74AVCH4T245-Q100

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

Rev. 3 — 12 March 2020   **Product data sheet**

1. General description

The 74AVCH4T245-Q100 is a 4-bit, dual supply transceiver that enables bidirectional level translation. The device can be used as two 2-bit transceivers or as a 4-bit transceiver. It features two 2-bit input-output ports (nAn and nBn), a direction control input (nDIR), an output enable input (n$\overline{\text{OE}}$) and dual supply pins ($V_{CC(A)}$ and $V_{CC(B)}$). Both $V_{CC(A)}$ and $V_{CC(B)}$ can be supplied with any voltage between 0.8 V and 3.6 V. This feature makes the device suitable for translating between any of the low voltage nodes (0.8 V, 1.2 V, 1.5 V, 1.8 V, 2.5 V and 3.3 V). Pins nAn, n$\overline{\text{OE}}$ and nDIR are referenced to $V_{CC(A)}$ and pins nBn are referenced to $V_{CC(B)}$. A HIGH on nDIR allows transmission from nAn to nBn and a LOW on nDIR allows transmission from nBn to nAn. The output enable input (n$\overline{\text{OE}}$) can be used to disable the outputs so the buses are effectively isolated.

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 outputs are in the high-impedance OFF-state. The bus hold circuitry on the powered-up side always stays active.

The 74AVCH4T245-Q100 has active bus hold circuitry which is provided to hold unused or floating data inputs at a valid logic level. This feature eliminates the need for external pull-up or pull-down resistors.

This product has been qualified to the Automotive Electronics Council (AEC) standard Q100 (Grade 1) and is suitable for use in automotive applications.

2. Features and benefits

- Automotive product qualification in accordance with AEC-Q100 (Grade 1)
    - Specified from -40 °C to +85 °C and from -40 °C to +125 °C
- 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:
    - MIL-STD-883, method 3015 Class 3B exceeds 8000 V
    - HBM JESD22-A114E Class 3B exceeds 8000 V
    - MM JESD22-A115-A exceeds 200 V (C = 200 pf, R = 0 Ω)
- Maximum data rates:
    - 380 Mbit/s (≥ 1.8 V to 3.3 V translation)
    - 200 Mbit/s (≥ 1.1 V to 3.3 V translation)
    - 200 Mbit/s (≥ 1.1 V to 2.5 V translation)
    - 200 Mbit/s (≥ 1.1 V to 1.8 V translation)
    - 150 Mbit/s (≥ 1.1 V to 1.5 V translation)
    - 100 Mbit/s (≥ 1.1 V to 1.2 V translation)

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

- Suspend mode
- Bus hold on data inputs
- 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
- DHVQFN package with Side-Wettable Flanks enabling Automatic Optical Inspection (AOI) of solder joints

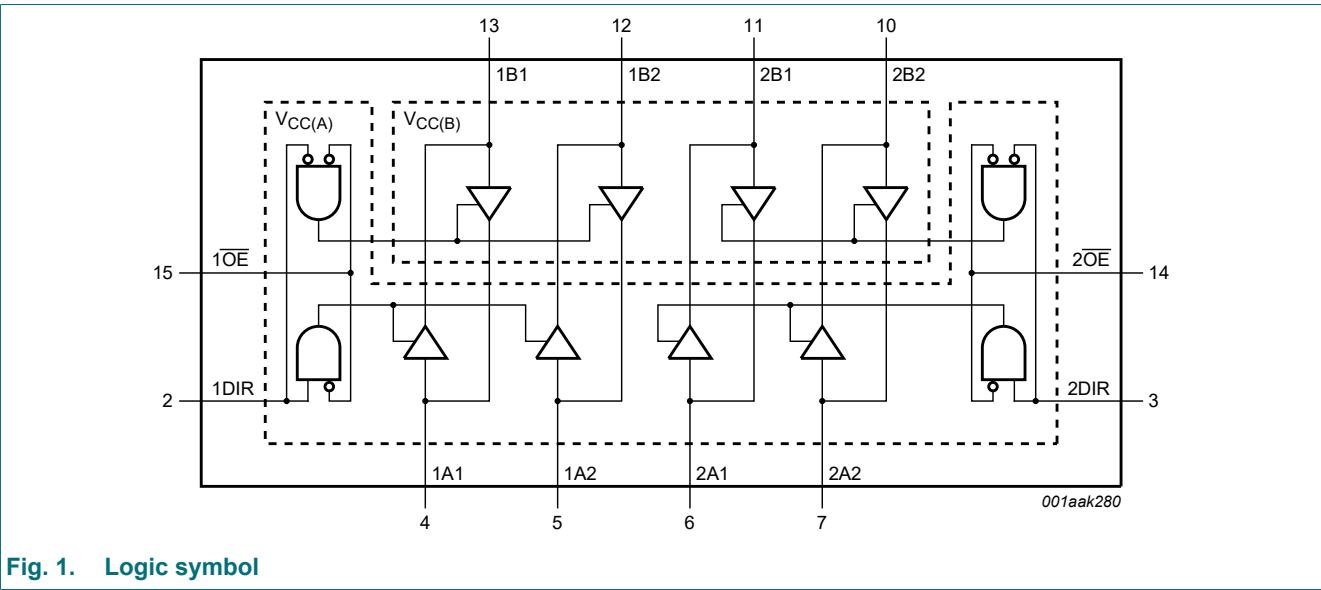## 3. Ordering information

Table 1. Ordering information

Type number	Package			
	Temperature range	Name	Description	Version
74AVCH4T245D-Q100	-40 °C to +125 °C	SO16	plastic small outline package; 16 leads; body width 3.9 mm	SOT109-1
74AVCH4T245PW-Q100	-40 °C to +125 °C	TSSOP16	plastic thin shrink small outline package; 16 leads; body width 4.4 mm	SOT403-1
74AVCH4T245BQ-Q100	-40 °C to +125 °C	DHVQFN16	plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads; 16 terminals; body 2.5 × 3.5 × 0.85 mm	SOT763-1

4. Marking

Table 2. Marking codes

Type number	Marking code
74AVCH4T245D-Q100	74AVCH4T245D
74AVCH4T245PW-Q100	CH4T245
74AVCH4T245BQ-Q100	H4T245

5. Functional diagram

Fig. 1. Logic symbol

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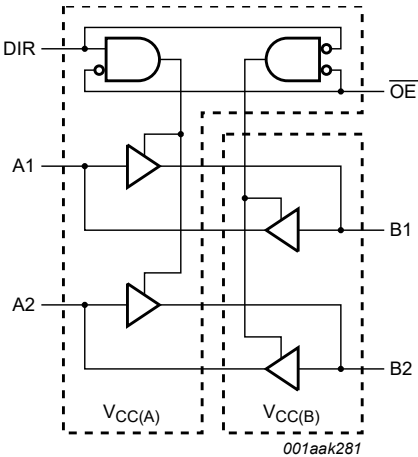

Fig. 2.   Logic diagram (one 2-bit transceiver)

6. Pinning information

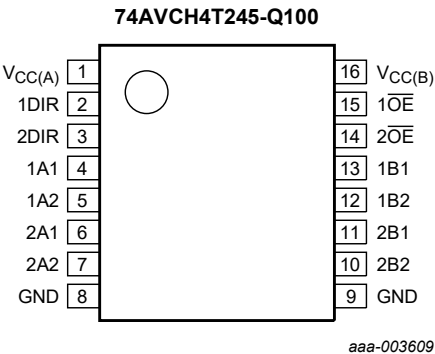## 6.1. Pinning
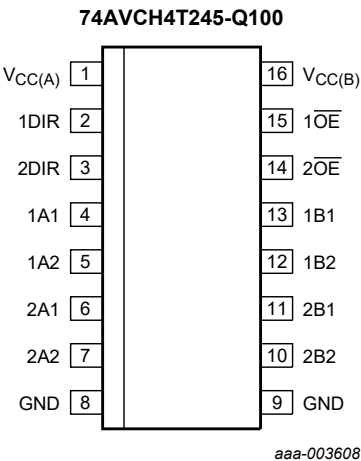
Fig. 3.   Pin configuration SOT109-1 (SO16)

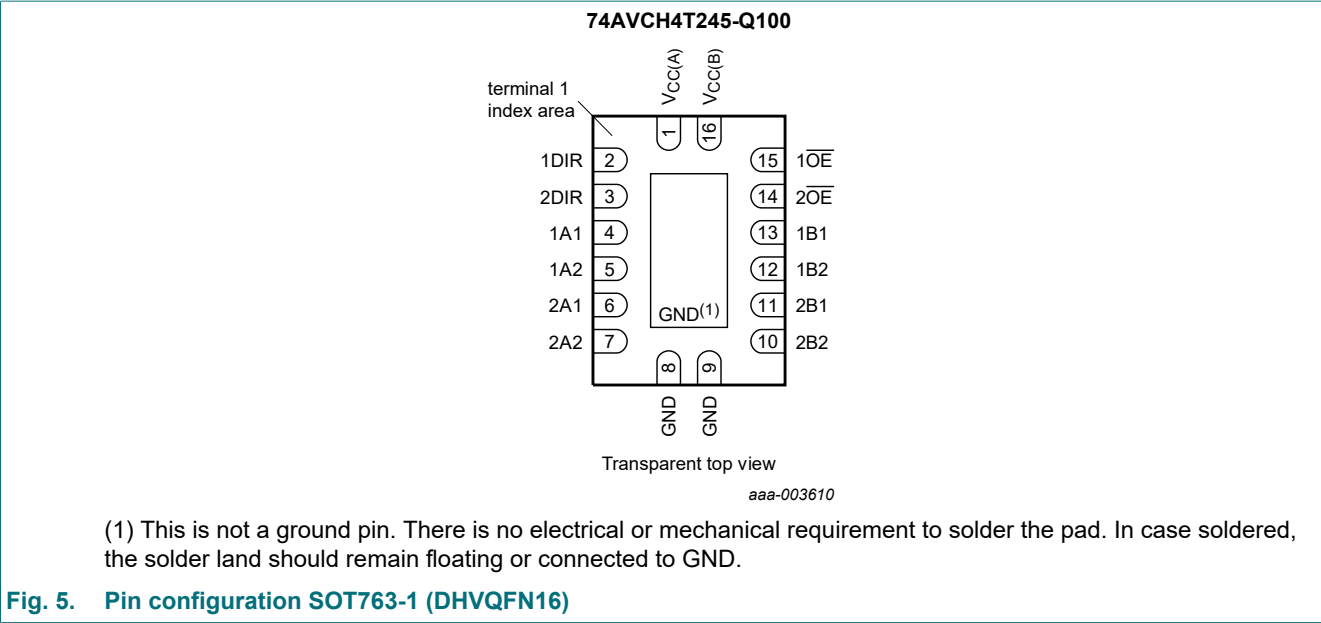**Fig. 4.   Pin configuration SOT403-1 (TSSOP16)**

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

74AVCH4T245-Q100

terminal 1
index area

1DIR ② ⑮ 1$\overline{\text{OE}}$
2DIR ③ ⑭ 2$\overline{\text{OE}}$
1A1 ④ ⑬ 1B1
1A2 ⑤ ⑫ 1B2
2A1 ⑥ GND(1) ⑪ 2B1
2A2 ⑦ ⑩ 2B2

① $V_{CC(A)}$ ⑯ $V_{CC(B)}$
⑧ GND ⑨ GND

Transparent top view

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(1) This is not a ground pin. There is no electrical or mechanical requirement to solder the pad. In case soldered, the solder land should remain floating or connected to GND.

Fig. 5. **Pin configuration SOT763-1 (DHVQFN16)**

6.2. Pin description

Table 3. Pin description

Symbol	Pin	Description
$V_{CC(A)}$	1	supply voltage A (nAn, n$\overline{\text{OE}}$ and nDIR inputs arereferenced to $V_{CC(A)}$)
1DIR, 2DIR	2, 3	direction control
1A1, 1A2	4, 5	data input or output
2A1, 2A2	6, 7	data input or output
GND [1]	8, 9	ground (0 V)
2B2, 2B1	10, 11	data input or output
1B2, 1B1	12, 13	data input or output
2$\overline{\text{OE}}$, 1$\overline{\text{OE}}$	14, 15	output enable input (active LOW)
$V_{CC(B)}$	16	supply voltage B (nBn inputs are referenced to $V_{CC(B)}$)

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

7. Functional description

Table 4. Function table

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

Supply voltage	Input		Input/output [1]	
$V_{CC(A)}$, $V_{CC(B)}$	n$\overline{\text{OE}}$ [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 [1]	X	X	Z	Z

[1] If at least one of $V_{CC(A)}$ or $V_{CC(B)}$ is at GND level, the device goes into suspend mode.
[2] The nAn, nDIR and n$\overline{\text{OE}}$ input circuit is referenced to $V_{CC(A)}$; The nBn input circuit is referenced to $V_{CC(B)}$.

8. Limiting values

Table 5. 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	[4]	-	500	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] For SOT109-1 (SO16) package: P_{tot} derates linearly with 12.4 mW/K above 110 °C.
For SOT403-1 (TSSOP16) package: P_{tot} derates linearly with 8.5 mW/K above 91 °C.
For SOT763-1 (DHVQFN16) package: P_{tot} derates linearly with 11.2 mW/K above 106 °C.

9. Recommended operating conditions

Table 6. 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
Δt/ΔV	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.

10. Static characteristics

Table 7. Typical static characteristics at T_{amb} = 25 °C

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

V_{CCO} is the supply voltage associated with the output port; V_{CCI} is the supply voltage associated with the data input port.

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, $n\overline{OE}$ 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_{BHL}	bus hold LOW current	A or B port; V_I = 0.42 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.2 V	[1]	-	26	-	µA
I_{BHH}	bus hold HIGH current	A or B port; V_I = 0.78 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.2 V	[2]	-	-24	-	µA
I_{BHLO}	bus hold LOW overdrive current	A or B port; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.2 V	[3]	-	27	-	µA
I_{BHHO}	bus hold HIGH overdrive current	A or B port; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.2 V	[4]	-	-26	-	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	[5]	-	±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	[5]	-	±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	[5]	-	±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, $n\overline{OE}$ input; V_I = 0 V or 3.3 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 3.3 V		-	1.0	-	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		-	4.0	-	pF

[1]   The bus hold circuit can sink at least the minimum low sustaining current at V_{IL} max. I_{BHL} should be measured after lowering V_I to GND and then raising it to V_{IL} max.

[2]   The bus hold circuit can source at least the minimum high sustaining current at V_{IH} min. I_{BHH} should be measured after raising V_I to V_{CC} and then lowering it to V_{IH} min.

[3]   An external driver must source at least I_{BHLO} to switch this node from LOW to HIGH.

[4]   An external driver must sink at least I_{BHHO} to switch this node from HIGH to LOW.

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

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

Table 8. Static characteristics

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

V_{CCO} is the supply voltage associated with the output port; V_{CCI} is the supply voltage associated with the data input port.

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, n$\overline{OE}$ 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, n$\overline{OE}$ 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 µA; $V_{CC(A)} = V_{CC(B)}$ = 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
V_{OL}	LOW-level output voltage	$V_I = V_{IH}$ or V_{IL}					
		I_O = 100 µA; $V_{CC(A)} = V_{CC(B)}$ = 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, n$\overline{OE}$ 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

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

Symbol	Parameter	Conditions		-40 °C to +85 °C		-40 °C to +125 °C		Unit
				Min	Max	Min	Max	
I_{BHL}	bus hold LOW current	A or B port	[1]					
		V_I = 0.49 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.4 V		15	-	15	-	µA
		V_I = 0.58 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.65 V		25	-	25	-	µA
		V_I = 0.70 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 2.3 V		45	-	45	-	µA
		V_I = 0.80 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 3.0 V		100	-	90	-	µA
I_{BHH}	bus hold HIGH current	A or B port	[2]					
		V_I = 0.91 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.4 V		-15	-	-15	-	µA
		V_I = 1.07 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 1.65 V		-25	-	-25	-	µA
		V_I = 1.60 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 2.3 V		-45	-	-45	-	µA
		V_I = 2.00 V; $V_{CC(A)}$ = $V_{CC(B)}$ = 3.0 V		-100	-	-100	-	µA
I_{BHLO}	bus hold LOW overdrive current	A or B port	[3]					
		$V_{CC(A)}$ = $V_{CC(B)}$ = 1.6 V		125	-	125	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 1.95 V		200	-	200	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 2.7 V		300	-	300	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 3.6 V		500	-	500	-	µA
I_{BHHO}	bus hold HIGH overdrive current	A or B port	[4]					
		$V_{CC(A)}$ = $V_{CC(B)}$ = 1.6 V		-125	-	-125	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 1.95 V		-200	-	-200	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 2.7 V		-300	-	-300	-	µA
		$V_{CC(A)}$ = $V_{CC(B)}$ = 3.6 V		-500	-	-500	-	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	[5]	-	±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	[5]	-	±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	[5]	-	±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

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

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	-	10	-	55	µA
		$V_{CC(A)}$ = 1.1 V to 3.6 V; $V_{CC(B)}$ = 1.1 V to 3.6 V	-	8	-	50	µA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(B)}$ = 0 V	-	8	-	50	µA
		$V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 3.6 V	-2	-	-12	-	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	-	10	-	55	µA
		$V_{CC(A)}$ = 1.1 V to 3.6 V; $V_{CC(B)}$ = 1.1 V to 3.6 V	-	8	-	50	µA
		$V_{CC(A)}$ = 3.6 V; $V_{CC(B)}$ = 0 V	-2	-	-12	-	µA
		$V_{CC(A)}$ = 0 V; $V_{CC(B)}$ = 3.6 V	-	8	-	50	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	-	20	-	70	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	-	16	-	65	µA

[1] The bus hold circuit can sink at least the minimum low sustaining current at V_{IL} max. I_{BHL} should be measured after lowering V_I to GND and then raising it to V_{IL} max.

[2] The bus hold circuit can source at least the minimum high sustaining current at V_{IH} min. I_{BHH} should be measured after raising V_I to V_{CC} and then lowering it to V_{IH} min.

[3] An external driver must source at least I_{BHLO} to switch this node from LOW to HIGH.

[4] An external driver must sink at least I_{BHHO} to switch this node from HIGH to LOW.

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

Table 9. 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	0.1	0.1	0.1	0.1	0.1	0.1	µA
0.8 V	0.1	0.1	0.1	0.1	0.1	0.3	1.6	µA
1.2 V	0.1	0.1	0.1	0.1	0.1	0.1	0.8	µA
1.5 V	0.1	0.1	0.1	0.1	0.1	0.1	0.4	µA
1.8 V	0.1	0.1	0.1	0.1	0.1	0.1	0.2	µA
2.5 V	0.1	0.3	0.1	0.1	0.1	0.1	0.1	µA
3.3 V	0.1	1.6	0.8	0.4	0.2	0.1	0.1	µA

11. Dynamic characteristics

Table 10. 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	9.5	9.7	9.8	9.9	10.7	11.9	pF
		A port: (direction nBn to nAn); output disabled	0.6	0.6	0.6	0.6	0.7	0.7	pF
		B port: (direction nAn to nBn); output enabled	9.5	9.7	9.8	9.9	10.7	11.9	pF
		B port: (direction nAn to nBn); output disabled	0.6	0.6	0.6	0.6	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; $R_L = \infty$ Ω.

74AVCH4T245_Q100

Product data sheet

Rev. 3 — 12 March 2020

10 / 25

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

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

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 8; for wave forms see Fig. 6 and Fig. 7.

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}.

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	14.5	7.3	6.5	6.2	5.9	6.0	ns
		nBn to nAn	14.5	12.7	12.4	12.3	12.1	12.0	ns
t_{dis}	disable time	nOE to nAn	14.3	14.3	14.3	14.3	14.3	14.3	ns
		nOE to nBn	17.0	9.9	9.0	9.4	9.0	9.7	ns
t_{en}	enable time	nOE to nAn	18.2	18.2	18.2	18.2	18.2	18.2	ns
		nOE to nBn	19.2	10.7	9.8	9.6	9.7	10.2	ns

Table 12. Typical dynamic characteristics at $V_{CC(B)}$ = 0.8 V and T_{amb} = 25 °C

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 8; for wave forms see Fig. 6 and Fig. 7

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}.

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	14.5	12.7	12.4	12.3	12.1	12.0	ns
		nBn to nAn	14.5	7.3	6.5	6.2	5.9	6.0	ns
t_{dis}	disable time	nOE to nAn	14.3	5.5	4.1	4.0	3.0	3.5	ns
		nOE to nBn	17.0	13.8	13.4	13.1	12.9	12.7	ns
t_{en}	enable time	nOE to nAn	18.2	5.6	4.0	3.2	2.4	2.2	ns
		nOE to nBn	19.2	14.6	14.1	13.9	13.7	13.6	ns

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

Table 13. Dynamic characteristics for temperature range -40 °C to +85 °C

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 8*; for wave forms see* Fig. 6 *and* Fig. 7*.*

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}.

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	9.4	0.5	7.1	0.5	6.2	0.5	5.2	0.5	5.1	ns
		nBn to nAn	0.5	9.4	0.5	8.9	0.5	8.7	0.5	8.4	0.5	8.2	ns
t_{dis}	disable time	n$\overline{OE}$ to nAn	1.8	10.9	1.8	10.9	1.8	10.9	1.8	10.9	1.8	10.9	ns
		n$\overline{OE}$ to nBn	1.9	12.4	1.9	9.6	1.9	9.5	1.4	8.1	1.2	9.1	ns
t_{en}	enable time	n$\overline{OE}$ to nAn	1.4	12.8	1.4	12.8	1.4	12.8	1.4	12.8	1.4	12.8	ns
		n$\overline{OE}$ to nBn	1.1	13.3	1.1	10.0	1.1	8.9	1.0	7.9	1.0	7.7	ns
$V_{CC(A)}$ = 1.4 V to 1.6 V													
t_{pd}	propagation delay	nAn to nBn	0.3	8.9	0.3	6.3	0.3	5.2	0.3	4.2	0.3	4.2	ns
		nBn to nAn	0.7	7.1	0.7	6.3	0.5	6.0	0.4	5.7	0.3	5.6	ns
t_{dis}	disable time	n$\overline{OE}$ to nAn	1.8	10.2	1.8	10.2	1.5	10.2	1.3	10.2	1.6	10.2	ns
		n$\overline{OE}$ to nBn	1.9	11.3	1.9	10.3	1.9	9.1	1.4	7.4	1.2	7.6	ns
t_{en}	enable time	n$\overline{OE}$ to nAn	1.1	9.4	1.4	9.4	1.1	9.4	0.7	9.4	0.4	9.4	ns
		n$\overline{OE}$ to nBn	1.4	12.1	1.4	9.6	1.1	7.7	0.9	5.8	0.9	5.6	ns
$V_{CC(A)}$ = 1.65 V to 1.95 V													
t_{pd}	propagation delay	nAn to nBn	0.1	8.7	0.1	6.0	0.1	4.9	0.1	3.9	0.3	3.9	ns
		nBn to nAn	0.6	6.2	0.6	5.3	0.5	4.9	0.3	4.6	0.3	4.5	ns
t_{dis}	disable time	n$\overline{OE}$ to nAn	1.8	8.6	1.6	8.6	1.8	8.6	1.3	8.6	1.6	8.6	ns
		n$\overline{OE}$ to nBn	1.7	10.9	1.7	9.9	1.6	8.7	1.2	6.9	1.0	6.9	ns
t_{en}	enable time	n$\overline{OE}$ to nAn	1.0	7.2	1.0	7.2	1.0	7.2	0.6	7.2	0.4	7.2	ns
		n$\overline{OE}$ to nBn	1.2	11.7	1.2	9.2	1.0	7.4	0.8	5.3	0.8	4.6	ns
$V_{CC(A)}$ = 2.3 V to 2.7 V													
t_{pd}	propagation delay	nAn to nBn	0.1	8.4	0.1	5.7	0.1	4.6	0.2	3.5	0.1	3.6	ns
		nBn to nAn	0.6	5.2	0.6	4.2	0.4	3.9	0.2	3.4	0.2	3.3	ns
t_{dis}	disable time	n$\overline{OE}$ to nAn	1.0	6.2	1.0	6.2	1.0	6.2	1.0	6.2	1.0	6.2	ns
		n$\overline{OE}$ to nBn	1.5	10.4	1.5	8.8	1.3	8.2	1.1	6.2	0.9	5.2	ns
t_{en}	enable time	n$\overline{OE}$ to nAn	0.7	4.8	0.7	4.8	0.7	4.8	0.6	4.8	0.4	4.8	ns
		n$\overline{OE}$ to nBn	0.9	11.3	0.9	8.8	0.8	7.0	0.6	4.8	0.6	4.0	ns
$V_{CC(A)}$ = 3.0 V to 3.6 V													
t_{pd}	propagation delay	nAn to nBn	0.1	8.2	0.1	5.6	0.1	4.5	0.1	3.3	0.1	2.9	ns
		nBn to nAn	0.6	5.1	0.6	4.2	0.4	3.4	0.2	3.0	0.1	2.8	ns
t_{dis}	disable time	n$\overline{OE}$ to nAn	0.7	5.6	0.7	5.6	0.7	5.6	0.7	5.6	0.7	5.6	ns
		n$\overline{OE}$ to nBn	1.4	10.2	1.4	9.3	1.2	8.1	1.0	6.4	0.8	6.2	ns
t_{en}	enable time	n$\overline{OE}$ to nAn	0.6	3.8	0.6	3.8	0.6	3.8	0.6	3.8	0.4	3.8	ns
		n$\overline{OE}$ to nBn	0.8	11.3	0.8	8.7	0.6	6.8	0.5	4.7	0.5	3.8	ns

4-bit dual supply translating transceiver with configurable voltage translation; 3-state
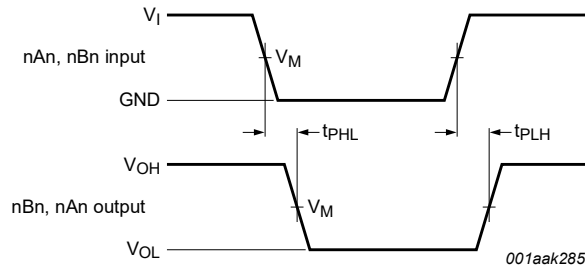
Table 14. Dynamic characteristics for temperature range -40 °C to +125 °C

Voltages are referenced to GND (ground = 0 V); for test circuit see Fig. 8; for wave forms see Fig. 6 and Fig. 7

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}.

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	10.4	0.5	7.9	0.5	6.9	0.5	5.8	0.5	5.7	ns
		nBn to nAn	0.5	10.4	0.5	9.8	0.5	9.6	0.5	9.3	0.5	9.1	ns
t_{dis}	disable time	nOE to nAn	1.8	12.0	1.8	12.0	1.8	12.0	1.8	12.0	1.8	12.0	ns
		nOE to nBn	1.9	13.7	1.9	10.6	1.9	10.5	1.4	9.0	1.2	10.1	ns
t_{en}	enable time	nOE to nAn	1.4	14.1	1.4	14.1	1.4	14.1	1.4	14.1	1.4	14.1	ns
		nOE to nBn	1.1	14.7	1.1	11.0	1.1	9.8	1.0	8.7	1.0	8.5	ns
$V_{CC(A)}$ = 1.4 V to 1.6 V													
t_{pd}	propagation delay	nAn to nBn	0.3	9.8	0.3	7.0	0.3	5.8	0.3	4.7	0.3	4.7	ns
		nBn to nAn	0.7	7.9	0.7	7.0	0.5	6.6	0.4	6.3	0.3	6.2	ns
t_{dis}	disable time	nOE to nAn	1.8	11.3	1.8	11.3	1.5	11.3	1.3	11.3	1.6	11.3	ns
		nOE to nBn	1.9	12.5	1.9	11.4	1.9	10.1	1.4	8.2	1.2	8.4	ns
t_{en}	enable time	nOE to nAn	1.1	10.4	1.4	10.4	1.1	10.4	0.7	10.4	0.4	10.4	ns
		nOE to nBn	1.4	13.3	1.4	10.6	1.1	8.5	0.9	6.4	0.9	6.2	ns
$V_{CC(A)}$ = 1.65 V to 1.95 V													
t_{pd}	propagation delay	nAn to nBn	0.1	9.6	0.1	6.6	0.1	5.4	0.1	4.3	0.3	4.3	ns
		nBn to nAn	0.6	6.9	0.6	5.9	0.5	5.4	0.3	5.1	0.3	5.0	ns
t_{dis}	disable time	nOE to nAn	1.8	9.5	1.6	9.5	1.8	9.5	1.3	9.5	1.6	9.5	ns
		nOE to nBn	1.7	12.0	1.7	10.9	1.6	9.6	1.2	7.6	1.0	7.6	ns
t_{en}	enable time	nOE to nAn	1.0	8.0	1.0	8.0	1.0	8.0	0.6	8.0	0.4	8.0	ns
		nOE to nBn	1.2	12.9	1.2	10.2	1.0	8.2	0.8	5.9	0.8	5.1	ns
$V_{CC(A)}$ = 2.3 V to 2.7 V													
t_{pd}	propagation delay	nAn to nBn	0.1	9.3	0.1	6.3	0.1	5.1	0.2	4.0	0.1	4.0	ns
		nBn to nAn	0.6	5.8	0.6	4.7	0.4	4.3	0.2	3.9	0.2	3.8	ns
t_{dis}	disable time	nOE to nAn	1.0	6.9	1.0	6.9	1.0	6.9	1.0	6.9	1.0	6.9	ns
		nOE to nBn	1.5	11.5	1.5	10.4	1.3	9.1	1.1	6.9	0.9	5.8	ns
t_{en}	enable time	nOE to nAn	0.7	5.3	0.7	5.3	0.7	5.3	0.6	5.3	0.4	5.3	ns
		nOE to nBn	0.9	12.4	0.9	9.7	0.8	7.7	0.6	5.3	0.6	4.4	ns
$V_{CC(A)}$ = 3.0 V to 3.6 V													
t_{pd}	propagation delay	nAn to nBn	0.1	9.1	0.1	6.2	0.1	5.0	0.1	3.8	0.1	3.3	ns
		nBn to nAn	0.6	5.7	0.6	4.7	0.4	3.9	0.2	3.4	0.1	3.3	ns
t_{dis}	disable time	nOE to nAn	0.7	6.2	0.7	6.2	0.7	6.2	0.7	6.2	0.7	6.2	ns
		nOE to nBn	1.4	11.3	1.4	10.3	1.2	9.0	1.0	7.1	0.8	6.9	ns
t_{en}	enable time	nOE to nAn	0.6	4.2	0.6	4.2	0.6	4.2	0.6	4.2	0.4	4.2	ns
		nOE to nBn	0.8	12.4	0.8	9.6	0.6	7.5	0.5	5.2	0.5	4.2	ns

74AVCH4T245_Q100

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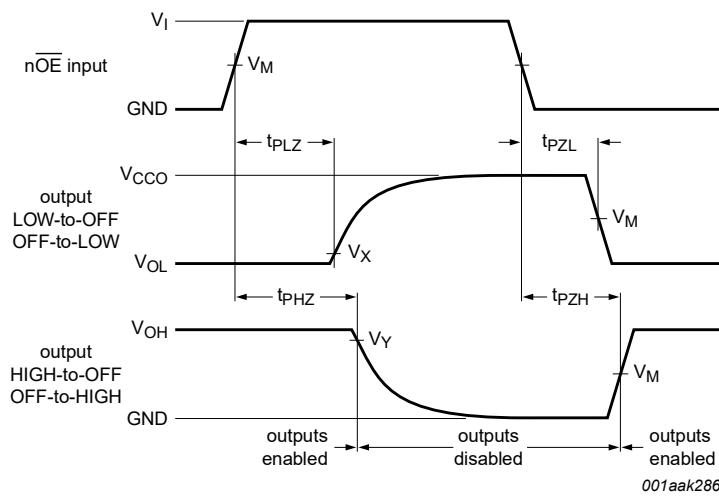**Product data sheet** **Rev. 3 — 12 March 2020** **13 / 25**

11.1. Waveforms

Measurement points are given in Table 15.

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

Fig. 6.   The data input (nAn, nBn) to output (nBn, nAn) propagation delay times

Measurement points are given in Table 15.

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

Fig. 7.   Enable and disable times

Table 15. 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.
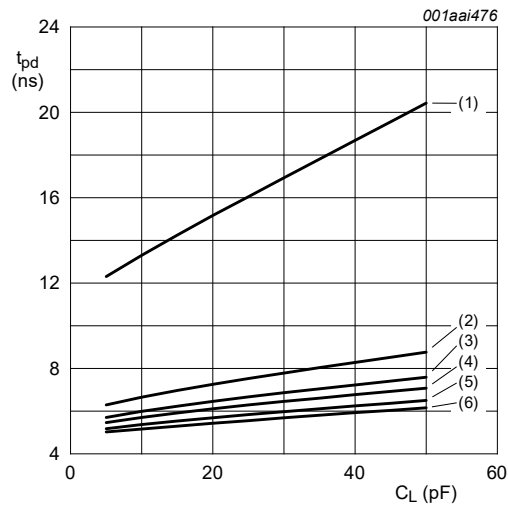[2] V_{CCO} is the supply voltage associated with the output port.

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

Test data is given in Table 16.

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. 8.   Test circuit for measuring switching times
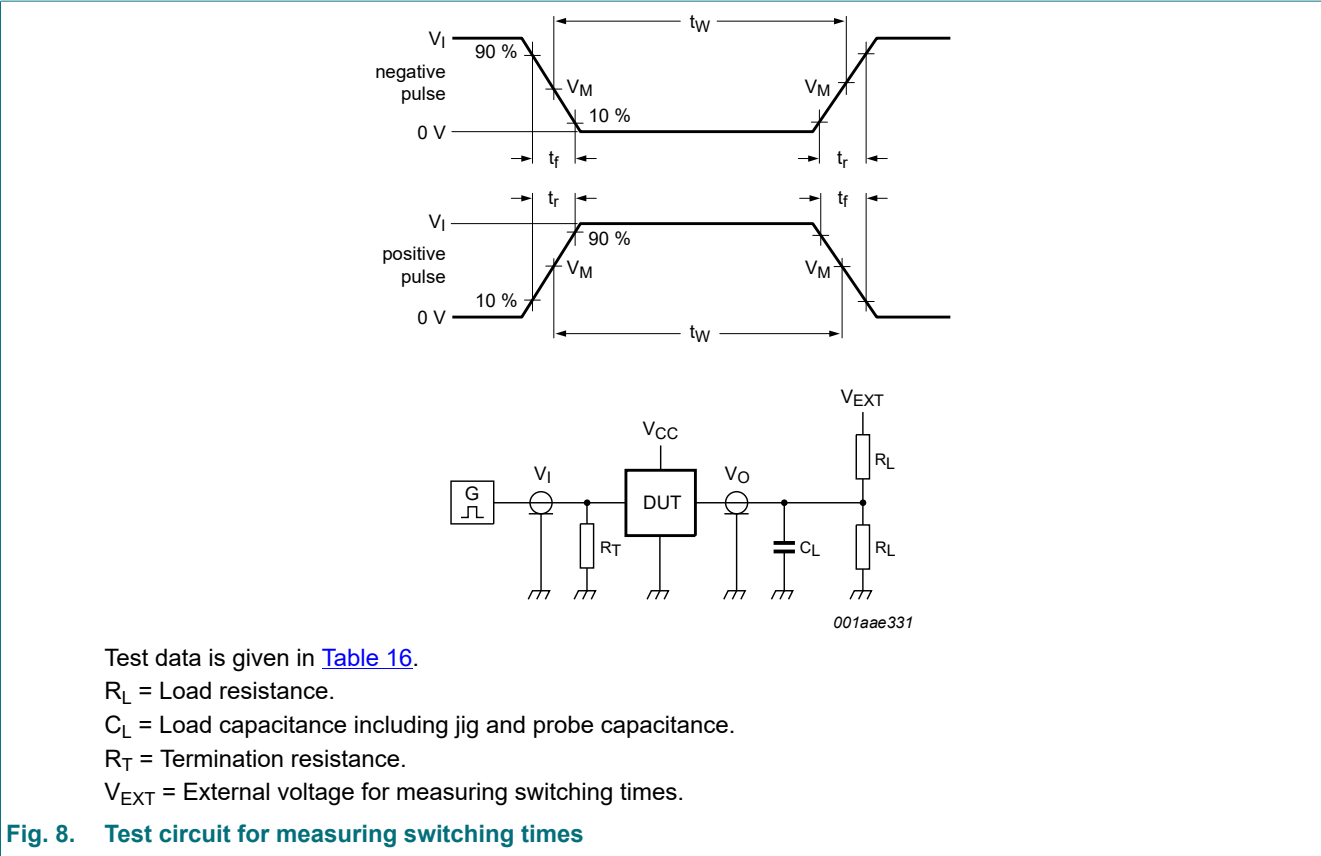
Table 16. Test data

Supply voltage	Input		Load		V_{EXT}		
$V_{CC(A)}$, $V_{CC(B)}$	V_I [1]	Δt/ΔV [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.

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

11.2. 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.
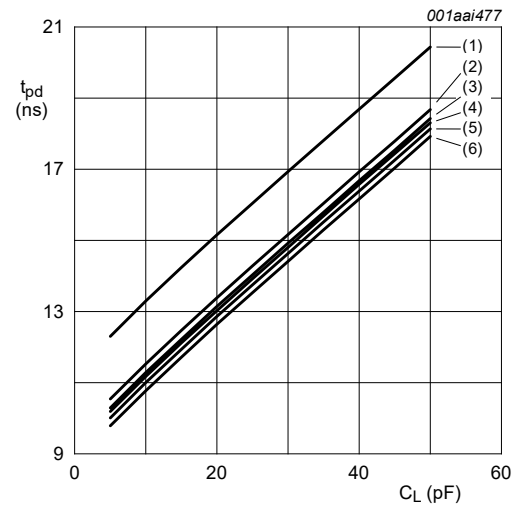
b. Propagation delay (nAn to nBn); $V_{CC(B)}$ = 0.8 V
   (1) $V_{CC(A)}$ = 0.8 V.
   (2) $V_{CC(A)}$ = 1.2 V.
   (3) $V_{CC(A)}$ = 1.5 V.
   (4) $V_{CC(A)}$ = 1.8 V.
   (5) $V_{CC(A)}$ = 2.5 V.
   (6) $V_{CC(A)}$ = 3.3 V.

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

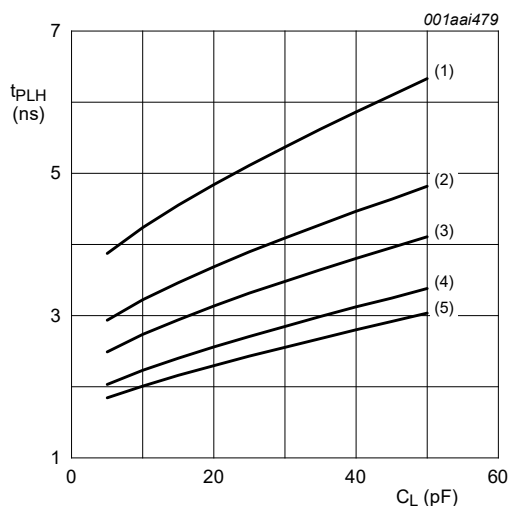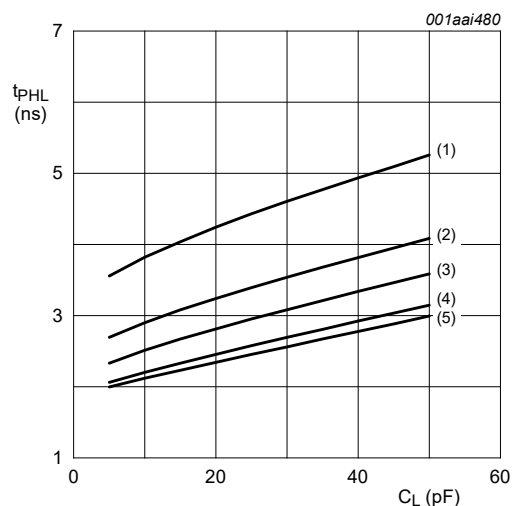**4-bit dual supply translating transceiver with configurable voltage translation; 3-state**
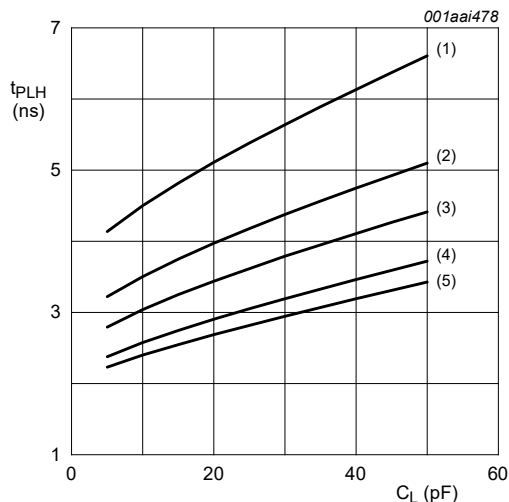
a. LOW to HIGH propagation delay (nAn to nBn);
$V_{CC(A)}$ = 1.2 V

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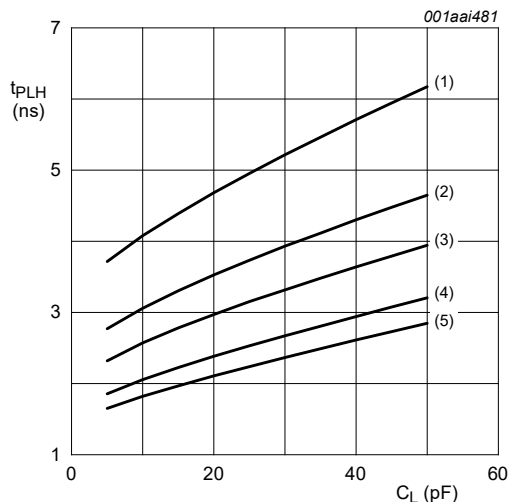
c. LOW to HIGH propagation delay (nAn to nBn);
$V_{CC(A)}$ = 1.5 V

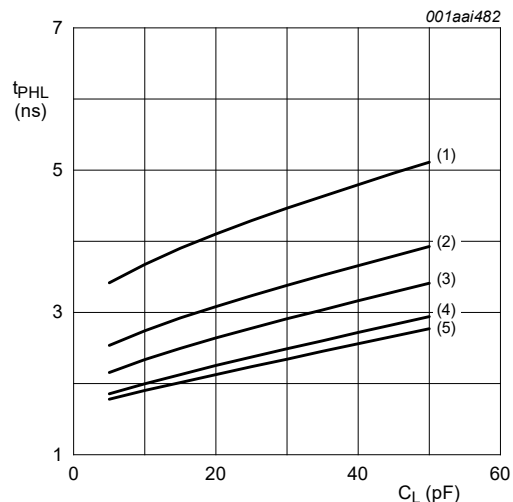d. HIGH to LOW propagation delay (nAn to nBn);
$V_{CC(A)}$ = 1.5 V

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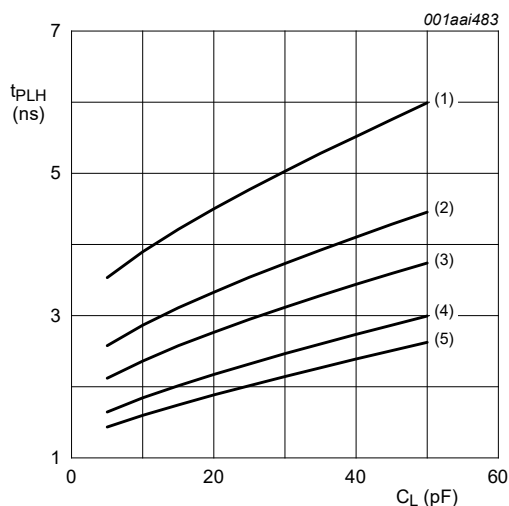(3) $V_{CC(B)}$ = 1.8 V.
(4) $V_{CC(B)}$ = 2.5 V.
(5) $V_{CC(B)}$ = 3.3 V.

Fig. 10. **Typical propagation delay versus load capacitance; T_{amb} = 25 °C**
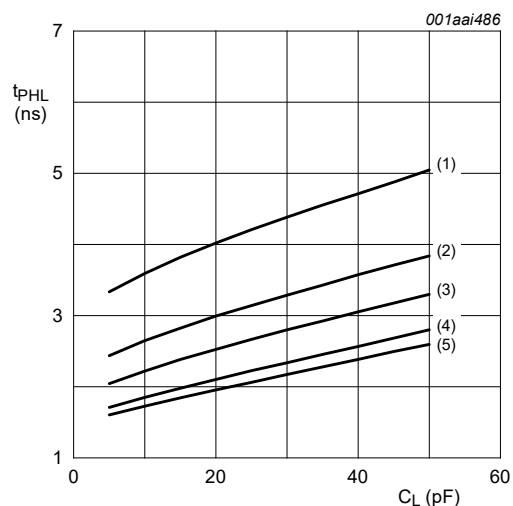
a. LOW to HIGH propagation delay (nAn to nBn);
$V_{CC(A)}$ = 1.8 V

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

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

001aai485

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

001aai484

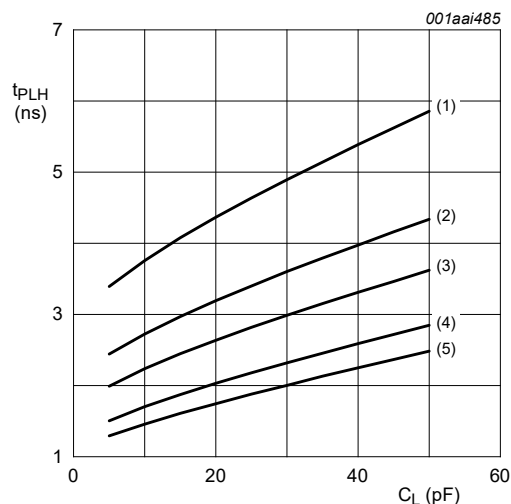b. HIGH to LOW propagation delay (nAn to nBn);
$V_{CC(A)}$ = 3.3 V
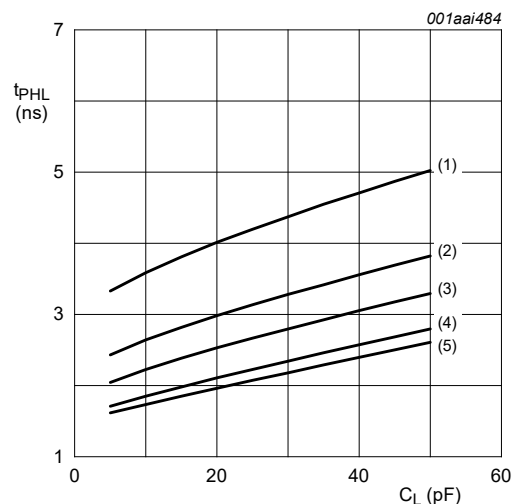
    (1) $V_{CC(B)}$ = 1.2 V.
    (2) $V_{CC(B)}$ = 1.5 V.
    (3) $V_{CC(B)}$ = 1.8 V.
    (4) $V_{CC(B)}$ = 2.5 V.
    (5) $V_{CC(B)}$ = 3.3 V.

Fig. 12. Typical propagation delay versus load capacitance; T_{amb} = 25 °C

12. Package outline

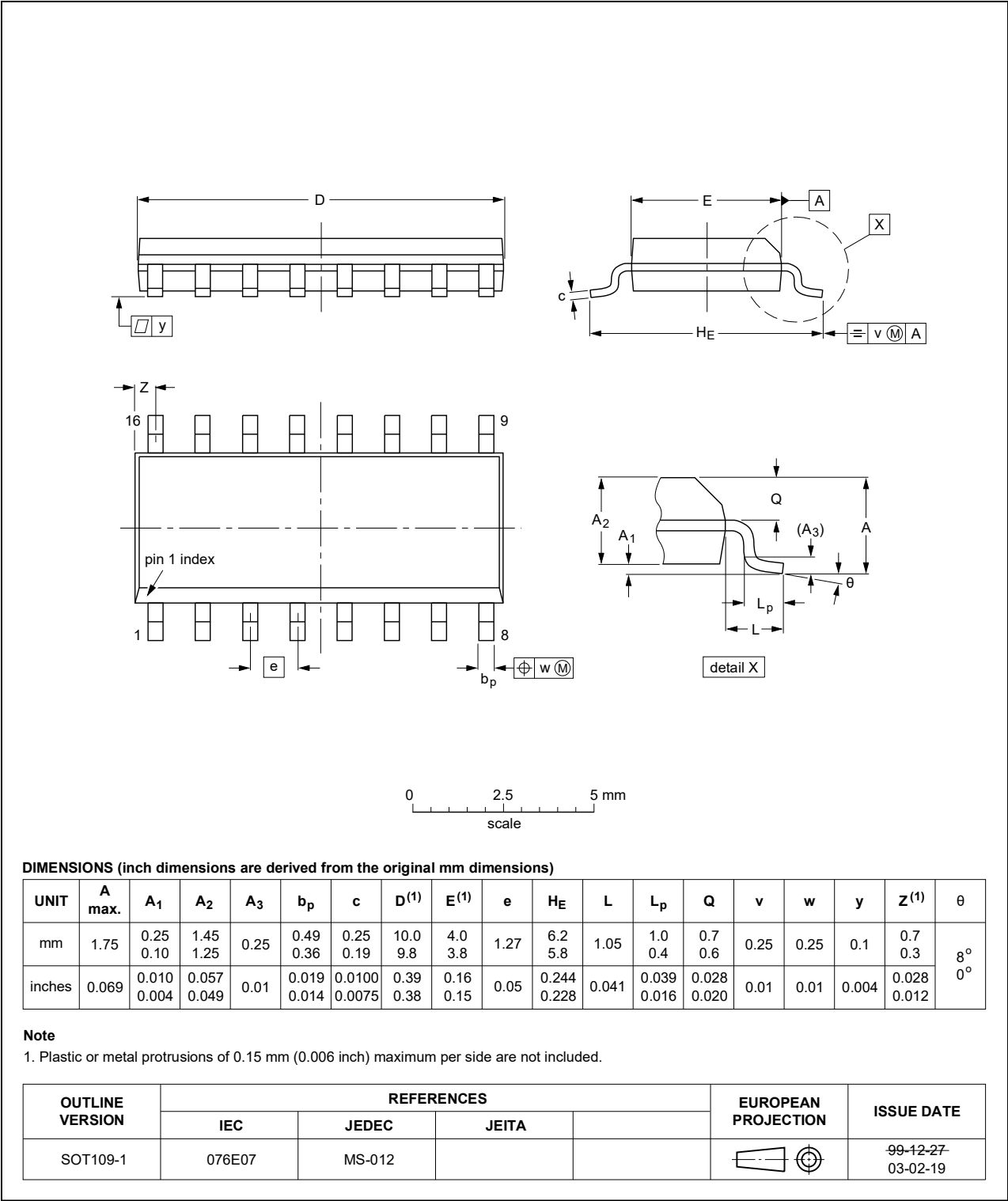**SO16: plastic small outline package; 16 leads; body width 3.9 mm**

SOT109-1

DIMENSIONS (inch dimensions are derived from the original mm dimensions)

UNIT	A max.	A₁	A₂	A₃	bₚ	c	D[1]	E[1]	e	Hₑ	L	Lₚ	Q	v	w	y	Z[1]	θ
mm	1.75	0.25 0.10	1.45 1.25	0.25	0.49 0.36	0.25 0.19	10.0 9.8	4.0 3.8	1.27	6.2 5.8	1.05	1.0 0.4	0.7 0.6	0.25	0.25	0.1	0.7 0.3	8° 0°
inches	0.069	0.010 0.004	0.057 0.049	0.01	0.019 0.014	0.0100 0.0075	0.39 0.38	0.16 0.15	0.05	0.244 0.228	0.041	0.039 0.016	0.028 0.020	0.01	0.01	0.004	0.028 0.012	

Note

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

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT109-1	076E07	MS-012				99-12-27 03-02-19

Fig. 13. Package outline SOT109-1 (SO16)

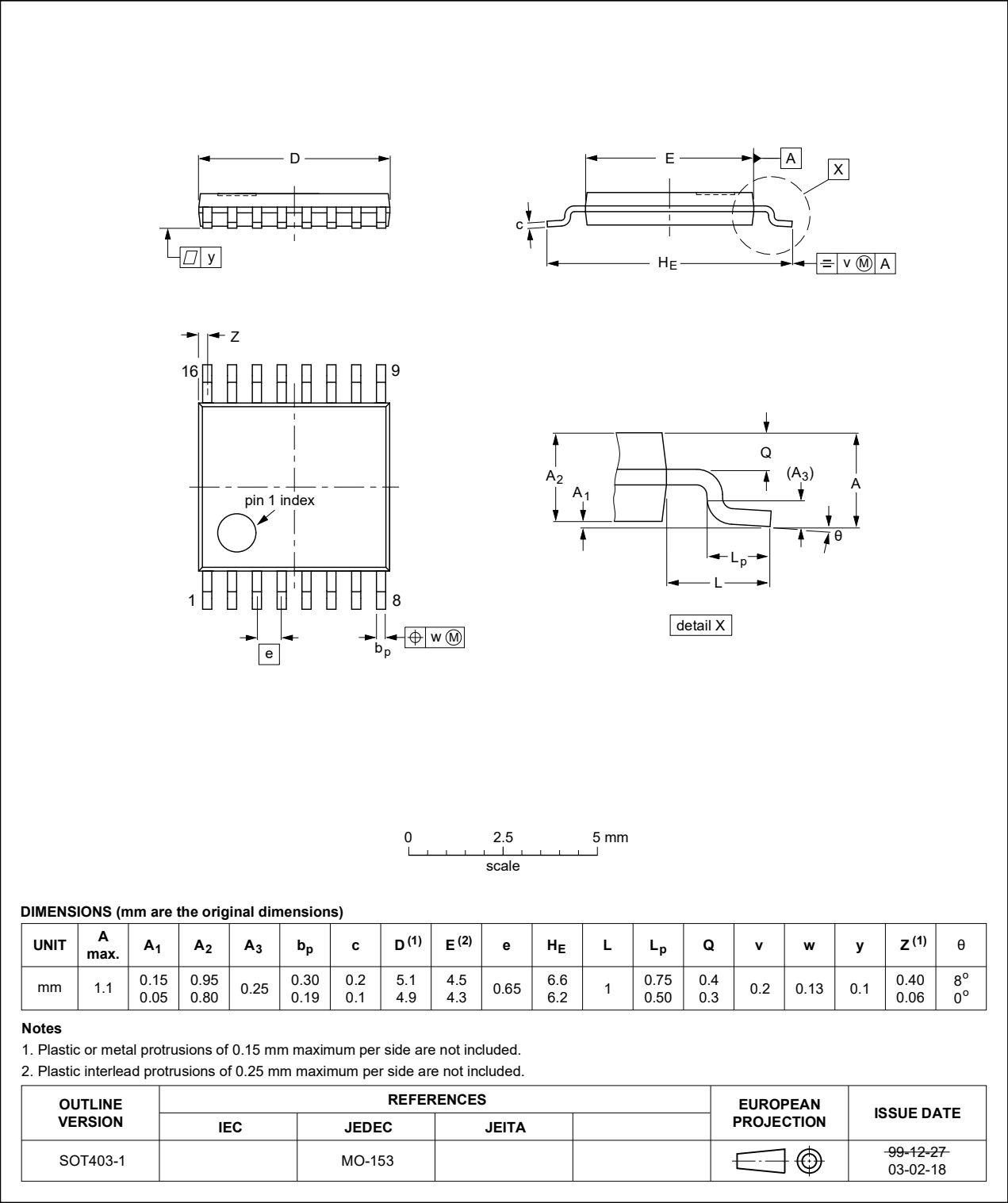**TSSOP16: plastic thin shrink small outline package; 16 leads; body width 4.4 mm** SOT403-1

DIMENSIONS (mm are the original dimensions)

UNIT	A max.	A₁	A₂	A₃	bₚ	c	D (1)	E (2)	e	H_E	L	Lₚ	Q	v	w	y	Z (1)	θ
mm	1.1	0.15 0.05	0.95 0.80	0.25	0.30 0.19	0.2 0.1	5.1 4.9	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	0.40 0.06	8° 0°

Note: the column headers with subscripts are: 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$^{(1)}$, θ

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			
SOT403-1		MO-153				99-12-27 03-02-18

Fig. 14. Package outline SOT403-1 (TSSOP16)

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

DHVQFN16: plastic dual in-line compatible thermal enhanced very thin quad flat package; no leads;
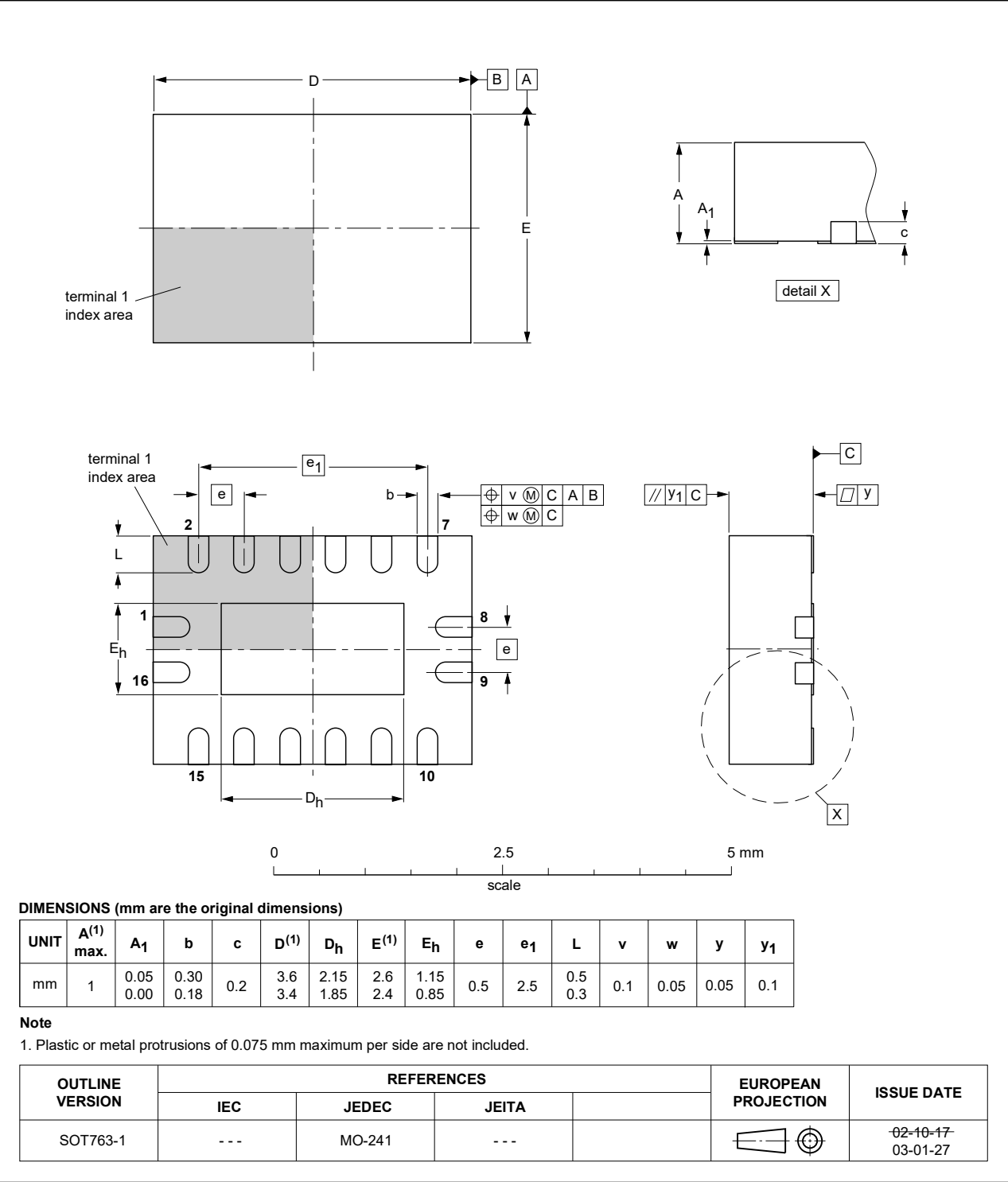16 terminals; body 2.5 x 3.5 x 0.85 mm　　　　　　　　　　　　　　　　　　　**SOT763-1**

DIMENSIONS (mm are the original dimensions)

UNIT	A$^{(1)}$ max.	A$_1$	b	c	D$^{(1)}$	D$_h$	E$^{(1)}$	E$_h$	e	e$_1$	L	v	w	y	y$_1$
mm	1	0.05 0.00	0.30 0.18	0.2	3.6 3.4	2.15 1.85	2.6 2.4	1.15 0.85	0.5	2.5	0.5 0.3	0.1	0.05	0.05	0.1

Note

1. Plastic or metal protrusions of 0.075 mm maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT763-1	- - -	MO-241	- - -			~~02-10-17~~ 03-01-27

Fig. 15. Package outline SOT763-1 (DHVQFN16)

13. Abbreviations

Table 17. Abbreviations

Acronym	Description
DUT	Device Under Test
ESD	ElectroStatic Discharge
HBM	Human Body Model
MIL	Military
MM	Machine Model

14. Revision history

Table 18. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
74AVCH4T245_Q100 v.3	20200312	Product data sheet	-	74AVCH4T245_Q100 v.2
Modifications:	• The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. • Legal texts have been adapted to the new company name where appropriate. • Section 2 updated. • Table 5: Derating values for P_{tot} total power dissipation updated.			
74AVCH4T245_Q100 v.2	20151217	Product data sheet	-	74AVCH4T245_Q100 v.1
Modifications:	• Table 5: conditions I_{CC} and I_{GND} changed (errata).			
74AVCH4T245_Q100 v.1	20130916	Product data sheet	-	-

15. Legal information

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 https://www.nexperia.com.

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74AVCH4T245_Q100

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Product data sheet

Rev. 3 — 12 March 2020

24 / 25

Contents

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