by customer.

No offer to sell or license — Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights.

74AVC32T245

All information provided in this document is subject to legal disclaimers.

© Nexperia B.V. 2017. All rights reserved

Product data sheet

Rev. 1 — 16 January 2013

22 of 24

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

Non-automotive qualified products — Unless this data sheet expressly states that this specific Nexperia product is automotive qualified, the product is not suitable for automotive use. It is neither qualified nor tested in accordance with automotive testing or application requirements. Nexperia accepts no liability for inclusion and/or use of non-automotive qualified products in automotive equipment or applications.

In the event that customer uses the product for design-in and use in automotive applications to automotive specifications and standards, customer (a) shall use the product without Nexperia's warranty of the product for such automotive applications, use and specifications, and (b) whenever customer uses the product for automotive applications beyond

Nexperia's specifications such use shall be solely at customer's own risk, and (c) customer fully indemnifies Nexperia for any liability, damages or failed product claims resulting from customer design and use of the product for automotive applications beyond Nexperia's standard warranty and Nexperia's product specifications.

Translations — A non-English (translated) version of a document is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

16.4   Trademarks

Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

17. Contact information

For more information, please visit: **http://www.nexperia.com**

For sales office addresses, please send an email to: **salesaddresses@nexperia.com**

74AVC32T245

All information provided in this document is subject to legal disclaimers.

Product data sheet

Rev. 1 — 16 January 2013

23 of 24

18. Contents