# AiP74AVCH8T245
# 8-Bit Dual Supply Translating Transceiver; 3-State

# Product Specification

**Specification Revision History：**

| Version | Date | Description |
|---|---|---|
| 2025-11-A0 | 2025-11 | New |
| 2026-03-A1 | 2026-03 | Modify the parameters |
| | | |
| | | |

# Contents

## 1、General Description

The AiP74AVCH8T245 is a 8-bit, dual supply transceiver that enables bidirectional level translation. It features two 8-bit input-output ports (An and Bn), a direction control input (DIR), a 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 0.8V and 3.6V making the device suitable for translating between any of the low voltage nodes (0.8V, 1.2V, 1.5V, 1.8V, 2.5V and 3.3V). Pins An, $\overline{OE}$ and DIR are referenced to $V_{CC(A)}$ and pins Bn are referenced to $V_{CC(B)}$. A HIGH on DIR allows transmission from An to Bn and a LOW on DIR allows transmission from Bn to An. The output enable input ($\overline{OE}$) can be used to disable the outputs so the buses are effectively isolated.

The AiP74AVCH8T245 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.

**Features:**

- Wide supply voltage range:
  $V_{CC(A)}$: 0.8V to 3.6V
  $V_{CC(B)}$: 0.8V to 3.6V
- Suspend mode
- Bus hold on data inputs
- Inputs accept voltages up to 3.6V
- Specified from -40℃ to +125℃
- Packaging information: TSSOP24/DHVQFN24

**Ordering Information:**

**Reel packing specifications:**

| Part number | Packaging form | Marking code | Reel quantity | Boxed reel quantity | Notes | Moisture sensitivity level |
|---|---|---|---|---|---|---|
| AiP74AVCH8T245 QE24.TR | DHVQFN24 | 74AVCH8T245 | 3000 PCS/reel | 3000 PCS/box | Dimensions of plastic enclosure: 5.5mm×3.5mm Pin spacing: 0.5mm | MSL3 |
| AiP74AVCH8T245 TA24.TR | TSSOP24 | 74AVCH8T245 | 4000 PCS/reel | 8000 PCS/box | Dimensions of plastic enclosure: 7.8mm×4.4mm Pin spacing: 0.65mm | MSL3 |

Note: If the physical information is inconsistent with the ordering information, please refer to the actual product.

## 2、Block Diagram And Pin Description

### 2.1、Block Diagram

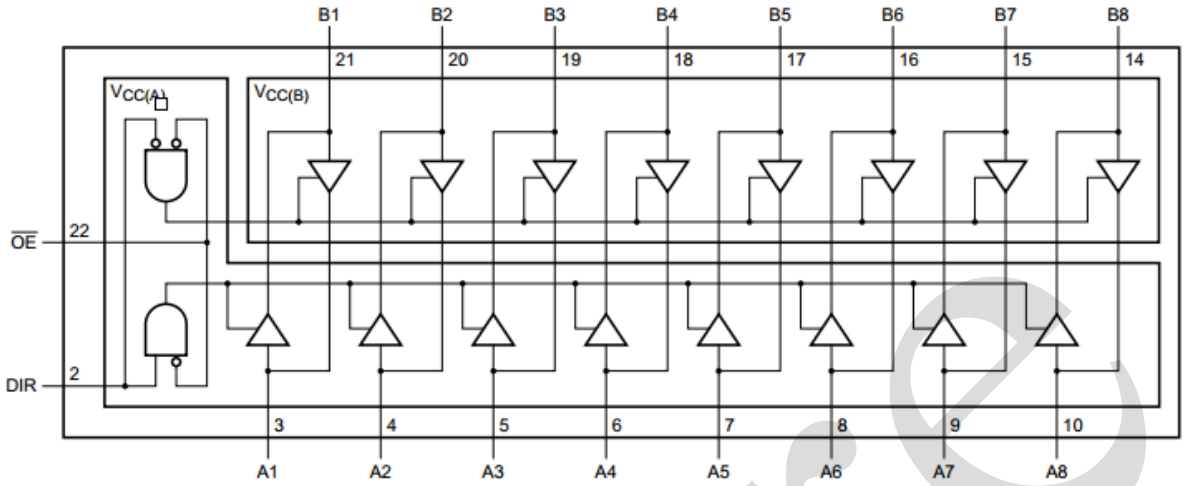



Figure 1. Logic symbol

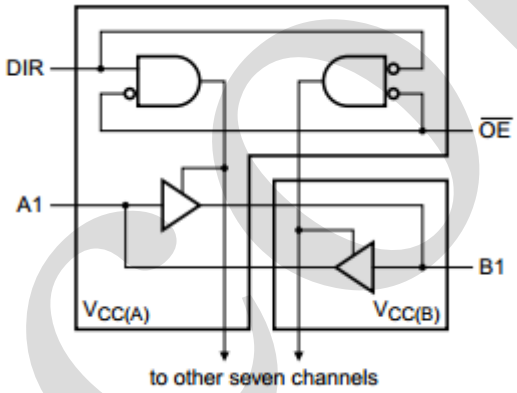
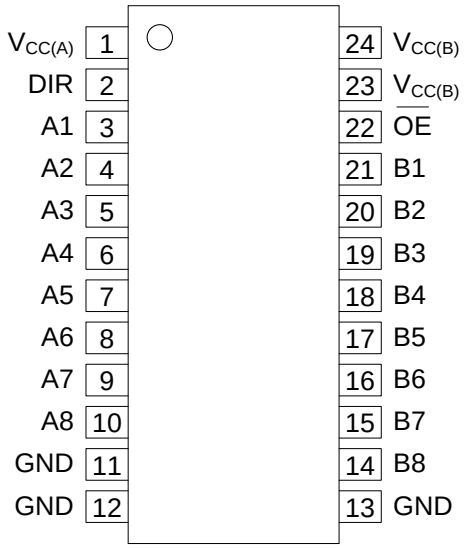
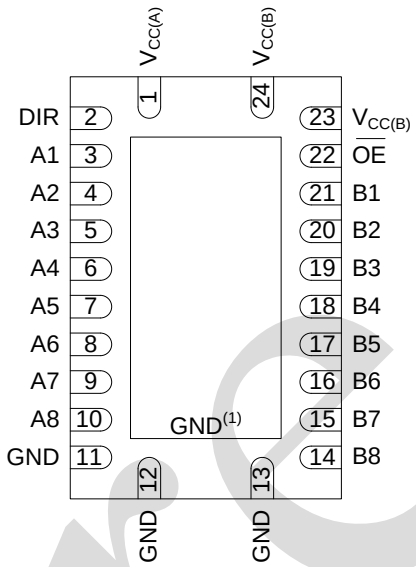



Figure 2. Logic diagram (one channel)

## 2.2、Pin Configurations




**TSSOP24**




**DHVQFN24**

Note: (1) This is not a supply pin.

## 2.3、Pin Description

| Pin Name | Pin Name | Description |
|---|---|---|
| 1 | $V_{CC(A)}$ | supply voltage A (An, $\overline{OE}$ and DIR inputs are referenced to $V_{CC(A)}$) |
| 2 | DIR | direction control |
| 3,4,5,6,7,8,9,10 | A1 to A8 | data input or output |
| 11 | GND | ground (0V) |
| 12 | GND | ground (0V) |
| 13 | GND | ground (0V) |
| 21,20,19,18,17,16,15,14 | B1 to B8 | data input or output |
| 22 | $\overline{OE}$ | output enable input (active LOW) |
| 23 | $V_{CC(B)}$ | supply voltage B (Bn inputs are referenced to $V_{CC(B)}$) |
| 24 | $V_{CC(B)}$ | supply voltage B (Bn inputs are referenced to $V_{CC(B)}$) |

### 2.4、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] | |
|---|---|---|---|---|
| $V_{CC(A)}$, $V_{CC(B)}$ | $\overline{OE}$[2] | DIR[2] | An[2] | Bn[2] |
| 0.8V to 3.6V | L | L | An=Bn | input |
| 0.8V to 3.6V | L | H | input | Bn=An |
| 0.8V to 3.6V | H | X | Z | Z |
| GND[1] | X | X | Z | Z |

Note:

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

## 3、Electrical Parameter

### 3.1、Absolute Maximum Ratings

($T_{amb}$=25℃, all voltage referenced to GND (ground=0V), unless otherwise specified)

| Characteristic | Symbol | Conditions | Min. | Max. | Unit |
|---|---|---|---|---|---|
| supply voltage A | $V_{CC(A)}$ | - | -0.5 | +4.6 | V |
| supply voltage B | $V_{CC(B)}$ | - | -0.5 | +4.6 | V |
| input clamping current | $I_{IK}$ | $V_I$<0V | -50 | - | mA |
| input voltage | $V_I$ | - | -0.5 | +4.6 | V |
| output clamping current | $I_{OK}$ | $V_O$<0V | -50 | - | mA |
| output voltage | $V_O$ | Active mode[1][2][3] | -0.5 | $V_{CCO}$+0.5 | V |
| | | Suspend or 3-state mode[1] | -0.5 | +4.6 | V |
| output current | $I_O$ | $V_O$=0V to $V_{CCO}$[2] | - | ±50 | mA |
| supply current | $I_{CC}$ | per $V_{CC(A)}$ or $V_{CC(B)}$ pin | - | 100 | mA |
| ground current | $I_{GND}$ | per GND pin | -100 | - | mA |
| storage temperature | $T_{stg}$ | - | -65 | +150 | ℃ |
| total power dissipation | $P_{tot}$ | - | - | 500 | mW |
| soldering temperature | $T_L$ | 10s | 260 | | ℃ |
| electrostatic discharge | ESD | HBM | 2000 | | V |

Note:

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

### 3.2、Recommended Operating Conditions

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| supply voltage A | $V_{CC(A)}$ | - | 0.8 | - | 3.6 | V |
| supply voltage B | $V_{CC(B)}$ | - | 0.8 | - | 3.6 | V |
| input voltage | $V_I$ | - | 0 | - | 3.6 | V |
| output voltage | $V_O$ | Active mode[1] | 0 | - | $V_{CCO}$ | V |
| | | Suspend or 3-state mode | 0 | - | 3.6 | V |
| ambient temperature | $T_{amb}$ | - | -40 | - | +125 | ℃ |

Note:

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

### 3.3、Electrical Characteristics

#### 3.3.1、DC Characteristics 1

($T_{amb}$=25℃, voltages are referenced to GND (ground=0V), unless otherwise specified)[1][2]

| Parameter | Symbol | Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| HIGH-level output voltage | $V_{OH}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=-1.5mA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V | - | 0.69 | - | V |
| LOW-level output voltage | $V_{OL}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=1.5mA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V | - | 0.07 | - | V |
| input leakage current | $I_I$ | nDIR, n$\overline{OE}$ input; $V_I$=0V or 3.6V; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | | - | ±1 | ±1 | uA |
| bus hold LOW current | $I_{BHL}$ | A or B port; $V_I$=0.42V; $V_{CC(A)}$=$V_{CC(B)}$=1.2V | | - | 26 | - | uA |
| bus hold HIGH current | $I_{BHH}$ | A or B port; $V_I$=0.78V; $V_{CC(A)}$=$V_{CC(B)}$=1.2V | | - | -24 | - | uA |
| bus hold LOW overdrive current | $I_{BHLO}$ | A or B port; $V_{CC(A)}$=$V_{CC(B)}$=1.2V | | - | 27 | - | uA |
| bus hold HIGH overdrive current | $I_{BHHO}$ | A or B port; $V_{CC(A)}$=$V_{CC(B)}$=1.2V | | - | -26 | - | uA |
| OFF-state output current | $I_{OZ}$ | A or B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=$V_{CC(B)}$=3.6V | | - | ±1 | ±2.5 | uA |
| | | suspend mode A port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | | - | ±1 | ±2.5 | uA |
| | | suspend mode B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | | - | ±1 | ±2.5 | uA |
| power-off leakage current | $I_{OFF}$ | A port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(A)}$=0V; $V_{CC(B)}$=0.8V to 3.6V | | - | ±0.1 | ±1 | uA |
| | | B port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(B)}$=0V; $V_{CC(A)}$=0.8V to 3.6V | | - | ±0.1 | ±1 | uA |
| input capacitance | $C_I$ | nDIR, n$\overline{OE}$ input; $V_I$=0V or 3.3V; $V_{CC(A)}$=$V_{CC(B)}$=3.3V | | - | 1.5 | - | pF |
| input/output capacitance | $C_{I/O}$ | A and B port; $V_O$=3.3V or 0V; $V_{CC(A)}$=$V_{CC(B)}$=3.3V | | - | 4.3 | - | pF |

Note:

[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.

### 3.3.2、DC Characteristics 2

($T_{amb}$=-40℃ to +85℃, voltages are referenced to GND (ground=0V), unless otherwise specified) [1][2]

| Parameter | Symbol | Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| HIGH-level input voltage | $V_{IH}$ | data input | $V_{CCI}$=0.8V | 0.70$V_{CCI}$ | - | - | V |
| | | | $V_{CCI}$=1.1V to 1.95V | 0.65$V_{CCI}$ | - | - | V |
| | | | $V_{CCI}$=2.3V to 2.7V | 1.6 | - | - | V |
| | | | $V_{CCI}$=3.0V to 3.6V | 2 | - | - | V |
| | | $\overline{DIR}$, $\overline{OE}$ input | $V_{CC(A)}$=0.8V | 0.70$V_{CC(A)}$ | - | - | V |
| | | | $V_{CC(A)}$=1.1V to 1.95V | 0.65$V_{CC(A)}$ | - | - | V |
| | | | $V_{CC(A)}$=2.3V to 2.7V | 1.6 | - | - | V |
| | | | $V_{CC(A)}$=3.0V to 3.6V | 2 | - | - | V |
| LOW-level input voltage | $V_{IL}$ | data input | $V_{CCI}$=0.8V | - | - | 0.30$V_{CCI}$ | V |
| | | | $V_{CCI}$=1.1V to 1.95V | - | - | 0.35$V_{CCI}$ | V |
| | | | $V_{CCI}$=2.3V to 2.7V | - | - | 0.7 | V |
| | | | $V_{CCI}$=3.0V to 3.6V | - | - | 0.8 | V |
| | | $\overline{DIR}$, $\overline{OE}$ input | $V_{CC(A)}$=0.8V | - | - | 0.30$V_{CC(A)}$ | V |
| | | | $V_{CC(A)}$=1.1V to 1.95V | - | - | 0.35$V_{CC(A)}$ | V |
| | | | $V_{CC(A)}$=2.3V to 2.7V | - | - | 0.7 | V |
| | | | $V_{CC(A)}$=3.0V to 3.6V | - | - | 0.8 | V |
| HIGH-level output voltage | $V_{OH}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=-100uA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | $V_{CCO}$-0.1 | - | - | V |
| | | | $I_O$=-3mA; $V_{CC(A)}$=$V_{CC(B)}$=1.1V | 0.85 | - | - | V |
| | | | $I_O$=-6mA; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | 1.05 | - | - | V |
| | | | $I_O$=-8mA; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | 1.2 | - | - | V |
| | | | $I_O$=-9mA; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | 1.75 | - | - | V |
| | | | $I_O$=-12mA; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | 2.3 | - | - | V |
| LOW-level output voltage | $V_{OL}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=100uA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | - | - | 0.1 | V |
| | | | $I_O$=3mA; $V_{CC(A)}$=$V_{CC(B)}$=1.1V | - | - | 0.25 | V |
| | | | $I_O$=6mA; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | - | - | 0.35 | V |
| | | | $I_O$=8mA; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | - | - | 0.45 | V |
| | | | $I_O$=9mA; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | - | - | 0.55 | V |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | $I_O$=12mA; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | - | - | 0.7 | V |
| input leakage current | $I_I$ | DIR, $\overline{OE}$ input; $V_I$=0V or 3.6V; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | | - | - | ±1 | uA |
| bus hold LOW current | $I_{BHL}$ | A or B port | $V_I$=0.49V; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | 15 | - | - | uA |
| | | | $V_I$=0.58V; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | 25 | - | - | uA |
| | | | $V_I$=0.70V; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | 45 | - | - | uA |
| | | | $V_I$=0.80V; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | 100 | - | - | uA |
| bus hold HIGH current | $I_{BHH}$ | A or B port | $V_I$=0.91V; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | -15 | - | - | uA |
| | | | $V_I$=1.07V; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | -25 | - | - | uA |
| | | | $V_I$=1.60V; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | -45 | - | - | uA |
| | | | $V_I$=2.00V; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | -100 | - | - | uA |
| bus hold LOW overdrive current | $I_{BHLO}$ | A or B port | $V_{CC(A)}$=$V_{CC(B)}$=1.6V | 125 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=1.95V | 200 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=2.7V | 300 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=3.6V | 500 | - | - | uA |
| bus hold HIGH overdrive current | $I_{BHHO}$ | A or B port | $V_{CC(A)}$=$V_{CC(B)}$=1.6V | -125 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=1.95V | -200 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=2.7V | -300 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=3.6V | -500 | - | - | uA |
| OFF-state output current | $I_{OZ}$ | A or B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=$V_{CC(B)}$=3.6V | | - | - | ±5 | uA |
| | | suspend mode A port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | | - | - | ±5 | uA |
| | | suspend mode B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | | - | - | ±5 | uA |
| power-off leakage current | $I_{OFF}$ | A port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(A)}$=0V; $V_{CC(B)}$=0.8V to 3.6V | | - | - | ±5 | uA |
| | | B port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(B)}$=0V; $V_{CC(A)}$=0.8V to 3.6V | | - | - | ±5 | uA |
| supply current | $I_{CC}$ | A port; $V_I$=0V or $V_{CCI}$; $I_O$=0A | $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | - | - | 10 | uA |
| | | | $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | - | - | 8 | uA |
| | | | $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | - | - | 8 | uA |
| | | | $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | -2 | - | - | uA |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | B port; $V_I$=0V or $V_{CCI}$; $I_O$=0A | $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | - | - | 10 | uA |
| | | | $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | - | - | 8 | uA |
| | | | $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | -2 | - | - | uA |
| | | | $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | - | - | 8 | uA |
| | | A plus B port ($I_{CC(A)}$+$I_{CC(B)}$); $I_O$=0A; $V_I$=0V or $V_{CCI}$; $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | | - | - | 20 | uA |
| | | A plus B port ($I_{CC(A)}$+$I_{CC(B)}$); $I_O$=0A; $V_I$=0V or $V_{CCI}$; $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | | - | - | 16 | uA |

Note:

[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.

### 3.3.3、DC Characteristics 3

($T_{amb}$=-40℃ to +125℃, voltages are referenced to GND (ground=0V), unless otherwise specified) [1][2]

| Parameter | Symbol | Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| HIGH-level input voltage | $V_{IH}$ | data input | $V_{CCI}$=0.8V | 0.70$V_{CCI}$ | - | - | V |
| | | | $V_{CCI}$=1.1V to 1.95V | 0.65$V_{CCI}$ | - | - | V |
| | | | $V_{CCI}$=2.3V to 2.7V | 1.6 | - | - | V |
| | | | $V_{CCI}$=3.0V to 3.6V | 2 | - | - | V |
| | | DIR, $\overline{OE}$ input | $V_{CC(A)}$=0.8V | 0.70$V_{CC(A)}$ | - | - | V |
| | | | $V_{CC(A)}$=1.1V to 1.95V | 0.65$V_{CC(A)}$ | - | - | V |
| | | | $V_{CC(A)}$=2.3V to 2.7V | 1.6 | - | - | V |
| | | | $V_{CC(A)}$=3.0V to 3.6V | 2 | - | - | V |
| LOW-level input voltage | $V_{IL}$ | data input | $V_{CCI}$=0.8V | - | - | 0.30$V_{CCI}$ | V |
| | | | $V_{CCI}$=1.1V to 1.95V | - | - | 0.35$V_{CCI}$ | V |
| | | | $V_{CCI}$=2.3V to 2.7V | - | - | 0.7 | V |
| | | | $V_{CCI}$=3.0V to 3.6V | - | - | 0.8 | V |
| | | DIR, $\overline{OE}$ input | $V_{CC(A)}$=0.8V | - | - | 0.30$V_{CC(A)}$ | V |
| | | | $V_{CC(A)}$=1.1V to 1.95V | - | - | 0.35$V_{CC(A)}$ | V |
| | | | $V_{CC(A)}$=2.3V to 2.7V | - | - | 0.7 | V |
| | | | $V_{CC(A)}$=3.0V to 3.6V | - | - | 0.8 | V |
| HIGH-level output voltage | $V_{OH}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=-100uA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | $V_{CCO}$-0.1 | - | - | V |
| | | | $I_O$=-3mA; $V_{CC(A)}$=$V_{CC(B)}$=1.1V | 0.85 | - | - | V |
| | | | $I_O$=-6mA; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | 1.05 | - | - | V |
| | | | $I_O$=-8mA; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | 1.2 | - | - | V |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | $I_O$=-9mA; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | 1.75 | - | - | V |
| | | | $I_O$=-12mA; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | 2.3 | - | - | V |
| LOW-level output voltage | $V_{OL}$ | $V_I$=$V_{IH}$ or $V_{IL}$ | $I_O$=100uA; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | - | - | 0.1 | V |
| | | | $I_O$=3mA; $V_{CC(A)}$=$V_{CC(B)}$=1.1V | - | - | 0.25 | V |
| | | | $I_O$=6mA; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | - | - | 0.35 | V |
| | | | $I_O$=8mA; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | - | - | 0.45 | V |
| | | | $I_O$=9mA; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | - | - | 0.55 | V |
| | | | $I_O$=12mA; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | - | - | 0.7 | V |
| input leakage current | $I_I$ | DIR, $\overline{OE}$ input; $V_I$=0V or 3.6V; $V_{CC(A)}$=$V_{CC(B)}$=0.8V to 3.6V | | - | - | ±5 | uA |
| bus hold LOW current | $I_{BHL}$ | A or B port | $V_I$=0.49V; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | 15 | - | - | uA |
| | | | $V_I$=0.58V; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | 25 | - | - | uA |
| | | | $V_I$=0.70V; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | 45 | - | - | uA |
| | | | $V_I$=0.80V; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | 90 | - | - | uA |
| bus hold HIGH current | $I_{BHH}$ | A or B port | $V_I$=0.91V; $V_{CC(A)}$=$V_{CC(B)}$=1.4V | -15 | - | - | uA |
| | | | $V_I$=1.07V; $V_{CC(A)}$=$V_{CC(B)}$=1.65V | -25 | - | - | uA |
| | | | $V_I$=1.60V; $V_{CC(A)}$=$V_{CC(B)}$=2.3V | -45 | - | - | uA |
| | | | $V_I$=2.00V; $V_{CC(A)}$=$V_{CC(B)}$=3.0V | -100 | - | - | uA |
| bus hold LOW overdrive current | $I_{BHLO}$ | A or B port | $V_{CC(A)}$=$V_{CC(B)}$=1.6V | 125 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=1.95V | 200 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=2.7V | 300 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=3.6V | 500 | - | - | uA |
| bus hold HIGH overdrive current | $I_{BHHO}$ | A or B port | $V_{CC(A)}$=$V_{CC(B)}$=1.6V | -125 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=1.95V | -200 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=2.7V | -300 | - | - | uA |
| | | | $V_{CC(A)}$=$V_{CC(B)}$=3.6V | -500 | - | - | uA |
| OFF-state output current | $I_{OZ}$ | A or B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=$V_{CC(B)}$=3.6V | | - | - | ±30 | uA |
| | | suspend mode A port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | | - | - | ±30 | uA |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | suspend mode B port; $V_O$=0V or $V_{CCO}$; $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | | - | - | ±30 | uA |
| power-off leakage current | $I_{OFF}$ | A port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(A)}$=0V; $V_{CC(B)}$=0.8V to 3.6V | | - | - | ±30 | uA |
| | | B port; $V_I$ or $V_O$=0V to 3.6V; $V_{CC(B)}$=0V; $V_{CC(A)}$=0.8V to 3.6V | | - | - | ±30 | uA |
| supply current | $I_{CC}$ | A port; $V_I$=0V or $V_{CCI}$; $I_O$=0A | $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | - | - | 55 | uA |
| | | | $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | - | - | 50 | uA |
| | | | $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | - | - | 50 | uA |
| | | | $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | -12 | - | - | uA |
| | | B port; $V_I$=0V or $V_{CCI}$; $I_O$=0A | $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | - | - | 55 | uA |
| | | | $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | - | - | 50 | uA |
| | | | $V_{CC(A)}$=3.6V; $V_{CC(B)}$=0V | -12 | - | - | uA |
| | | | $V_{CC(A)}$=0V; $V_{CC(B)}$=3.6V | - | - | 50 | uA |
| | | A plus B port ($I_{CC(A)}$+$I_{CC(B)}$); $I_O$=0A; $V_I$=0V or $V_{CCI}$; $V_{CC(A)}$=0.8V to 3.6V; $V_{CC(B)}$=0.8V to 3.6V | | - | - | 70 | uA |
| | | A plus B port ($I_{CC(A)}$+$I_{CC(B)}$); $I_O$=0A; $V_I$=0V or $V_{CCI}$; $V_{CC(A)}$=1.1V to 3.6V; $V_{CC(B)}$=1.1V to 3.6V | | - | - | 65 | uA |

Note:

[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.

**Typical total supply current ($I_{CC(A)}$+$I_{CC(B)}$)**

| $V_{CC(A)}$ | $V_{CC(B)}$ | | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | 0V | 0.8V | 1.2V | 1.5V | 1.8V | 2.5V | 3.3V | |
| 0V | 0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | uA |
| 0.8V | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 1.6 | uA |
| 1.2V | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.8 | uA |
| 1.5V | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | uA |
| 1.8V | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | uA |
| 2.5V | 0.1 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | uA |
| 3.3V | 0.1 | 1.6 | 0.8 | 0.4 | 0.2 | 0.1 | 0.1 | uA |

### 3.3.4、AC Characteristics 1

($T_{amb}$=25℃, $V_{CC(A)}$=0.8V, voltages are referenced to GND (ground=0V), unless otherwise specified)[1]

| Parameter | Symbol | Conditions | $V_{CC(B)}$ | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.8V | 1.2V | 1.5V | 1.8V | 2.5V | 3.3V | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 14.4 | 7.0 | 6.2 | 6.0 | 5.9 | 6.0 | ns |
| | | Bn to An | 14.4 | 12.4 | 12.1 | 11.9 | 11.8 | 11.8 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | ns |
| | | $\overline{OE}$ to Bn | 17.6 | 10 | 9.0 | 9.1 | 8.7 | 9.3 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | ns |
| | | $\overline{OE}$ to Bn | 22.2 | 11.1 | 9.8 | 9.4 | 9.4 | 9.6 | ns |

### 3.3.5、AC Characteristics 2

($T_{amb}$=25℃, $V_{CC(B)}$=0.8V, voltages are referenced to GND (ground=0V), unless otherwise specified)[1]

| Parameter | Symbol | Conditions | $V_{CC(A)}$ | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | | 0.8V | 1.2V | 1.5V | 1.8V | 2.5V | 3.3V | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 14.4 | 12.4 | 12.1 | 11.9 | 11.8 | 11.8 | ns |
| | | Bn to An | 14.4 | 7.0 | 6.2 | 6.0 | 5.9 | 6.0 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 16.2 | 5.9 | 4.4 | 4.2 | 3.1 | 3.5 | ns |
| | | $\overline{OE}$ to Bn | 17.6 | 14.2 | 13.7 | 13.6 | 13.3 | 13.1 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 21.9 | 6.4 | 4.4 | 3.5 | 2.6 | 2.3 | ns |
| | | $\overline{OE}$ to Bn | 22.2 | 17.7 | 17.2 | 17.0 | 16.8 | 16.7 | ns |

### 3.3.6、AC Characteristics 3

($T_{amb}$=-40℃ to +85℃, voltages are referenced to GND (ground=0V), unless otherwise specified)[1]

| Parameter | Symbol | Conditions | $V_{CC(B)}$ | | | | | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.2V±0.1V | | 1.5V±0.1V | | 1.8V±0.15V | | 2.5V±0.2V | | 3.3V±0.3V | | |
| | | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | |
| **$V_{CC(A)}$=1.1V to 1.3V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 9.0 | 0.5 | 6.7 | 0.5 | 5.8 | 0.5 | 4.9 | 0.5 | 4.8 | ns |
| | | Bn to An | 0.5 | 9.0 | 0.5 | 8.5 | 0.5 | 8.3 | 0.5 | 8.0 | 0.5 | 7.8 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 11.8 | 0.5 | 11.8 | 0.5 | 11.8 | 0.5 | 11.8 | 0.5 | 11.8 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 12.3 | 0.5 | 9.5 | 0.5 | 9.4 | 0.5 | 8.0 | 0.5 | 8.9 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 1.1 | 14.4 | 1.1 | 14.4 | 1.1 | 14.4 | 1.1 | 14.4 | 1.1 | 14.4 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 14.2 | 1.1 | 10.4 | 1.1 | 9.0 | 1.0 | 7.7 | 1.0 | 7.3 | ns |
| **$V_{CC(A)}$=1.4V to 1.6V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 8.5 | 0.5 | 5.6 | 0.5 | 4.7 | 0.5 | 4.4 | 0.5 | 4.1 | ns |
| | | Bn to An | 0.5 | 6.7 | 0.5 | 5.6 | 0.5 | 5.3 | 0.5 | 5.2 | 0.5 | 5.0 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 8.6 | 0.5 | 8.6 | 0.5 | 8.6 | 0.5 | 8.6 | 0.5 | 8.6 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 11.2 | 0.5 | 8.4 | 0.5 | 7.6 | 0.5 | 7.2 | 0.5 | 7.8 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 1.1 | 8.7 | 1.1 | 8.7 | 1.1 | 8.7 | 1.1 | 8.7 | 1.1 | 8.7 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 12.8 | 1.1 | 8.1 | 1.1 | 7.1 | 1.0 | 5.6 | 1.0 | 5.2 | ns |
| **$V_{CC(A)}$=1.65V to 1.95V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 8.3 | 0.5 | 5.3 | 0.5 | 4.5 | 0.5 | 3.8 | 0.5 | 3.5 | ns |
| | | Bn to An | 0.5 | 5.8 | 0.5 | 4.7 | 0.5 | 4.5 | 0.5 | 4.3 | 0.5 | 4.1 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 7.1 | 0.5 | 7.1 | 0.5 | 7.1 | 0.5 | 7.1 | 0.5 | 7.1 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 10.9 | 0.5 | 7.8 | 0.5 | 6.9 | 0.5 | 6.0 | 0.5 | 5.8 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 1.0 | 6.8 | 1.0 | 6.8 | 1.0 | 6.8 | 1.0 | 6.8 | 1.0 | 6.8 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 12.4 | 1.1 | 8.2 | 1.0 | 6.7 | 0.5 | 5.1 | 0.5 | 4.5 | ns |
| **$V_{CC(A)}$=2.3V to 2.7V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 8.0 | 0.5 | 5.2 | 0.5 | 4.3 | 0.5 | 3.3 | 0.5 | 2.9 | ns |
| | | Bn to An | 0.5 | 4.9 | 0.5 | 4.4 | 0.5 | 3.8 | 0.5 | 3.3 | 0.5 | 3.1 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 5.1 | 0.5 | 5.1 | 0.5 | 5.1 | 0.5 | 5.1 | 0.5 | 5.1 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 10.4 | 0.5 | 7.1 | 0.5 | 6.3 | 0.5 | 5.1 | 0.5 | 5.2 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 0.5 | 4.8 | 0.5 | 4.8 | 0.5 | 4.8 | 0.5 | 4.8 | 0.5 | 4.8 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 11.9 | 1.1 | 7.9 | 0.5 | 6.4 | 0.5 | 4.6 | 0.5 | 4.0 | ns |
| **$V_{CC(A)}$=3.0V to 3.6V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 7.8 | 0.5 | 5.6 | 0.5 | 4.1 | 0.5 | 3.1 | 0.5 | 2.7 | ns |
| | | Bn to An | 0.5 | 4.8 | 0.5 | 4.1 | 0.5 | 3.5 | 0.5 | 2.9 | 0.5 | 2.7 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 4.9 | 0.5 | 4.9 | 0.5 | 4.9 | 0.5 | 4.9 | 0.5 | 4.9 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 10.1 | 0.5 | 6.9 | 0.5 | 6.0 | 0.5 | 4.8 | 0.5 | 5.0 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ 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 | 1.1 | 11.7 | 1.1 | 7.8 | 0.5 | 6.2 | 0.5 | 4.5 | 0.5 | 3.9 | ns |

### 3.3.7、AC Characteristics 4

($T_{amb}$=-40℃ to +125℃, voltages are referenced to GND (ground=0V), unless otherwise specified)[1]

| Parameter | Symbol | Conditions | $V_{CC(B)}$ | | | | | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1.2V±0.1V | | 1.5V±0.1V | | 1.8V±0.15V | | 2.5V±0.2V | | 3.3V±0.3V | | |
| | | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | |
| **$V_{CC(A)}$=1.1V to 1.3V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 9.9 | 0.5 | 7.4 | 0.5 | 6.4 | 0.5 | 5.4 | 0.5 | 5.3 | ns |
| | | Bn to An | 0.5 | 9.9 | 0.5 | 9.4 | 0.5 | 9.2 | 0.5 | 8.8 | 0.5 | 8.6 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 13.0 | 0.5 | 13.0 | 0.5 | 13.0 | 0.5 | 13.0 | 0.5 | 13.0 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 13.6 | 0.5 | 10.5 | 0.5 | 10.4 | 0.5 | 8.8 | 0.5 | 9.8 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 1.1 | 15.9 | 1.1 | 15.9 | 1.1 | 15.9 | 1.1 | 15.9 | 1.1 | 15.94 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 15.7 | 1.1 | 11.5 | 1.1 | 9.9 | 1.0 | 8.5 | 1.0 | 8.1 | ns |
| **$V_{CC(A)}$=1.4V to 1.6V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 9.4 | 0.5 | 6.2 | 0.5 | 5.2 | 0.5 | 4.9 | 0.5 | 4.6 | ns |
| | | Bn to An | 0.5 | 7.4 | 0.5 | 6.2 | 0.5 | 5.9 | 0.5 | 5.8 | 0.5 | 5.5 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 9.5 | 0.5 | 9.5 | 0.5 | 9.5 | 0.5 | 9.5 | 0.5 | 9.5 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 12.4 | 0.5 | 9.3 | 0.5 | 8.4 | 0.5 | 8.0 | 0.5 | 8.6 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 1.1 | 9.6 | 1.1 | 9.6 | 1.1 | 9.6 | 1.1 | 9.6 | 1.1 | 9.6 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 14.1 | 1.1 | 9.0 | 1.1 | 7.9 | 1.0 | 6.2 | 1.0 | 5.8 | ns |
| **$V_{CC(A)}$=1.65V to 1.95V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 9.2 | 0.5 | 5.9 | 0.5 | 5.0 | 0.5 | 4.2 | 0.5 | 3.9 | ns |
| | | Bn to An | 0.5 | 6.4 | 0.5 | 5.2 | 0.5 | 5.0 | 0.5 | 4.8 | 0.5 | 4.6 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 7.9 | 0.5 | 7.9 | 0.5 | 7.9 | 0.5 | 7.9 | 0.5 | 7.9 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 12.0 | 0.5 | 8.6 | 0.5 | 7.6 | 0.5 | 6.6 | 0.5 | 6.4 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ 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 | 1.1 | 13.7 | 1.1 | 9.1 | 1.0 | 7.4 | 0.5 | 5.7 | 0.5 | 5.0 | ns |
| **$V_{CC(A)}$=2.3V to 2.7V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 8.8 | 0.5 | 5.8 | 0.5 | 4.8 | 0.5 | 3.7 | 0.5 | 3.2 | ns |
| | | Bn to An | 0.5 | 5.4 | 0.5 | 4.9 | 0.5 | 4.2 | 0.5 | 3.7 | 0.5 | 3.5 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ 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 | 0.5 | 11.5 | 0.5 | 7.9 | 0.5 | 7.0 | 0.5 | 5.7 | 0.5 | 5.8 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 0.5 | 5.3 | 0.5 | 5.3 | 0.5 | 5.3 | 0.5 | 5.3 | 0.5 | 5.3 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 13.1 | 1.1 | 8.7 | 0.5 | 7.1 | 0.5 | 5.1 | 0.5 | 4.4 | ns |
| **$V_{CC(A)}$=3.0V to 3.6V** | | | | | | | | | | | | | |
| propagation delay | $t_{PLH}$, $t_{PHL}$ | An to Bn | 0.5 | 8.6 | 0.5 | 5.5 | 0.5 | 4.6 | 0.5 | 3.5 | 0.5 | 3.0 | ns |
| | | Bn to An | 0.5 | 5.3 | 0.5 | 4.6 | 0.5 | 3.9 | 0.5 | 3.2 | 0.5 | 3.0 | ns |
| disable time | $t_{PLZ}$, $t_{PHZ}$ | $\overline{OE}$ to An | 0.5 | 5.4 | 0.5 | 5.4 | 0.5 | 5.4 | 0.5 | 5.4 | 0.5 | 5.4 | ns |
| | | $\overline{OE}$ to Bn | 0.5 | 11.2 | 0.5 | 7.6 | 0.5 | 6.6 | 0.5 | 5.3 | 0.5 | 5.5 | ns |
| enable time | $t_{PZL}$, $t_{PZH}$ | $\overline{OE}$ to An | 0.5 | 4.4 | 0.5 | 4.4 | 0.5 | 4.4 | 0.5 | 4.4 | 0.5 | 4.4 | ns |
| | | $\overline{OE}$ to Bn | 1.1 | 12.9 | 1.1 | 8.6 | 0.5 | 6.9 | 0.5 | 5.0 | 0.5 | 4.3 | ns |

## 4、Testing Circuit

### 4.1、AC Testing Circuit

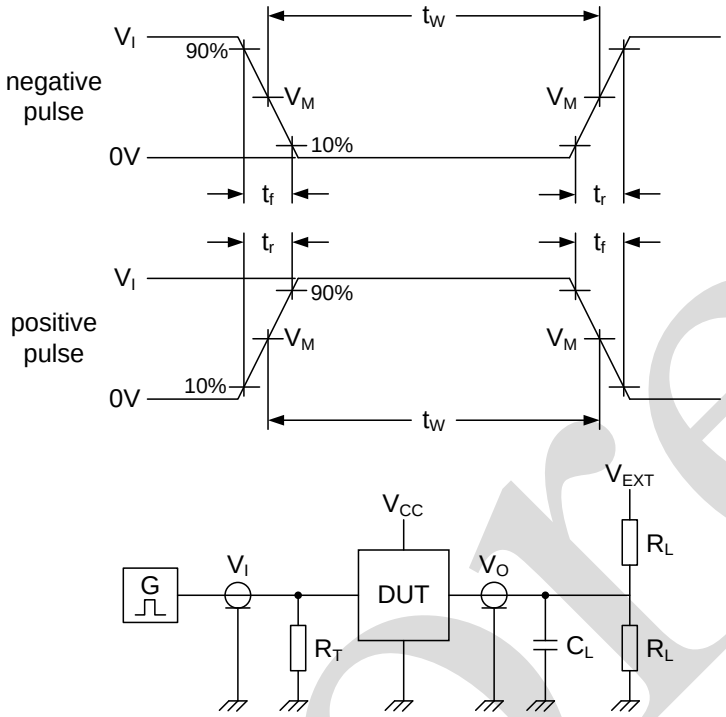



Figure 3. Test circuit for measuring switching times

$R_L$=Load resistance.

$C_L$=Load capacitance including jig and probe capacitance.

$R_T$=Termination resistance.

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

### 4.2、AC Testing Waveforms

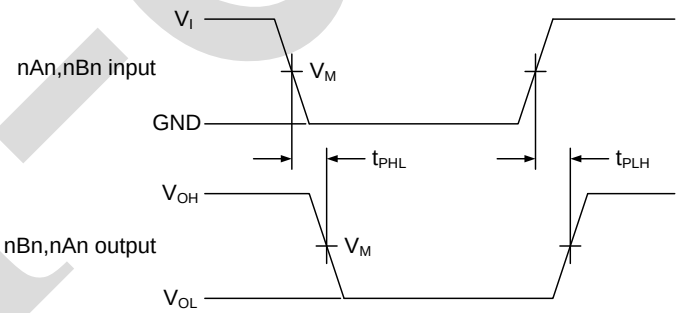



Figure 4. The data input (An, Bn) to output (Bn, An) propagation delay times

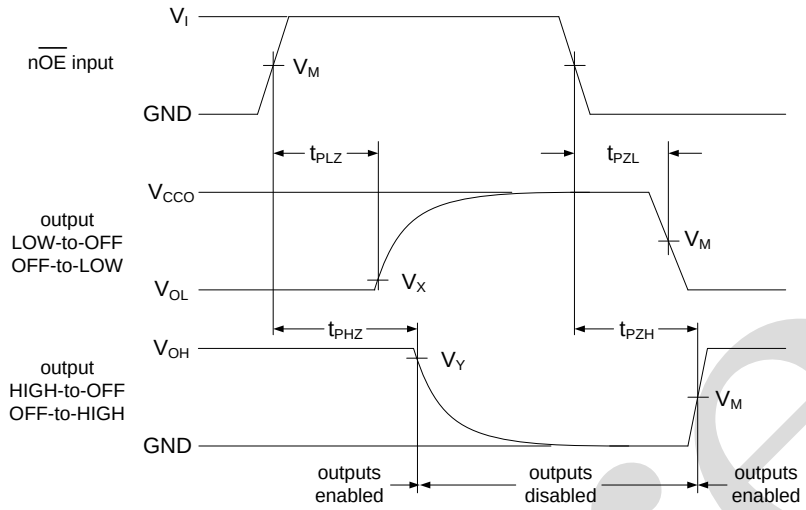



Figure 5. Enable and disable times

### 4.3、Measurement Points

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

Note:

[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.

### 4.4、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] |
| 0.8V to 1.6V | $V_{CCI}$ | ≤1.0ns/V | 15pF | 2kΩ | open | GND | $2V_{CCO}$ |
| 1.65V to 2.7V | $V_{CCI}$ | ≤1.0ns/V | 15pF | 2kΩ | open | GND | $2V_{CCO}$ |
| 3.0V to 3.6V | $V_{CCI}$ | ≤1.0ns/V | 15pF | 2kΩ | open | GND | $2V_{CCO}$ |

Note:

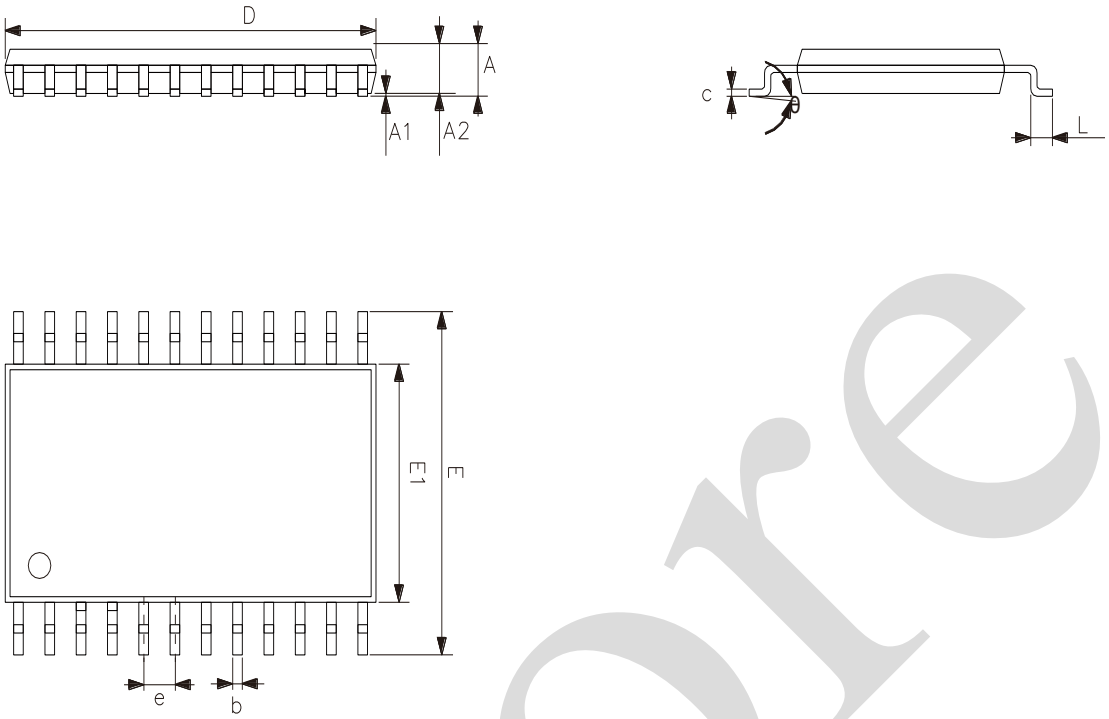
[1] $V_{CCI}$ is the supply voltage associated with the data input port.

[2] dV/dt≥1.0V/ns

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

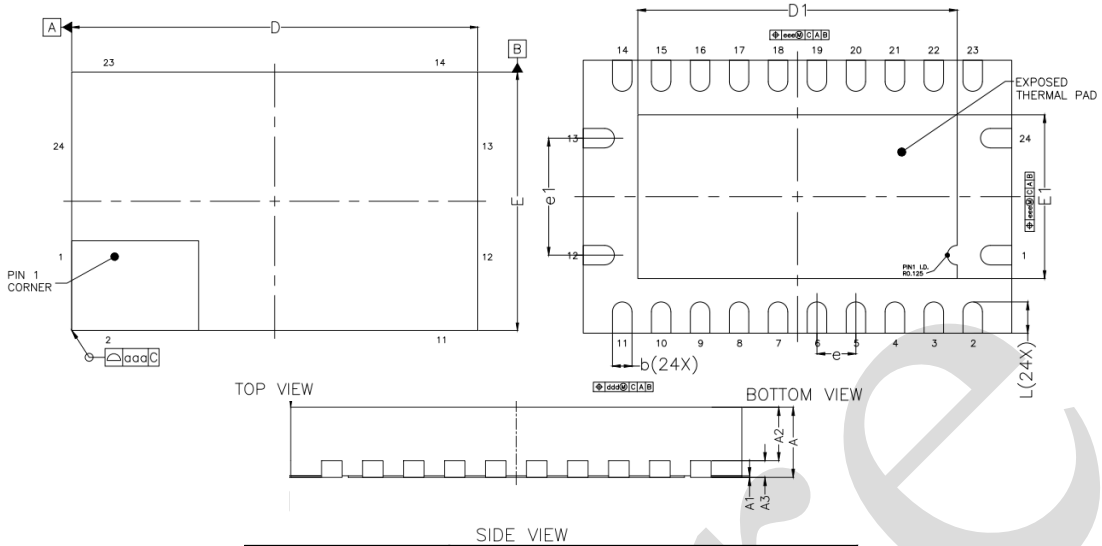
## 5、Package Information

### 5.1、TSSOP24




| 2023/12/A | Dimensions In Millimeters | |
|---|---|---|
| Symbol | Min | Max |
| A | — | 1.20 |
| A1 | 0.05 | 0.15 |
| A2 | 0.80 | 1.05 |
| b | 0.19 | 0.30 |
| c | 0.09 | 0.20 |
| D | 7.70 | 7.90 |
| E | 6.20 | 6.60 |
| E1 | 4.30 | 4.50 |
| e | 0.65 | |
| L | 0.45 | 0.75 |
| θ | 0° | 8° |

## 5.2、DHVQFN24




| 2023/12/A | Dimensions In Millimeters | |
|---|---|---|
| **Symbol** | **Min** | **Max** |
| A | 0.80 | 1.00 |
| A1 | 0.00 | 0.05 |
| A2 | 0.60 | 0.70 |
| A3 | 0.20 | |
| D | 5.40 | 5.60 |
| E | 3.40 | 3.60 |
| e | 0.50 | |
| e1 | 1.50 | |
| b | 0.18 | 0.30 |
| L | 0.30 | 0.50 |
| D1 | 3.95 | 4.25 |
| E1 | 1.95 | 2.25 |

## 6、Statements And Notes

### 6.1、The name and content of Hazardous substances or Elements in the product

| Part name | Hazardous substances or Elements | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Lead and lead compounds | Mercury and mercury compounds | Cadmium and cadmium compounds | Hexavalent chromium compounds | Polybrominated biphenyls | Polybrominated biphenyl ethers | Dibutyl phthalate | Butylbenzyl phthalate | Di-2-ethylhexyl phthalate | Diisobutyl phthalate |
| Lead frame | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Plastic resin | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Chip | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The lead | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Plastic sheet installed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| explanation | ○: Indicates that the content of hazardous substances or elements in the detection limit of the following the SJ/T11363-2006 standard.<br>×: Indicates that the content of hazardous substances or elements exceeding the SJ/T11363-2006 Standard limit requirements. | | | | | | | | | |

### 6.2、Notes

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