

74AVC4T774PW

4-bit dual supply translating transceiver; 3-state

Rev. 1 — 25 September 2017

Product data sheet

1 General description

The 74AVC4T774PW is a 4-bit, dual supply transceiver that enables bidirectional level translation. It features eight 1-bit input-output ports (A_n and B_n), four direction control inputs (DIR1, DIR2, DIR3 and DIR4), an output enable input (\overline{OE}) and dual supply pins ($V_{CC(A)}$ and $V_{CC(B)}$). Both $V_{CC(A)}$ and $V_{CC(B)}$ can be supplied at any voltage between 0.8 V and 1.95 V for translating between the 0.8 V, 1.2 V, 1.5 V and 1.8 V supply voltage nodes or 1.1 V to 3.6 V for translating between the 1.2 V, 1.5 V, 1.8 V, 2.5 V and 3.3 V supply voltage nodes. Pins A_n , \overline{OE} and DIRn are referenced to $V_{CC(A)}$ and pins B_n are referenced to $V_{CC(B)}$. A HIGH on DIRn allows transmission from A_n to B_n and a LOW on DIRn allows transmission from B_n to A_n . The output enable input (\overline{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 A_n and B_n are in the high-impedance OFF-state.

2 Features and benefits

- Wide supply voltage range:
 - $V_{CC(A)}$ and $V_{CC(B)}$: 0.8 V to 1.95 V or 1.1 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-A114E Class 3B exceeds 8000 V
 - CDM JESD22-C101C exceeds 1500 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)
 - 100 Mbit/s (\geq 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

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- Specified from -40 °C to +85 °C and -40 °C to +125 °C

3 Ordering information

Table 1. Ordering information

| Type number | Package | | | Version |
|--------------|-------------------|---------|--|----------|
| | Temperature range | Name | Description | |
| 74AVC4T774PW | -40 °C to +125 °C | TSSOP16 | plastic thin shrink small outline package; 16 leads; body width 4.4 mm | SOT403-1 |

4 Marking

Table 2. Marking codes

| Type number | Marking code |
|--------------|--------------|
| 74AVC4T774PW | VC4T774 |

5 Functional diagram

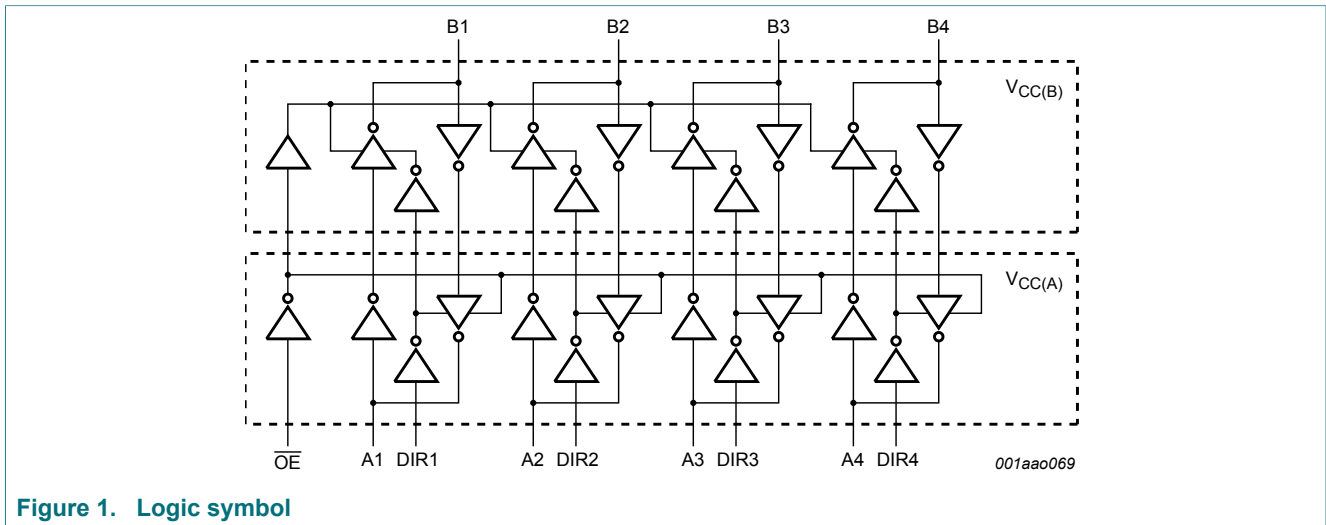


Figure 1. Logic symbol

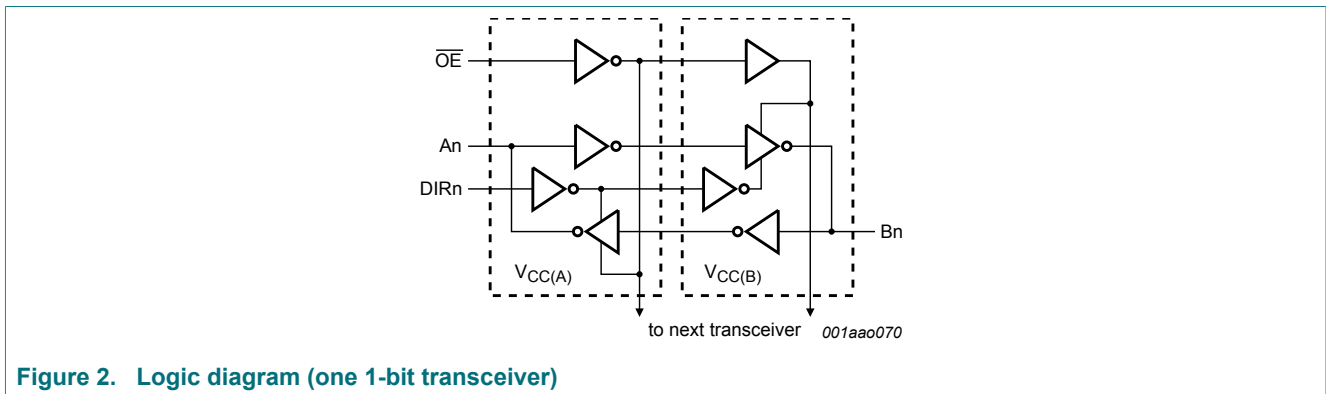


Figure 2. Logic diagram (one 1-bit transceiver)

6 Pinning information

6.1 Pinning

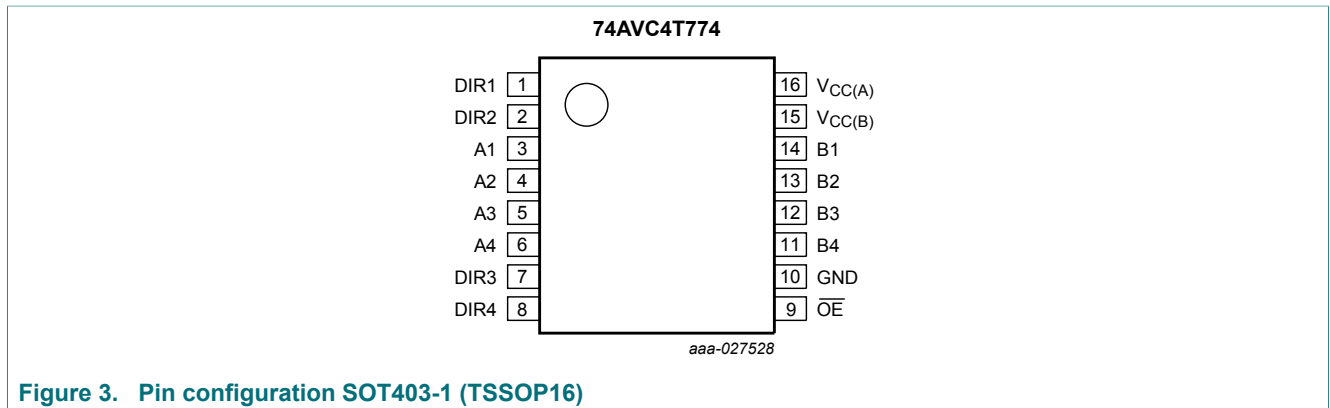


Figure 3. Pin configuration SOT403-1 (TSSOP16)

6.2 Pin description

Table 3. Pin description

| Symbol | Pin | Description |
|------------------------|----------------|--|
| V _{CC(A)} | 16 | supply voltage A (An, \overline{OE} and DIRn inputs are referenced to V _{CC(A)}) |
| DIR1, DIR2, DIR3, DIR4 | 1, 2, 7, 8 | direction control input |
| A1, A2, A3, A4 | 3, 4, 5, 6 | data input or output |
| GND | 10 | ground (0 V) |
| B1, B2, B3, B4 | 14, 13, 12, 11 | data input or output |
| \overline{OE} | 9 | output enable input (active LOW) |
| V _{CC(B)} | 15 | supply voltage B (Bn pins are referenced to V _{CC(B)}) |

7 Functional description

Table 4. Function table ^{[1] [2]}

| Supply voltage $V_{CC(A)}, V_{CC(B)}$ | Input | | | | | Input/output | |
|--|-----------------|------|------|------|------|--------------|----------|
| | \overline{OE} | DIR1 | DIR2 | DIR3 | DIR4 | An | Bn |
| 0.8 V to 3.6 V | L | L | X | X | X | A1 = B1 | input B1 |
| 0.8 V to 3.6 V | L | H | X | X | X | input A1 | B1 = A1 |
| 0.8 V to 3.6 V | L | X | L | X | X | A2 = B2 | input B2 |
| 0.8 V to 3.6 V | L | X | H | X | X | input A2 | B2 = A2 |
| 0.8 V to 3.6 V | L | X | X | L | X | A3 = B3 | input B3 |
| 0.8 V to 3.6 V | L | X | X | H | X | input A3 | B3 = A3 |
| 0.8 V to 3.6 V | L | X | X | X | L | A4 = B4 | input B4 |
| 0.8 V to 3.6 V | L | X | X | X | H | input A4 | B4 = A4 |
| 0.8 V to 3.6 V | H | X | X | X | X | Z | Z |
| GND ^[3] | X | X | X | X | X | Z | Z |

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

[2] The An, DIRn and \overline{OE} input circuit is referenced to $V_{CC(A)}$; The Bn 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.

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 | | -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 | $I_{CC(A)}$ or $I_{CC(B)}$ | - | 100 | mA |
| I_{GND} | ground current | | -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 TSSOP16 package: above 60 °C the value of P_{tot} derates linearly at 5.5 mW/K.

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 |
| $\Delta t/\Delta V$ | input transition rise and fall rate | $V_{CCI} = 0.8\text{ V to }3.6\text{ V}$ ^[2] | - | 10 | 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 $T_{amb} = 25\text{ °C}$ ^[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} $I_O = -1.5\text{ mA}$; $V_{CC(A)} = V_{CC(B)} = 0.8\text{ V}$ | - | 0.69 | - | V |
| V_{OL} | LOW-level output voltage | $V_I = V_{IH}$ or V_{IL} $I_O = 1.5\text{ mA}$; $V_{CC(A)} = V_{CC(B)} = 0.8\text{ V}$ | - | 0.07 | - | V |
| I_I | input leakage current | DIRn, \overline{OE} input; $V_I = 0\text{ V}$ or 3.6 V ; $V_{CC(A)} = V_{CC(B)} = 0.8\text{ V to }3.6\text{ V}$ | - | ± 0.025 | ± 0.25 | μA |
| I_{OZ} | OFF-state output current | A or B port; $V_O = 0\text{ V}$ or V_{CCO} ; $V_{CC(A)} = V_{CC(B)} = 3.6\text{ V}$ ^[3] | - | ± 0.5 | ± 2.5 | μA |
| | | suspend mode A port; $V_O = 0\text{ V}$ or V_{CCO} ; $V_{CC(A)} = 3.6\text{ V}$; $V_{CC(B)} = 0\text{ V}$ ^[3] | - | ± 0.5 | ± 2.5 | μA |
| | | suspend mode B port; $V_O = 0\text{ V}$ or V_{CCO} ; $V_{CC(A)} = 0\text{ V}$; $V_{CC(B)} = 3.6\text{ V}$ ^[3] | - | ± 0.5 | ± 2.5 | μA |
| I_{OFF} | power-off leakage current | A port; V_I or $V_O = 0\text{ V to }3.6\text{ V}$; $V_{CC(A)} = 0\text{ V}$; $V_{CC(B)} = 0.8\text{ V to }3.6\text{ V}$ | - | ± 0.1 | ± 1 | μA |
| | | B port; V_I or $V_O = 0\text{ V to }3.6\text{ V}$; $V_{CC(B)} = 0\text{ V}$; $V_{CC(A)} = 0.8\text{ V to }3.6\text{ V}$ | - | ± 0.1 | ± 1 | μA |
| C_I | input capacitance | DIRn, \overline{OE} input; $V_I = 0\text{ V}$ or 3.3 V ; $V_{CC(A)} = V_{CC(B)} = 3.3\text{ V}$ | - | 2.0 | - | pF |
| $C_{I/O}$ | input/output capacitance | A and B port; $V_O = 3.3\text{ V}$ or 0 V ; $V_{CC(A)} = V_{CC(B)} = 3.3\text{ V}$ | - | 4.0 | - | 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.

Table 8. 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 |
| | | DIRn, $\overline{\text{OE}}$ 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 |
| | | DIRn, $\overline{\text{OE}}$ 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 |

| 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 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 | DIRn, \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 |
| 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 |

| 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 |
| ΔI _{CC} | additional supply current | V _I = 3.0 V; V _{CC(A)} = V _{CC(B)} = 3.6 V | - | 500 | - | 650 | 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 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 $T_{amb} = 25\text{ °C}$ [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 An to Bn); output enabled | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | pF |
| | | A port: (direction An to Bn); output disabled | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | pF |
| | | A port: (direction Bn to An); output enabled | 9.5 | 9.7 | 9.8 | 9.9 | 10.7 | 11.9 | pF |
| | | A port: (direction Bn to An); output disabled | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | pF |
| | | B port: (direction An to Bn); output enabled | 9.5 | 9.7 | 9.8 | 9.9 | 10.7 | 11.9 | pF |
| | | B port: (direction An to Bn); output disabled | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | pF |
| | | B port: (direction Bn to An); output enabled | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | pF |
| | | B port: (direction Bn to An); 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).

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

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 = ∞ Ω.

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

Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 6](#); for waveforms 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 | |
| t_{pd} | propagation delay | An to Bn | 14.5 | 7.3 | 6.5 | 6.2 | ns |
| | | Bn to An | 14.5 | 12.7 | 12.4 | 12.3 | ns |
| t_{dis} | disable time | \overline{OE} to An | 14.3 | 14.3 | 14.3 | 14.3 | ns |
| | | \overline{OE} to Bn | 17.0 | 9.9 | 9.0 | 9.4 | ns |
| t_{en} | enable time | \overline{OE} to An | 18.2 | 18.2 | 18.2 | 18.2 | ns |
| | | \overline{OE} to Bn | 19.2 | 10.7 | 9.8 | 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 12. Typical dynamic characteristics at $V_{CC(B)} = 0.8\text{ V}$ and $T_{amb} = 25\text{ °C}$ [1]

Voltages are referenced to GND (ground = 0 V); for test circuit see [Figure 6](#); for waveforms 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 | |
| t_{pd} | propagation delay | An to Bn | 14.5 | 12.7 | 12.4 | 12.3 | ns |
| | | Bn to An | 14.5 | 7.3 | 6.5 | 6.2 | ns |
| t_{dis} | disable time | \overline{OE} to An | 14.3 | 5.5 | 4.1 | 4.0 | ns |
| | | \overline{OE} to Bn | 17.0 | 13.8 | 13.4 | 13.1 | ns |
| t_{en} | enable time | \overline{OE} to An | 18.2 | 5.6 | 4.0 | 3.2 | ns |
| | | \overline{OE} to Bn | 19.2 | 14.6 | 14.1 | 13.9 | 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 13. 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 waveforms 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 | An to Bn | 2.0 | 10.5 | 1.3 | 7.8 | 1.2 | 6.9 | 1.0 | 5.9 | 0.8 | 5.7 | ns |
| | | Bn to An | 2.0 | 10.5 | 1.5 | 9.9 | 1.5 | 9.7 | 1.4 | 9.4 | 1.4 | 9.3 | ns |
| t _{dis} | disable time | \overline{OE} to An | 2.0 | 10.0 | 2.0 | 10.0 | 2.0 | 10.0 | 2.0 | 10.0 | 2.0 | 10.0 | ns |
| | | \overline{OE} to Bn | 2.0 | 11.1 | 2.0 | 8.6 | 1.0 | 8.0 | 0.7 | 7.0 | 1.0 | 8.0 | ns |
| t _{en} | enable time | \overline{OE} to An | 2.0 | 13.5 | 2.0 | 13.5 | 2.0 | 13.5 | 2.0 | 13.5 | 2.0 | 13.5 | ns |
| | | \overline{OE} to Bn | 2.0 | 15.0 | 2.0 | 11.0 | 2.0 | 9.4 | 1.0 | 7.8 | 1.0 | 7.4 | ns |
| V_{CC(A)} = 1.4 V to 1.6 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.5 | 9.9 | 1.0 | 7.1 | 1.0 | 6.0 | 0.5 | 4.8 | 0.5 | 4.3 | ns |
| | | Bn to An | 1.3 | 7.8 | 1.0 | 7.1 | 0.9 | 6.9 | 0.8 | 6.6 | 0.6 | 6.5 | ns |
| t _{dis} | disable time | \overline{OE} to An | 1.0 | 6.0 | 1.0 | 6.0 | 1.0 | 6.0 | 1.0 | 6.0 | 1.0 | 6.0 | ns |
| | | \overline{OE} to Bn | 2.0 | 10.2 | 1.5 | 7.5 | 0.9 | 7.2 | 0.4 | 6.2 | 0.4 | 6.1 | ns |
| t _{en} | enable time | \overline{OE} to An | 1.0 | 7.5 | 1.0 | 7.5 | 1.0 | 7.5 | 1.0 | 7.5 | 1.0 | 7.5 | ns |
| | | \overline{OE} to Bn | 2.0 | 14.4 | 1.4 | 7.9 | 1.3 | 7.7 | 1.1 | 6.4 | 1.1 | 5.6 | ns |
| V_{CC(A)} = 1.65 V to 1.95 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.5 | 9.7 | 0.9 | 6.9 | 0.8 | 5.7 | 0.5 | 4.5 | 0.3 | 4.0 | ns |
| | | Bn to An | 1.2 | 6.9 | 1.0 | 6.0 | 0.8 | 5.7 | 0.5 | 5.5 | 0.5 | 5.3 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.5 | 5.7 | 0.5 | 5.7 | 0.5 | 5.7 | 0.5 | 5.7 | 0.5 | 5.7 | ns |
| | | \overline{OE} to Bn | 2.0 | 9.9 | 1.5 | 7.0 | 0.8 | 6.9 | 0.2 | 5.8 | 0.2 | 5.9 | ns |
| t _{en} | enable time | \overline{OE} to An | 1.0 | 6.7 | 1.0 | 6.7 | 1.0 | 6.7 | 1.0 | 6.7 | 1.0 | 6.7 | ns |
| | | \overline{OE} to Bn | 1.5 | 13.9 | 1.2 | 7.2 | 1.2 | 6.9 | 0.8 | 5.4 | 0.6 | 5.0 | ns |
| V_{CC(A)} = 2.3 V to 2.7 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.4 | 9.4 | 0.8 | 6.6 | 0.5 | 5.5 | 0.4 | 4.2 | 0.2 | 3.7 | ns |
| | | Bn to An | 1.0 | 5.9 | 0.5 | 4.8 | 0.5 | 4.5 | 0.4 | 4.2 | 0.3 | 3.9 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.2 | 4.0 | 0.2 | 4.0 | 0.2 | 4.0 | 0.2 | 4.0 | 0.2 | 4.0 | ns |
| | | \overline{OE} to Bn | 2.0 | 9.3 | 1.5 | 6.7 | 0.7 | 6.3 | 0.2 | 5.0 | 0.2 | 5.7 | ns |
| t _{en} | enable time | \overline{OE} to An | 0.6 | 4.5 | 0.6 | 4.5 | 0.6 | 4.5 | 0.6 | 4.5 | 0.6 | 4.5 | ns |
| | | \overline{OE} to Bn | 1.5 | 13.6 | 1.0 | 6.8 | 1.0 | 6.0 | 0.8 | 4.6 | 0.6 | 4.2 | ns |

| 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)} = 3.0 V to 3.6 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.4 | 9.3 | 0.6 | 6.5 | 0.5 | 5.3 | 0.3 | 3.9 | 0.2 | 3.5 | ns |
| | | Bn to An | 0.8 | 5.7 | 0.5 | 4.3 | 0.3 | 4.0 | 0.2 | 3.7 | 0.2 | 3.5 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.2 | 4.5 | 0.2 | 4.5 | 0.2 | 4.5 | 0.2 | 4.5 | 0.2 | 4.5 | ns |
| | | \overline{OE} to Bn | 2.0 | 9.0 | 1.5 | 6.4 | 0.7 | 6.1 | 0.2 | 4.8 | 0.2 | 5.6 | ns |
| t _{en} | enable time | \overline{OE} to An | 0.5 | 4.0 | 0.5 | 4.0 | 0.5 | 4.0 | 0.5 | 4.0 | 0.5 | 4.0 | ns |
| | | \overline{OE} to Bn | 1.5 | 13.4 | 1.0 | 6.7 | 1.0 | 5.9 | 0.7 | 4.4 | 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}.

Table 14. Dynamic characteristics for temperature range -40 °C to +125 °C [1]

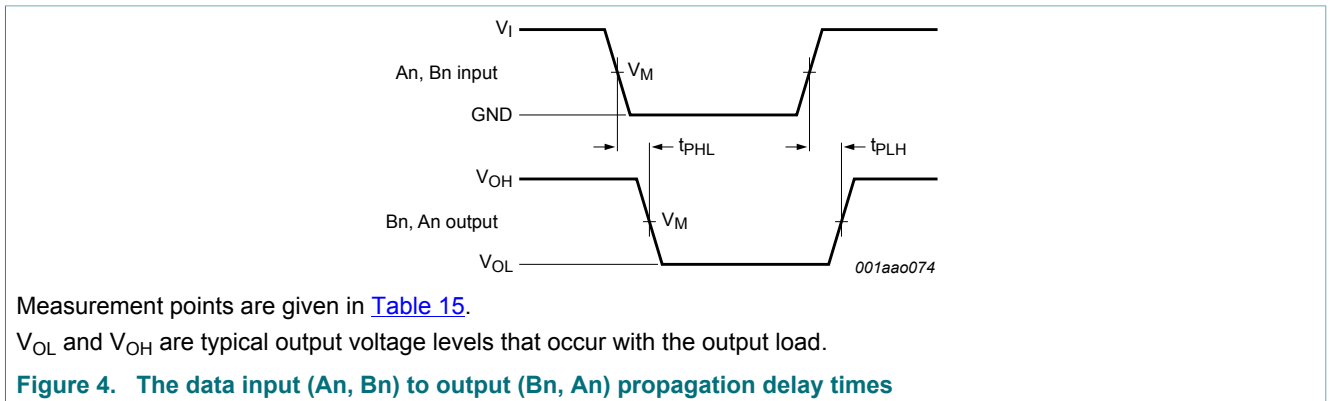
Voltages are referenced to GND (ground = 0 V); for test circuit see Figure 6; for waveforms see Figure 4 and Figure 5

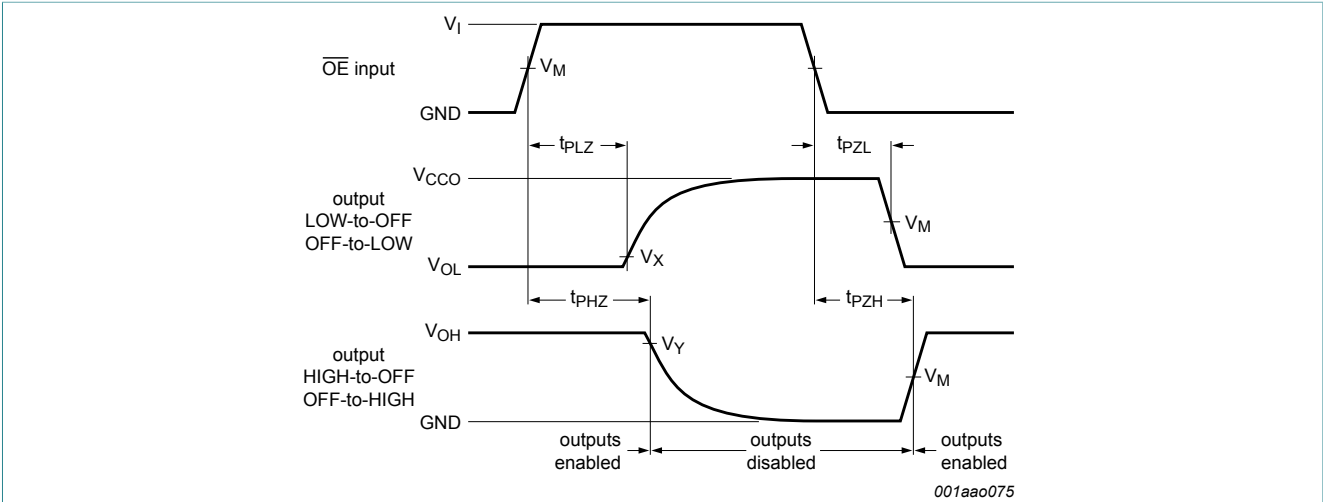
| Symbol | Parameter | Conditions | V _{CC(B)} | | | | | | | | | | Unit |
|-------------------------------------|-------------------|-----------------------|--------------------|------|--------------|------|---------------|------|--------------|------|--------------|------|------|
| | | | 1.2 V ±0.1 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 | An to Bn | 2.0 | 12.1 | 1.3 | 9.0 | 1.2 | 8.0 | 1.0 | 6.8 | 0.8 | 6.6 | ns |
| | | Bn to An | 2.0 | 12.1 | 1.5 | 11.4 | 1.5 | 11.2 | 1.4 | 10.9 | 1.4 | 10.7 | ns |
| t _{dis} | disable time | \overline{OE} to An | 2.0 | 11.5 | 2.0 | 11.5 | 2.0 | 11.5 | 2.0 | 11.5 | 2.0 | 11.5 | ns |
| | | \overline{OE} to Bn | 2.0 | 12.8 | 2.0 | 9.9 | 1.0 | 9.2 | 0.7 | 8.1 | 1.0 | 9.2 | ns |
| t _{en} | enable time | \overline{OE} to An | 2.0 | 15.6 | 2.0 | 15.6 | 2.0 | 15.6 | 2.0 | 15.6 | 2.0 | 15.6 | ns |
| | | \overline{OE} to Bn | 2.0 | 17.3 | 2.0 | 12.7 | 2.0 | 10.9 | 1.0 | 9.0 | 1.0 | 8.6 | ns |
| V _{CC(A)} = 1.4 V to 1.6 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.5 | 11.4 | 1.0 | 8.2 | 1.0 | 6.9 | 0.5 | 5.6 | 0.5 | 5.0 | ns |
| | | Bn to An | 1.3 | 9.0 | 1.0 | 8.2 | 0.9 | 8.0 | 0.8 | 7.6 | 0.6 | 7.5 | ns |
| t _{dis} | disable time | \overline{OE} to An | 1.0 | 6.9 | 1.0 | 6.9 | 1.0 | 6.9 | 1.0 | 6.9 | 1.0 | 6.9 | ns |
| | | \overline{OE} to Bn | 2.0 | 11.8 | 1.5 | 8.7 | 0.9 | 8.3 | 0.4 | 7.2 | 0.4 | 7.1 | ns |
| t _{en} | enable time | \overline{OE} to An | 1.0 | 8.7 | 1.0 | 8.7 | 1.0 | 8.7 | 1.0 | 8.7 | 1.0 | 8.7 | ns |
| | | \overline{OE} to Bn | 2.0 | 16.6 | 1.4 | 9.1 | 1.3 | 8.9 | 1.1 | 7.4 | 1.1 | 6.5 | ns |

| 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)} = 1.65 V to 1.95 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.5 | 11.2 | 0.9 | 8.0 | 0.8 | 6.6 | 0.5 | 5.2 | 0.3 | 4.6 | ns |
| | | Bn to An | 1.2 | 8.0 | 1.0 | 6.9 | 0.8 | 6.6 | 0.5 | 6.4 | 0.5 | 6.1 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.5 | 6.6 | 0.5 | 6.6 | 0.5 | 6.6 | 0.5 | 6.6 | 0.5 | 6.6 | ns |
| | | \overline{OE} to Bn | 2.0 | 11.4 | 1.5 | 8.1 | 0.8 | 8.0 | 0.2 | 6.7 | 0.2 | 6.8 | ns |
| t _{en} | enable time | \overline{OE} to An | 1.0 | 7.8 | 1.0 | 7.8 | 1.0 | 7.8 | 1.0 | 7.8 | 1.0 | 7.8 | ns |
| | | \overline{OE} to Bn | 1.5 | 16.0 | 1.2 | 8.3 | 1.2 | 8.0 | 0.8 | 6.3 | 0.6 | 5.8 | ns |
| V_{CC(A)} = 2.3 V to 2.7 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.4 | 10.9 | 0.8 | 7.6 | 0.5 | 6.4 | 0.4 | 4.9 | 0.2 | 4.3 | ns |
| | | Bn to An | 1.0 | 6.8 | 0.5 | 5.6 | 0.5 | 5.2 | 0.4 | 4.9 | 0.3 | 4.5 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.2 | 4.6 | 0.2 | 4.6 | 0.2 | 4.6 | 0.2 | 4.6 | 0.2 | 4.6 | ns |
| | | \overline{OE} to Bn | 2.0 | 10.7 | 1.5 | 7.8 | 0.7 | 7.3 | 0.2 | 5.8 | 0.2 | 6.6 | ns |
| t _{en} | enable time | \overline{OE} to An | 0.6 | 5.2 | 0.6 | 5.2 | 0.6 | 5.2 | 0.6 | 5.2 | 0.6 | 5.2 | ns |
| | | \overline{OE} to Bn | 1.5 | 15.7 | 1.0 | 7.9 | 1.0 | 6.9 | 0.8 | 5.3 | 0.6 | 4.9 | ns |
| V_{CC(A)} = 3.0 V to 3.6 V | | | | | | | | | | | | | |
| t _{pd} | propagation delay | An to Bn | 1.4 | 10.7 | 0.6 | 7.5 | 0.5 | 6.1 | 0.3 | 4.5 | 0.2 | 4.1 | ns |
| | | Bn to An | 0.8 | 6.6 | 0.5 | 5.0 | 0.3 | 4.6 | 0.2 | 4.3 | 0.2 | 4.1 | ns |
| t _{dis} | disable time | \overline{OE} to An | 0.2 | 5.2 | 0.2 | 5.2 | 0.2 | 5.2 | 0.2 | 5.2 | 0.2 | 5.2 | ns |
| | | \overline{OE} to Bn | 2.0 | 10.4 | 1.5 | 7.4 | 0.7 | 7.1 | 0.2 | 5.6 | 0.2 | 6.5 | ns |
| t _{en} | enable time | \overline{OE} to An | 0.5 | 4.6 | 0.5 | 4.6 | 0.5 | 4.6 | 0.5 | 4.6 | 0.5 | 4.6 | ns |
| | | \overline{OE} to Bn | 1.5 | 15.5 | 1.0 | 7.8 | 1.0 | 6.8 | 0.7 | 5.1 | 0.5 | 4.6 | 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}.

11.1 Waveforms and test circuit





Measurement points are given in [Table 15](#).

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

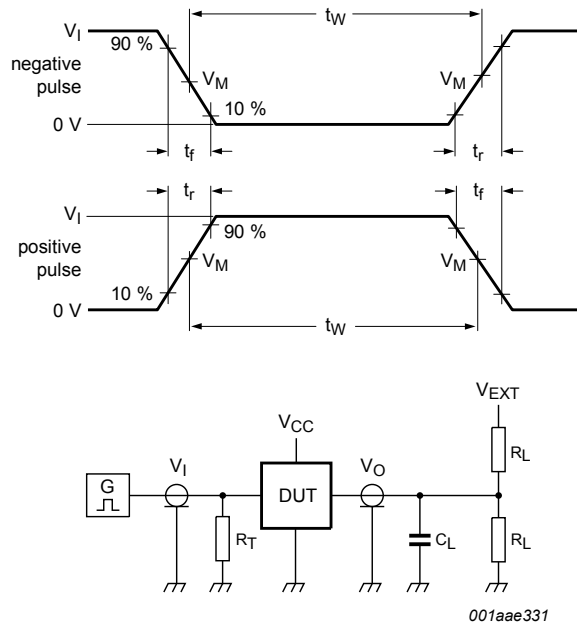
Figure 5. Enable and disable times

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.



Test data is given in [Table 16](#).

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

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

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

Figure 6. Test circuit for measuring switching times

Table 16. Test data

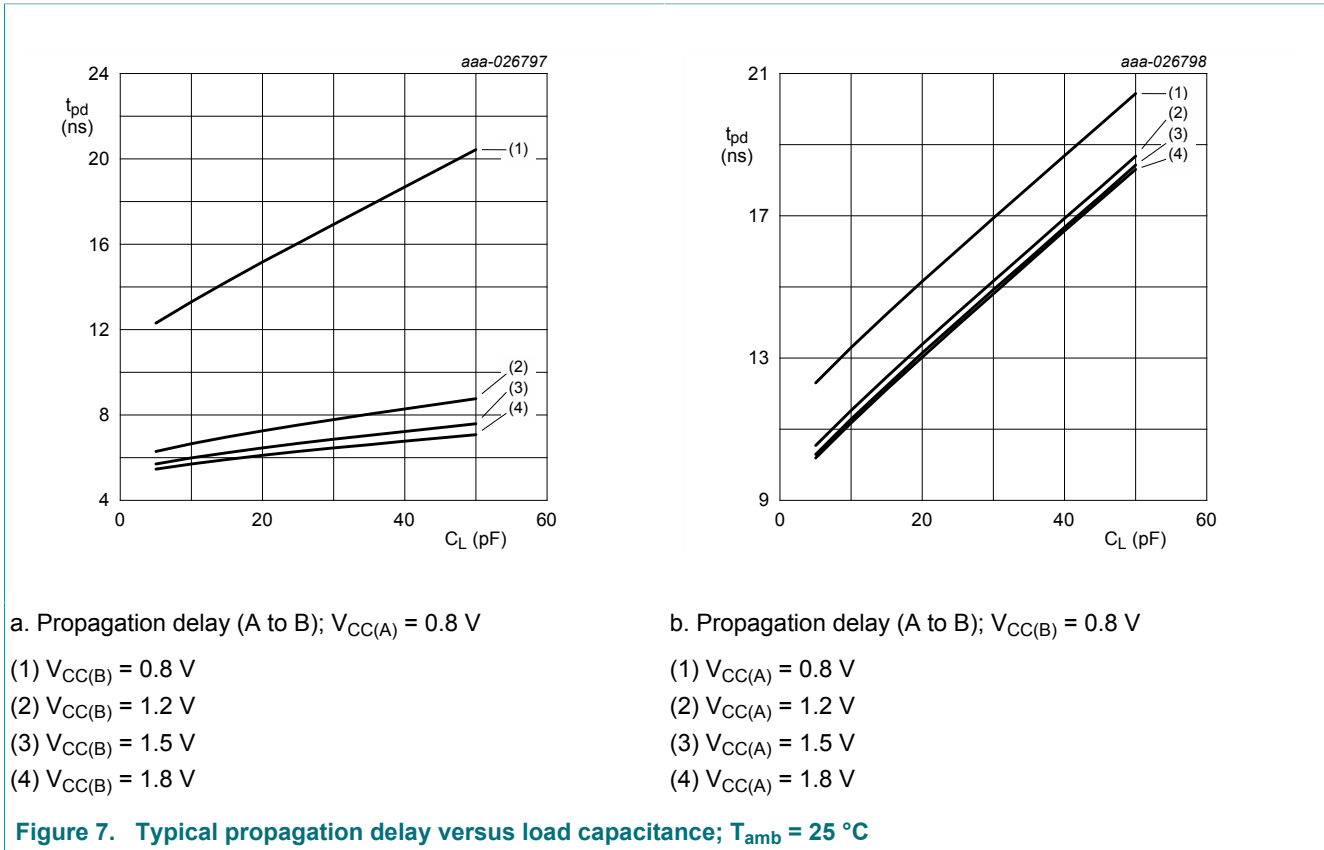
| Supply voltage | Input | | Load | | V_{EXT} | | |
|------------------------|-----------|-------------------------|-------|--------------|--------------------|--------------------|------------------------|
| $V_{CC(A)}, V_{CC(B)}$ | V_I [1] | $\Delta t/\Delta V$ [2] | C_L | R_L | t_{PLH}, t_{PHL} |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

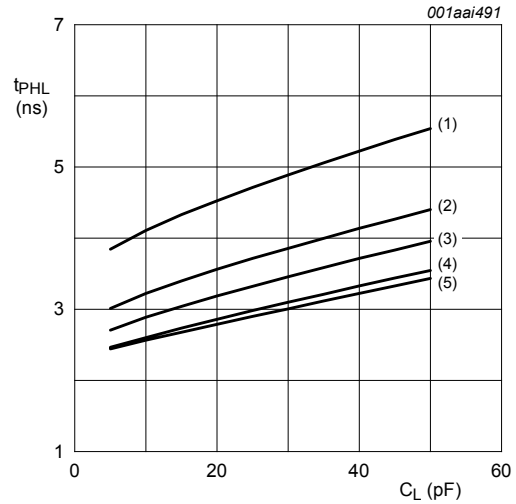
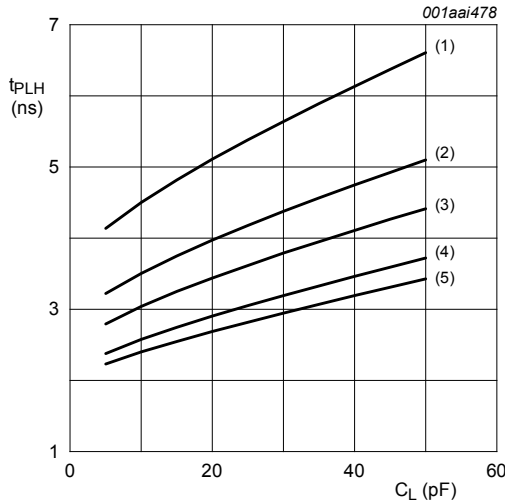
[1] V_{CCI} is the supply voltage associated with the data input port.

[2] $dV/dt \geq 1.0 \text{ V/ns}$

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

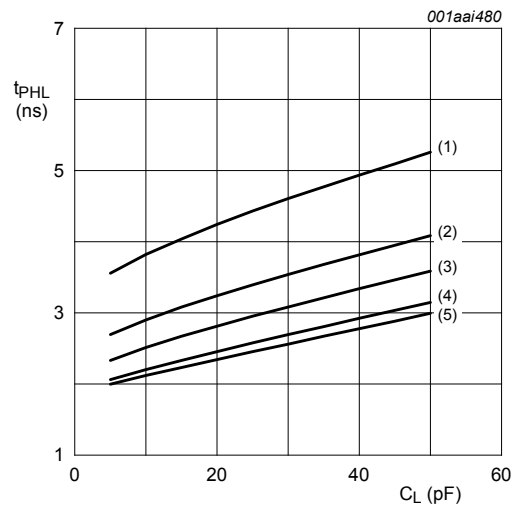
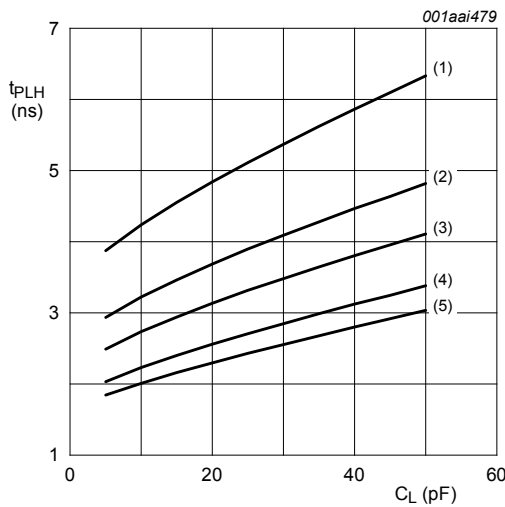
11.2 Typical propagation delay characteristics





a. LOW to HIGH propagation delay (A to B); $V_{CC(A)} = 1.2\text{ V}$

b. HIGH to LOW propagation delay (A to B); $V_{CC(A)} = 1.2\text{ V}$

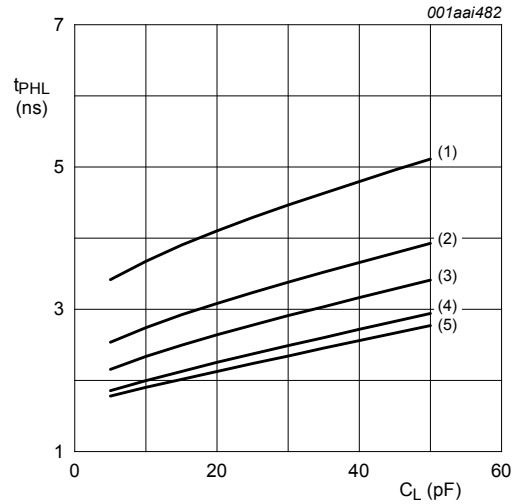
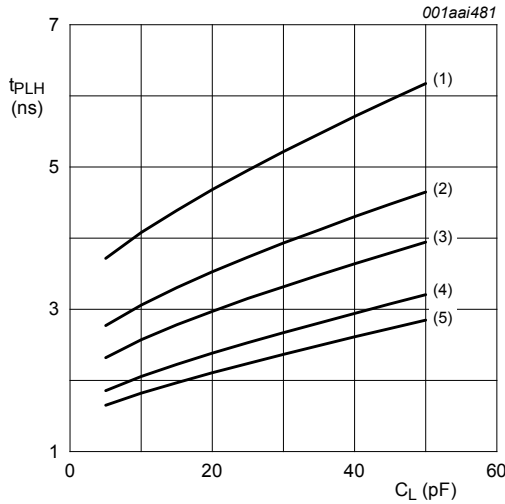


c. LOW to HIGH propagation delay (A to B); $V_{CC(A)} = 1.5\text{ V}$

d. HIGH to LOW propagation delay (A to B); $V_{CC(A)} = 1.5\text{ V}$

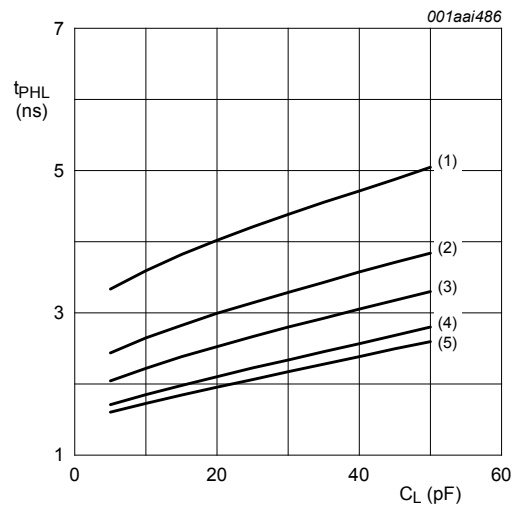
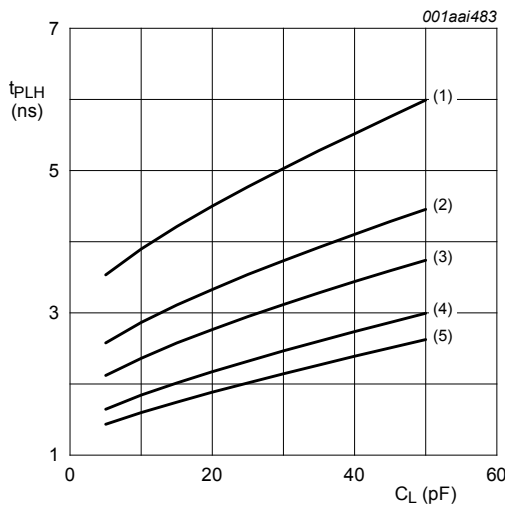
- (1) $V_{CC(B)} = 1.2\text{ V}$
- (2) $V_{CC(B)} = 1.5\text{ V}$
- (3) $V_{CC(B)} = 1.8\text{ V}$
- (4) $V_{CC(B)} = 2.5\text{ V}$
- (5) $V_{CC(B)} = 3.3\text{ V}$

Figure 8. Typical propagation delay versus load capacitance; $T_{amb} = 25\text{ }^\circ\text{C}$



a. LOW to HIGH propagation delay (A to B); $V_{CC(A)} = 1.8\text{ V}$

b. HIGH to LOW propagation delay (A to B); $V_{CC(A)} = 1.8\text{ V}$

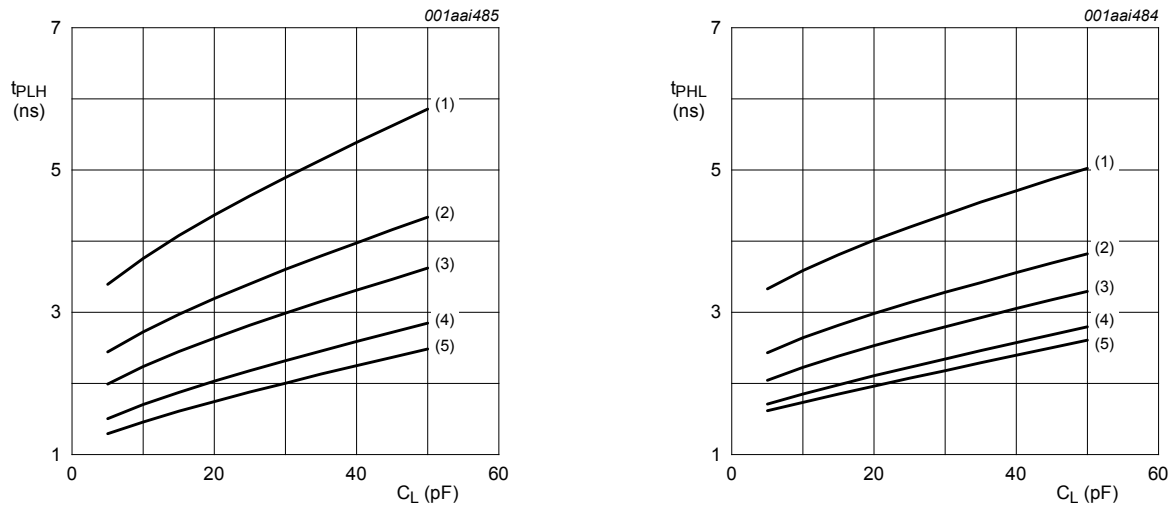


c. LOW to HIGH propagation delay (A to B); $V_{CC(A)} = 2.5\text{ V}$

d. HIGH to LOW propagation delay (A to B); $V_{CC(A)} = 2.5\text{ V}$

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

Figure 9. Typical propagation delay versus load capacitance; $T_{amb} = 25\text{ }^\circ\text{C}$



a. LOW to HIGH propagation delay (A to B); $V_{CC(A)} = 3.3\text{ V}$ b. HIGH to LOW propagation delay (A to B); $V_{CC(A)} = 3.3\text{ V}$

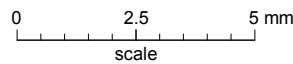
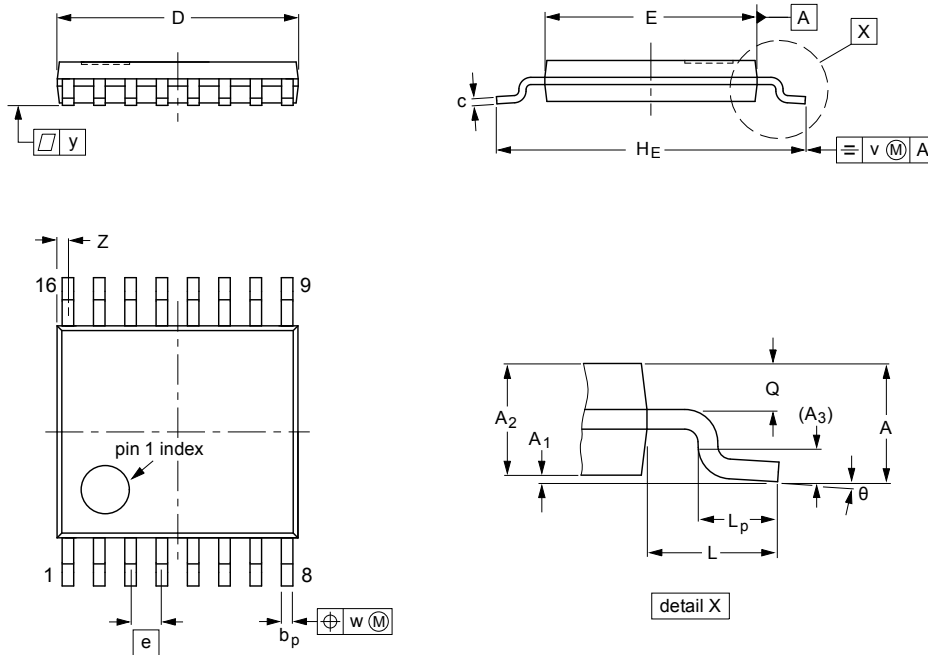
- (1) $V_{CC(B)} = 1.2\text{ V}$
- (2) $V_{CC(B)} = 1.5\text{ V}$
- (3) $V_{CC(B)} = 1.8\text{ V}$
- (4) $V_{CC(B)} = 2.5\text{ V}$
- (5) $V_{CC(B)} = 3.3\text{ V}$

Figure 10. Typical propagation delay versus load capacitance; $T_{amb} = 25\text{ °C}$

12 Package outline

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. | 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 |
|------|--------|----------------|----------------|----------------|----------------|------------|------------------|------------------|------|----------------|---|----------------|------------|-----|------|-----|------------------|----------|
| 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° |

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 |

Figure 11. Package outline SOT403-1 (TSSOP16)

13 Abbreviations

Table 17. Abbreviations

| Acronym | Description |
|---------|-------------------------|
| CDM | Charged Device Model |
| DUT | Device Under Test |
| ESD | ElectroStatic Discharge |
| HBM | Human Body Model |

14 Revision history

Table 18. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|------------------|--------------|-------------------|---------------|------------|
| 74AVC4T774PW v.1 | 20170925 | Product sheet | - | - |

15 Legal information

15.1 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>.

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