AiP74LVCC3245
Octal Bus Transceiver With Adjustable Output Voltage and 3-State Outputs

Product Specification

Specification Revision History:

Version	Date	Description
2021-03-A0	2021-03	New
2023-12-A1	2023-12	Parameter modification

Contents

1、General Description

The AiP74LVCC3245 provides 8-bit noninverting bus transceiver contains two separate supply rails. The B port is designed to track V_{CCB}, which accepts voltage from 3V to 5.5V, and the A port is designed to track V_{CCA}, which operates at 2.3V to 3.6V.

This allows for translation from a 3.3V to a 5V system environment and vice versa, from a 2.5V to 3.3V system environment and vice versa.

Features:

- Bidirectional Voltage Translator
- 2.3 V to 3.6 V on A Port and 3 V to 5.5 V on B Port
- Control Inputs V_{IH} and V_{IL} Levels Are Referenced to V_{CCA} Voltage
- Temperature range:-40℃ to +125℃
- Packaging information:SOP24/SSOP24/TSSOP24/ DHVQFN24

Ordering Information:

Tube packing specifications:

Part number	Packaging form	Marking code	Tube quantity	Boxed tube quantity	Boxed quantity	Notes
AiP74LVCC3245 SA24.TB	SOP24	74LVCC3245	30 PCS/tube	80 tube/box	2400 PCS/box	Dimensions of plastic enclosure: 15.4mm×7.5mm Pin spacing: 1.27mm
AiP74 LVCC3245 VB24.TB	SSOP24	74LVCC3245	50 PCS/tube	200 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 0.635mm
AiP74 LVCC3245 TA24.TB	TSSOP24	74LVCC3245	62 PCS/tube	200 tube/box	12400 PCS/box	Dimensions of plastic enclosure: 7.8mm×4.4mm Pin spacing: 0.65mm

Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
AiP74LVCC3245 SA24.TR	SOP24	74LVCC3245	1250PCS/reel	1250PCS/box	Dimensions of plastic enclosure: 15.4mm×7.5mm Pin spacing: 1.27mm
AiP74LVCC3245 VB24.TR	SSOP24	74LVCC3245	4000PCS/reel	8000PCS/box	Dimensions of plastic enclosure: 8.7mm×3.9mm Pin spacing: 0.635mm
AiP74LVCC3245 TA24.TR	TSSOP24	74LVCC3245	4000PCS/reel	8000PCS/box	Dimensions of plastic enclosure: 7.8mm×4.4mm Pin spacing: 0.65mm
AiP74LVCC3245 QE24.TR	DHVQFN24	74LVCC3245	3000PCS/reel	3000PCS/box	Dimensions of plastic enclosure: 5.5mm×3.5mm Pin spacing: 0.5mm

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

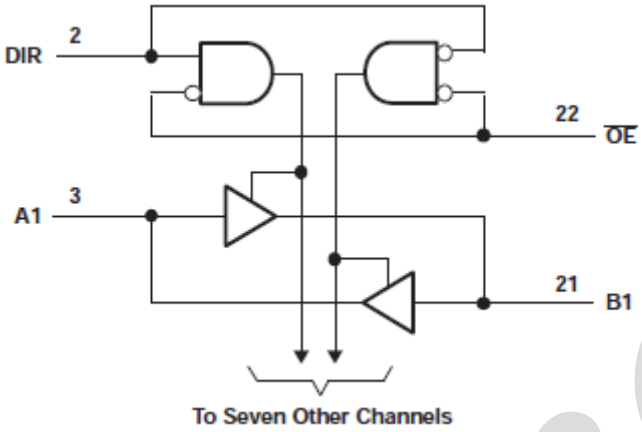
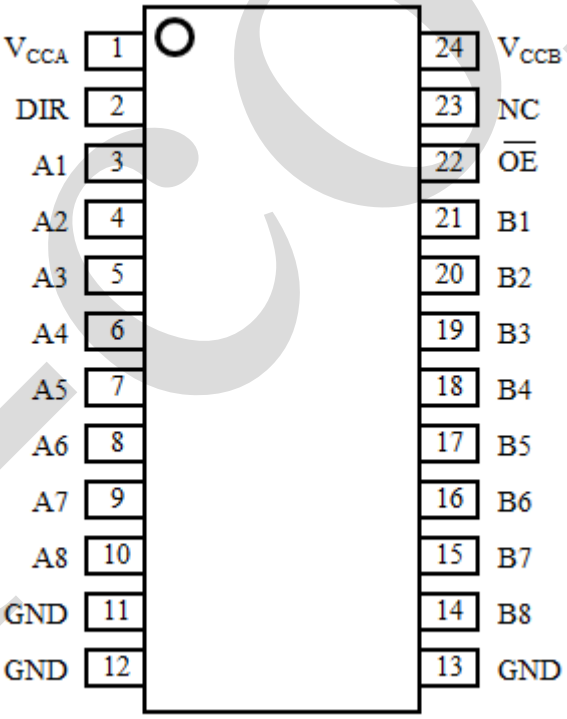


Figure 1. Logic diagram

2.2、Pin Configurations



2.3、Pin Description

Pin No.	Pin Name	Description
1	V_{CCA}	A port power
2	DIR	Dir input
3	A1	A1 port
4	A2	A2 port
5	A3	A3 port
6	A4	A4 port
7	A5	A5 port
8	A6	A6 port
9	A7	A7 port
10	A8	A8 port
11	GND	Ground
12	GND	Ground
13	GND	Ground
14	B8	B8 port
15	B7	B7 port
16	B6	B6 port
17	B5	B5 port
18	B4	B4 port
19	B3	B3 port
20	B2	B2 port
21	B1	B1 port
22	$\overline{OE}$	Output Enable active low
23	NC	Unconnected
24	V_{CCB}	B port power

2.4、Function Table

Input		Operation
$\overline{OE}$	DIR	
L	L	B data to A bus
L	H	A data to B bus
H	X	isolation

Note: H=HIGH voltage level; L=LOW voltage level;X=don't care.

3、Electrical Parameter

3.1、Absolute Maximum Ratings

(T_{amb}=25℃, All voltage referenced to GND, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Max.	Unit
supply voltage	V_{CCA}	-	-0.5	+6.5	V
	V_{CCB}				
input voltage	V_I	All A port	-0.5	V_{CCA}+0.5	V

		All B port	-0.5	V_{CCB}+0.5	
		Except I/O ports	-0.5	V_{CCA}+0.5	
output voltage	V_O	All A port	-0.5	V_{CCA}+0.5	V
		All B port	-0.5	V_{CCB}+0.5	
input clamping current	I_{IK}	V_I < 0V	-	-50	mA
output current	I_O	-	-	±50	mA
output clamping current	I_{OK}	V_O < 0V	-	-50	mA
storage temperature	T_{stg}	-	-65	+150	℃
Soldering temperature	T_L	10s	260		℃

3.2、Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
supply voltage	V_{CCA}	-	2.3	3.3	3.6	V
	V_{CCB}	-	3	5	5.5	
ambient temperature	T_{amb}	-	-40	-	+125	℃

3.3、Electrical Characteristics

3.3.1、DC Characteristics 1

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

Parameter	Symbol	V_{CCA}	V_{CCB}	Conditions	Min.	Typ.	Max.	Unit
High-level input voltage	V_{IHA}	2.3V	3V	-	1.7	-	-	V
		2.7V	3V	-	2.0	-	-	V
		3V	3.6V	-	2.0	-	-	V
		3.6V	5.5V	-	2.0	-	-	V
	V_{IHB}	2.3V	3V	-	2.0	-	-	V
		2.7V	3V	-	2.0	-	-	V
		3V	3.6V	-	2.0	-	-	V
		3.6V	5.5V	-	3.85	-	-	V
High-level input voltage (control terminals) (referenced to V_{CCA})	V_{IH}	2.3V	3V	-	1.7	-	-	V
		2.7V	3V	-	2.0	-	-	V
		3V	3.6V	-	2.0	-	-	V
		3.6V	5.5V	-	2.0	-	-	V
Low-level input voltage	V_{ILA}	2.3V	3V	-	-	-	0.7	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	0.8	V
	V_{ILB}	2.3V	3V	-	-	-	0.8	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	1.65	V
Low-level input voltage (control terminals) (referenced to V_{CCA})	V_{IL}	2.3V	3V	-	-	-	0.7	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	0.8	V
HIGH-level output voltage	V_{OHA}	3V	3V	I_{OH}=-100uA	2.9	3	-	V
		2.3V	3V	I_O=-8mA	2.0	-	-	V
		2.7V	3V	I_O=-12mA	2.2	2.5	-	V
		3V	3V		2.4	2.8	-	V
		3V	3V	I_O=-24mA	2.2	2.6	-	V
		2.7V	4.5V		2.0	2.3	-	V
	V_{OHB}	3V	3V	I_{OH}=-100uA	2.9	3.0	-	V
		2.3V	3V	I_O=-12mA	2.4	-	-	V
		2.7V	3V		2.4	2.8	-	V
		3V	3V	I_O=-24mA	2.2	2.6	-	V
		2.7V	4.5V		3.2	4.2	-	V
LOW-level output voltage	V_{OLA}	3V	3V	I_{OH}=100uA	-	-	0.1	V
		2.3V	3V	I_O=8mA	-	-	0.6	V
		2.7V	3V	I_O=12mA	-	-	0.5	V
		3V	3V		-	0.1	0.5	V
		3V	3V	I_O=24mA	-	0.2	0.5	V

		2.7V	4.5V		-	0.2	0.5	V
	V_{OLB}	3V	3V	I_{OH}=100uA	-	-	0.1	V
		2.3V	3V	I_O=12mA	-	-	0.4	V
		3V	3V	I_O=24mA	-	0.2	0.5	V
		2.7V	4.5V		-	0.2	0.5	V
High-level output current	I_{OHA}	2.3V	3V	-	-		-8	mA
		2.7V	3V	-	-		-12	mA
		3V	3V	-	-		-24	mA
		2.7V	4.5V	-	-		-24	mA
	I_{OHB}	2.3V	3V	-	-		-12	mA
		2.7V	3V	-	-		-12	mA
		3V	3V	-	-		-24	mA
		2.7V	4.5V	-	-		-24	mA
LOW-level output current	I_{OLA}	2.3V	3V	-	-		8	mA
		2.7V	3V	-	-		12	mA
		3V	3V	-	-		24	mA
		2.7V	4.5V	-	-		24	mA
	I_{OLB}	2.3V	3V	-	-		12	mA
		2.7V	3V	-	-		12	mA
		3V	3V	-	-		24	mA
		2.7V	4.5V	-	-		24	mA
input leakage current	I_I	3.6	3.6	-	-	-	±1	uA
			5.5		-	-	±1	uA
OFF-state output current	Ioz	3.6V	3.6V	V_O = $V_{CCA/B}$ or GND	-	-	±5	uA
supply current	I_{CCA}	3.6V	Open	A port = V_{CCA} or GND; I_O=0A;	-	5	50	uA
		3.6V	3.6V	B port = V_{CCB} or GND; I_O=0A;	-	5	50	uA
			5.5V		-	5	50	uA
	I_{CCB}	3.6V	3.6V	A port = V_{CCA} or GND; I_O=0A;	-	5	50	uA
			5.5V		-	8	80	uA
additional supply current	ΔI_{CCA}	3.6V	3.6V	A port V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND, $\overline{OE}$ at GND and DIR at V_{CCA}	-	0.35	0.5	mA
		3.6V	3.6V	$\overline{OE}$ V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND DIR at V_{CCA}	-	0.35	0.5	mA
		3.6V	3.6V	DIR V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND	-	0.35	0.5	mA

				$\overline{OE}$ at GND				
	ΔI_{CCB}	3.6V	5.5V	B port: $V_I=V_{CCB}$-2.1V; Other inputs at V_{CCB} or GND, $\overline{OE}$ at GND and DIR at GND	-	1	1.5	mA

Note: Typical values are measured at Tamb=25℃.

3.3.2、DC Characteristics 2

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

Parameter	Symbol	V_{CCA}	V_{CCB}	Conditions	Min.	Typ.	Max.	Unit
High-level input voltage	V_{IHA}	2.3V	3V	-	1.7	-	-	V
		2.7V	3V	-	2.0	-	-	V
		3V	3.6V	-	2.0	-	-	V
		3.6V	5.5V	-	2.0	-	-	V
	V_{IHB}	2.3V	3V	-	2.0	-	-	V
		2.7V	3V	-	2.0	-	-	V
		3V	3.6V	-	2.0	-	-	V
		3.6V	5.5V	-	3.85	-	-	V
High-level input voltage (control terminals) (referenced to V_{CCA})	V_{IH}	2.3V	3V	-	1.7	-		V
		2.7V	3V	-	2.0	-		V
		3V	3.6V	-	2.0	-		V
		3.6V	5.5V	-	2.0	-	-	V
Low-level input voltage	V_{ILA}	2.3V	3V	-	-	-	0.7	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	0.8	V
	V_{ILB}	2.3V	3V	-	-	-	0.8	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	1.65	V
Low-level input voltage (control terminals) (referenced to V_{CCA})	V_{IL}	2.3V	3V	-	-	-	0.7	V
		2.7V	3V	-	-	-	0.8	V
		3V	3.6V	-	-	-	0.8	V
		3.6V	5.5V	-	-	-	0.8	V
HIGH-level output voltage	V_{OHA}	3V	3V	I_{OH}=-100uA	2.9	3	-	V
		2.3V	3V	I_O=-8mA	2.0	-	-	V
		2.7V	3V	I_O=-12mA	2.2	2.5	-	V
		3V	3V		2.4	2.8	-	V
		3V	3V	I_O=-24mA	2.2	2.6	-	V
		2.7V	4.5V		2.0	2.3	-	V
	V_{OHB}	3V	3V	I_{OH}=-100uA	2.9	3.0	-	V
		2.3V	3V	I_O=-12mA	2.4	-	-	V
		2.7V	3V		2.4	2.8	-	V
		3V	3V	I_O=-24mA	2.2	2.6	-	V
		2.7V	4.5V		2	2.3	-	V
LOW-level output voltage	V_{OLA}	3V	3V	I_{OH}=100uA	-	-	0.1	V
		2.3V	3V	I_O=8mA	-	-	0.6	V
		2.7V	3V	I_O=12mA	-	-	0.5	V
		3V	3V		-	0.1	0.5	V
		3V	3V	I_O=24mA	-	0.2	0.5	V
		2.7V	4.5V		-	0.2	0.5	V

	V_{OLB}	3V	3V	I_{OH}=100uA	-	-	0.1	V
		2.3V	3V	I_O=12mA	-	-	0.4	V
		3V	3V	I_O=24mA	-	0.2	0.5	V
		2.7V	4.5V		-	0.2	0.5	V
High-level output current	I_{OHA}	2.3V	3V	-	-		-8	mA
		2.7V	3V	-	-		-12	mA
		3V	3V	-	-		-24	mA
		2.7V	4.5V	-	-		-24	mA
	I_{OHB}	2.3V	3V	-	-		-12	mA
		2.7V	3V	-	-		-12	mA
		3V	3V	-	-		-24	mA
		2.7V	4.5V	-	-		-24	mA
LOW-level output current	I_{OLA}	2.3V	3V	-	-		8	mA
		2.7V	3V	-	-		12	mA
		3V	3V	-	-		24	mA
		2.7V	4.5V	-	-		24	mA
	I_{OLB}	2.3V	3V	-	-		12	mA
		2.7V	3V	-	-		12	mA
		3V	3V	-	-		24	mA
		2.7V	4.5V	-	-		24	mA
input leakage current	I_I	3.6	3.6	-	-	-	±1	uA
			5.5		-	-	±1	uA
OFF-state output current	Ioz	3.6V	3.6V	V_O = $V_{CCA/B}$ or GND	-	-	±5	uA
supply current	I_{CCA}	3.6V	Open	A port = V_{CCA} or GND; I_O=0A;	-	5	50	uA
		3.6V	3.6V	B port = V_{CCB} or GND; I_O=0A;	-	5	50	uA
			5.5V		-	5	50	uA
	I_{CCB}	3.6V	3.6V	A port = V_{CCA} or GND; I_O=0A;	-	5	50	uA
			5.5V		-	8	80	uA
additional supply current	ΔI_{CCA}	3.6V	3.6V	A port: V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND, $\overline{OE}$ at GND and DIR at V_{CCA}	-	0.35	0.5	mA
		3.6V	3.6V	$\overline{OE}$ V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND DIR at V_{CCA}	-	0.35	0.5	mA
		3.6V	3.6V	DIR V_I=V_{CCA}-0.6V; Other inputs at V_{CCA} or GND $\overline{OE}$ at GND	-	0.35	0.5	mA

	ΔI_{CCB}	3.6V	5.5V	B port: $V_I=V_{CCB}$-2.1V; Other inputs at V_{CCB} or GND, $\overline{OE}$ at GND and DIR at GND	-	1	1.5	mA

3.3.3、AC Characteristics 1

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

Parameter	Symbol	V_{CCA}	V_{CCB}	Conditions	Min.	Typ.	Max.	Unit
A to B propagation delay	t_{PLH}, t_{PHL}	2.5V ± 0.2 V	3.3V ±0.3 V	see Figure 3	1.0	-	9.4	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	6	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	7.1	ns
B to A propagation delay		2.5V ± 0.2 V	3.3V ±0.3 V		1.0	-	11.2	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	7.0	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	7.6	ns
$n\overline{OE}$ to A enable time	t_{PZH}, t_{PZL}	2.5V ± 0.2 V	3.3V ±0.3 V	see Figure 4	1.0	-	14.5	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	9.5	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	9.7	ns
$n\overline{OE}$ to B enable time		2.5V ± 0.2 V	3.3V ±0.3 V		1.0	-	13.0	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	8.4	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	9.9	ns
$n\overline{OE}$ to A disable time	t_{PHZ}, t_{PLZ}	2.5V ± 0.2 V	3.3V ±0.3 V		1.0	-	7.1	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	7.8	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	6.9	ns
$n\overline{OE}$ to B disable time		2.5V ± 0.2 V	3.3V ±0.3 V		1.0	-	8.9	ns
		2.7V to 3.6V	5V ±0.5 V		1.0	-	7.3	ns
		2.7V to 3.6V	3.3 V ±0.3 V		1.0	-	7.9	ns

3.3.4、AC Characteristics 2

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

Parameter	Symbol	V_{CCA}	V_{CCB}	Conditions	Min.	Typ.	Max.	Unit
A to B propagation delay	t_{PLH}, t_{PHL}	2.5V ± 0.2 V	3.3V ±0.3 V	see Figure 3	-	-	11.3	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	7.2	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	8.5	ns
B to A propagation delay		2.5V ± 0.2 V	3.3V ±0.3 V		-	-	13.4	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	8.4	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	9.1	ns
$\overline{nOE}$ to A enable time	t_{PZH}, t_{PZL}	2.5V ± 0.2 V	3.3V ±0.3 V	see Figure 4	-	-	17.4	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	11.4	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	11.6	ns
$\overline{nOE}$ to B enable time		2.5V ± 0.2 V	3.3V ±0.3 V		-	-	15.6	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	10.0	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	11.9	ns
$\overline{nOE}$ to A disable time	t_{PHZ}, t_{PLZ}	2.5V ± 0.2 V	3.3V ±0.3 V		-	-	8.5	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	9.4	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	8.3	ns
$\overline{nOE}$ to B disable time		2.5V ± 0.2 V	3.3V ±0.3 V		-	-	10.7	ns
		2.7V to 3.6V	5V ±0.5 V		-	-	8.8	ns
		2.7V to 3.6V	3.3 V ±0.3 V		-	-	9.5	ns

4、Testing Circuit

4.1、AC Testing Circuit

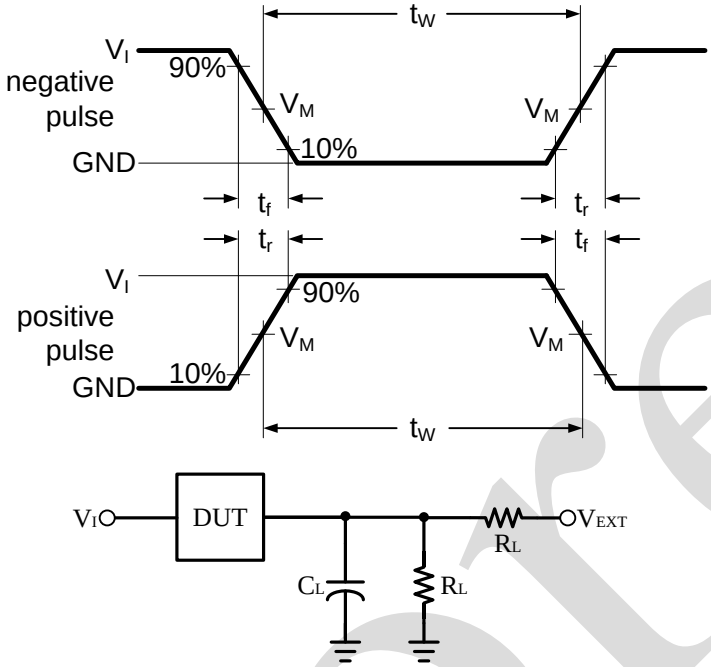


Figure 2. Load circuit

C_L includes probe and jig capacitance.

R_L=Load resistance.

4.2、Test Data

Supply voltage		Input			Load		V_{EXT}		
V_{CCA}	V_{CCB}	Port	V_I	$t_r = t_f$	C_L	R_L	t_{PLH}/t_{PHL}	t_{PLZ}/t_{PZL}	t_{PHZ}/t_{PZH}
2.5V ±0.2 V	3.3V ±0.3 V	A port	V_{CCA}	≤3ns	30pF	500Ω	Open	2×V_{CC}	GND
2.5V ±0.2 V	3.3V ±0.3 V	B port	V_{CCB}	≤3ns	30pF	500Ω	Open	2×V_{CC}	GND
3.6V	5.5 V	B port	V_{CCB}	≤3ns	30pF	500Ω	Open	2×V_{CC}	Open
3.6V	3.6V	A and B port	$V_{CCA/B}$	≤3ns	30pF	500Ω	Open	7V	Open

4.3、AC Testing Waveforms

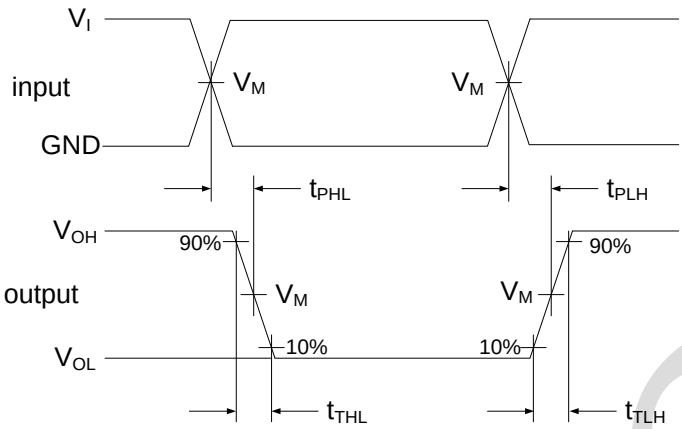


Figure 3. The data input (A/B) to output (B/A) propagation delays

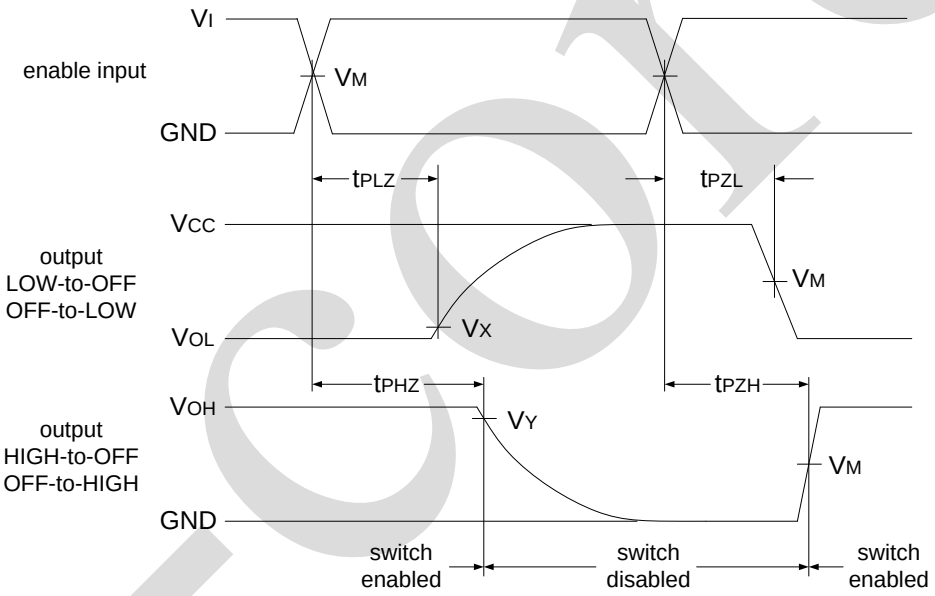


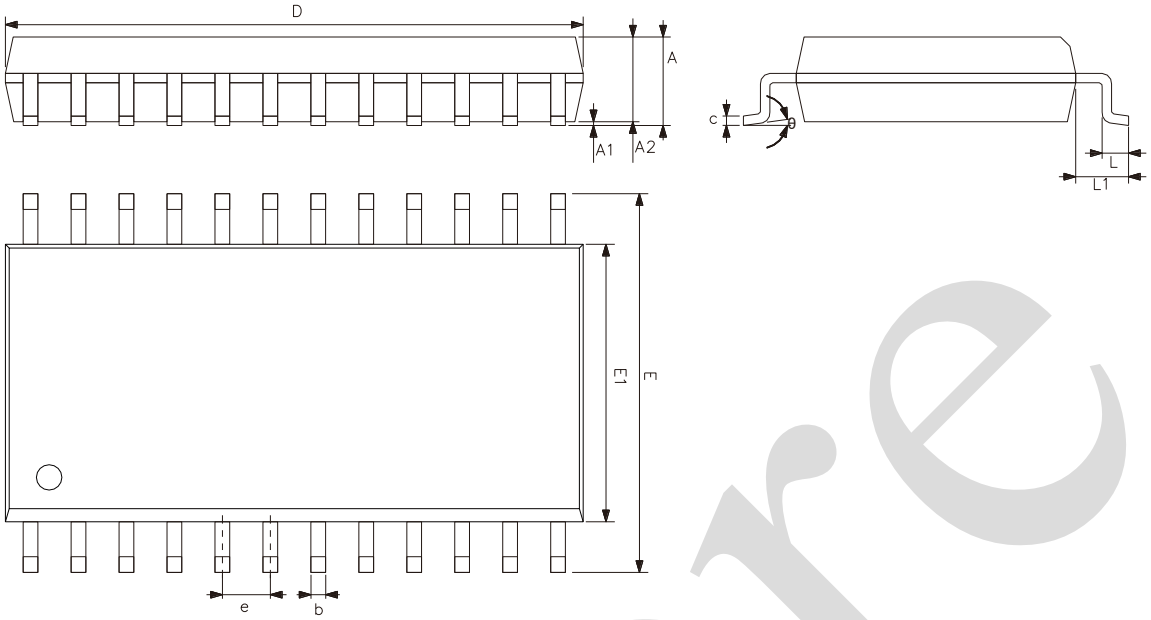
Figure 4. 3-state enable and disable times

4.4、Measurement Points

Supply voltage		Input	Output		
V_{CCA}	V_{CCB}	V_M	V_M	V_X	V_Y
2.5V ±0.2 V	3.3V ±0.3 V	0.5×V_{CC}	0.5×V_{CC}	V_{OL}+0.3V	V_{OH}-0.3V
2.5V ±0.2 V	3.3V ±0.3 V	0.5×V_{CC}	0.5×V_{CC}	V_{OL}+0.3V	V_{OH}-0.3V
3.6V	5.5 V	0.5×V_{CC}	0.5×V_{CC}	V_{OL}+0.3V	V_{OH}-0.3V
3.6V	3.6V	0.5×V_{CC}	0.5×V_{CC}	V_{OL}+0.3V	V_{OH}-0.3V

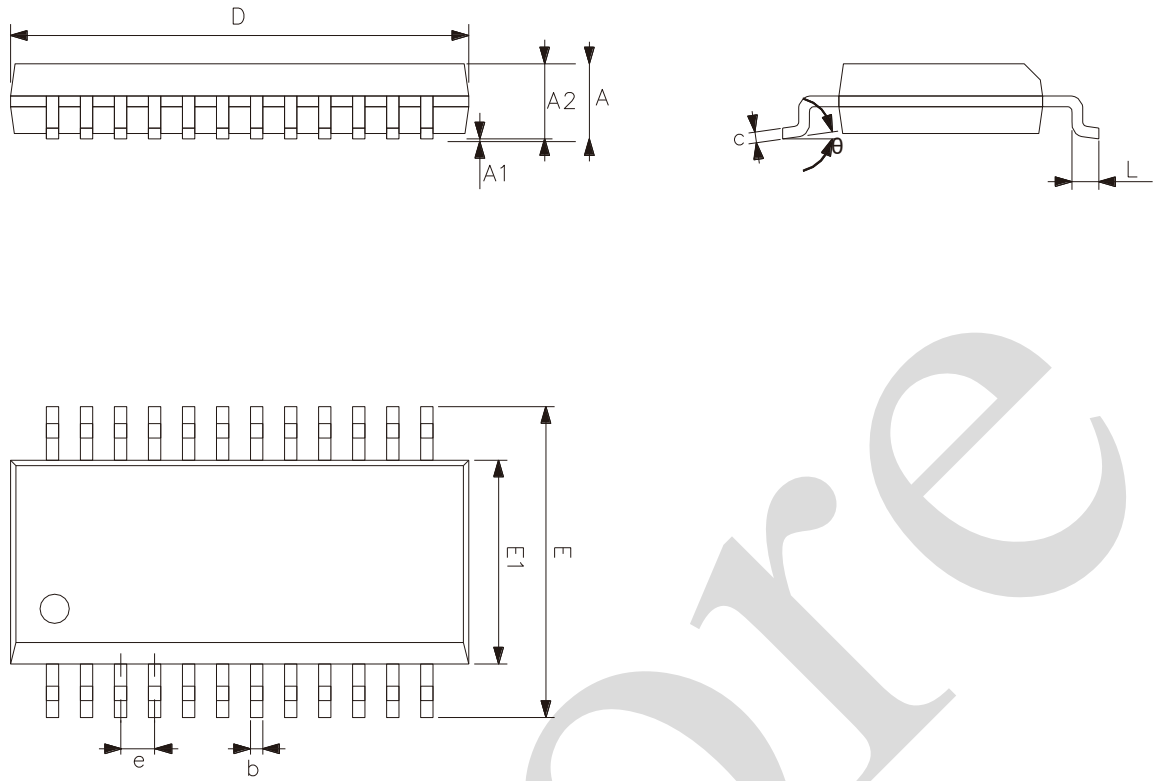
5、Package Information

5.1、SOP24



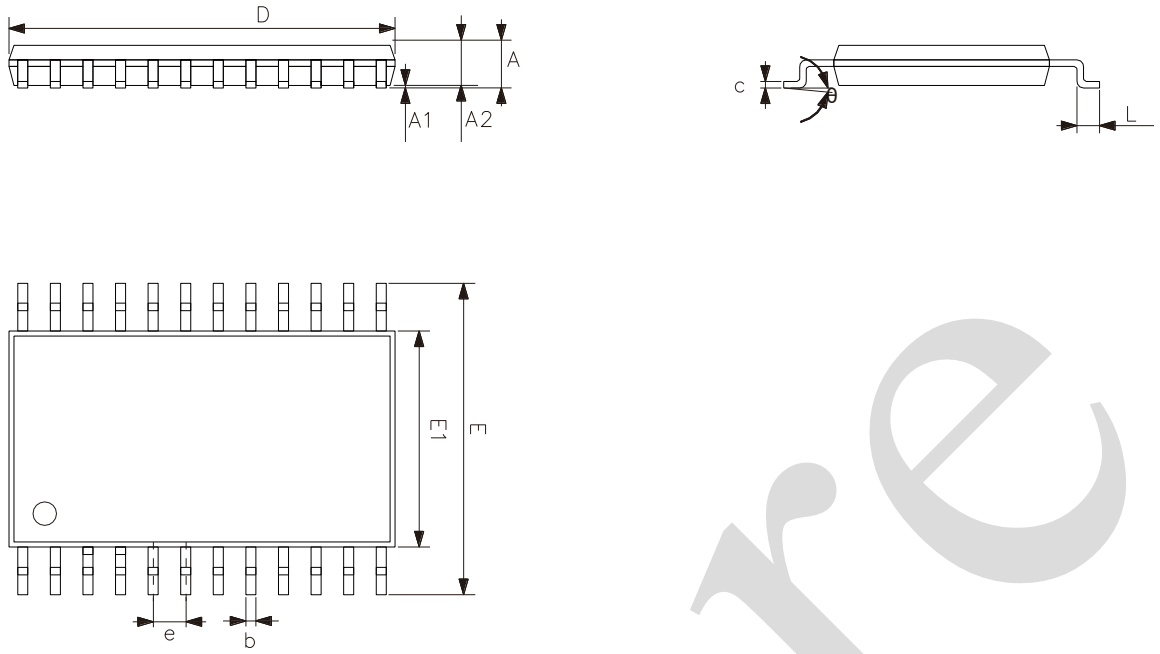
Symbol	Dimensions (mm)	
	Min.	Max.
A	2.35	2.65
A1	0.10	0.30
A2	2.13	2.44
b	0.39	0.47
c	0.25	0.30
D	15.19	15.55
E	10.10	10.57
E1	7.40	7.62
e	1.27	
L	0.41	1.00
L1	1.30	1.50
θ	0°	8°

5.2、SSOP24



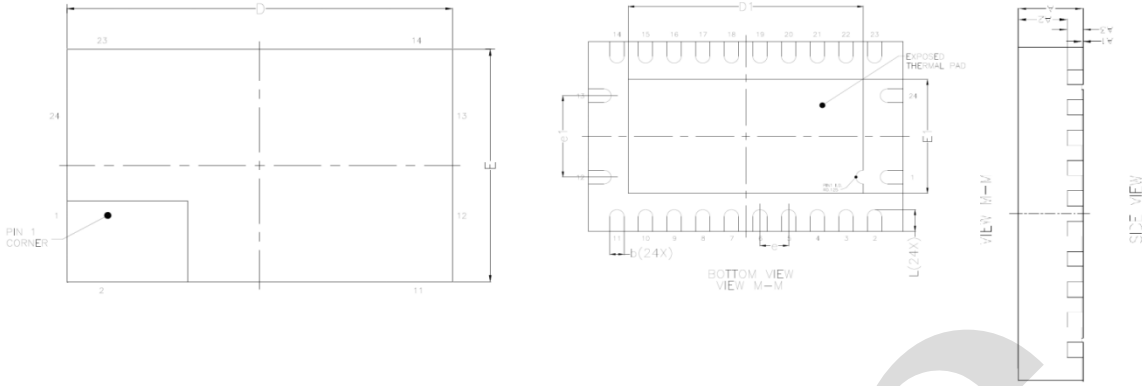
Symbol	Dimensions (mm)	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.30	1.55
b	0.23	0.47
c	0.19	0.26
D	8.45	8.85
E	5.80	6.20
E1	3.70	4.10
e	0.635	
L	0.40	0.80
θ	0°	8°

5.3、TSSOP24



Symbol	Dimensions (mm)	
	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°

5.4、DHVQFN24



Symbol	Dimensions (mm)	
	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. ×：Indicates that the content of hazardous substances or elements exceeding the SJ/T11363-2006 Standard limit requirements.									

6.2、Notes

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