AiP74HC/HCT367
Hex Buffer/Line Driver; 3-state

Product Specification

Specification Revision History:

Version	Date	Description
2012-06-A1	2012-06	New
2023-04-B1	2023-04	Update the template

Contents

1、General Description

The AiP74HC/HCT367 is a hex buffer/line driver with 3-state outputs controlled by the output enable inputs ($n\overline{OE}$). A HIGH on $n\overline{OE}$ causes the outputs to assume a high impedance OFF-state. Inputs include clamp diodes. This enables the use of current limiting resistors to interface inputs to voltages in excess of V_{CC}.

Features:

- Input levels:
  For AiP74HC367: CMOS level
  For AiP74HCT367: TTL level
- 3-state outputs
- Specified from -40℃ to +125℃
- Packaging information: DIP16/SOP16/TSSOP16

Ordering Information:

Tube packing specifications:

Part number	Packaging form	Marking code	Tube quantity	Boxed tube quantity	Boxed quantity	Notes
AiP74HC367DA16.TB	DIP16	74HC367	25 PCS/tube	40 tube/box	1000 PCS/box	Dimensions of plastic enclosure: 19.0mm×6.4mm Pin spacing: 2.54mm
AiP74HCT367DA16.TB	DIP16	74HCT367	25 PCS/tube	40 tube/box	1000 PCS/box	Dimensions of plastic enclosure: 19.0mm×6.4mm Pin spacing: 2.54mm
AiP74HC367SA16.TB	SOP16	74HC367	50 PCS/tube	200 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 10.0mm×3.9mm Pin spacing: 1.27mm
AiP74HCT367SA16.TB	SOP16	74HCT367	50 PCS/tube	200 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 10.0mm×3.9mm Pin spacing: 1.27mm
AiP74HC367TA16.TB	TSSOP16	74HC367	96 PCS/tube	200 tube/box	19200 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm
AiP74HCT367TA16.TB	TSSOP16	74HCT367	96 PCS/tube	200 tube/box	19200 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing: 0.65mm

Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
AiP74HC367SA16.TR	SOP16	74HC367	4000 PCS/reel	8000 PCS/box	Dimensions of plastic enclosure: 10.0mm×3.9mm Pin spacing:1.27mm
AiP74HCT367SA16.TR	SOP16	74HCT367	4000 PCS/reel	8000 PCS/box	Dimensions of plastic enclosure: 10.0mm×3.9mm Pin spacing:1.27mm
AiP74HC367TA16.TR	TSSOP16	74HC367	5000 PCS/reel	10000 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing:0.65mm
AiP74HCT367TA16.TR	TSSOP16	74HCT367	5000 PCS/reel	10000 PCS/box	Dimensions of plastic enclosure: 5.0mm×4.4mm Pin spacing:0.65mm

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

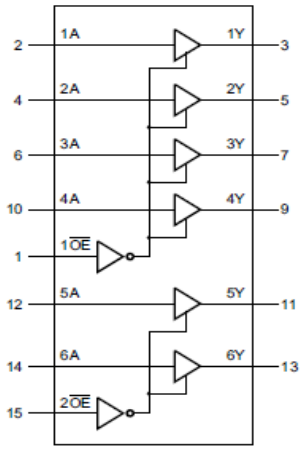


Figure 1. Logic symbol

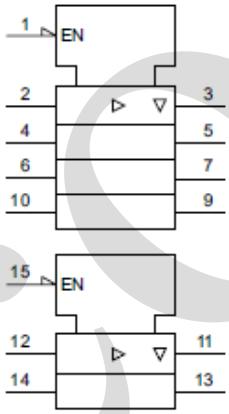


Figure 2. IEC logic symbol

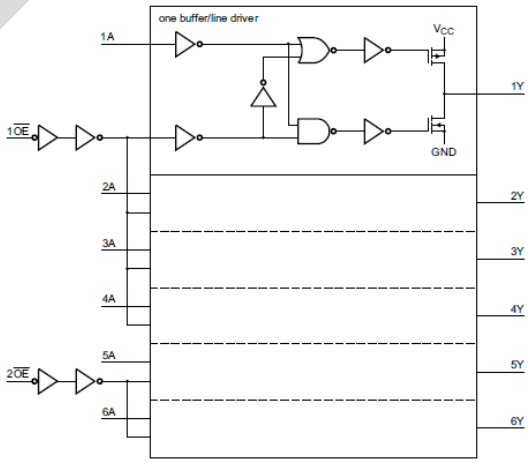
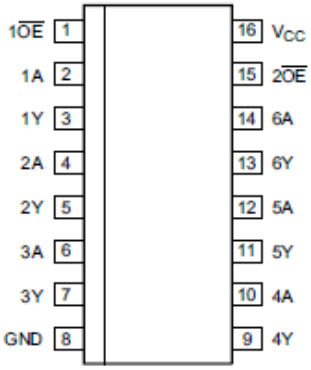


Figure 3. Logic diagram

2.2、Pin Configurations



2.3、Pin Description

Pin No.	Pin Name	Description
1	1$\overline{OE}$	output enable input 1 (active LOW)
2	1A	data input 1
3	1Y	data output 1
4	2A	data input 2
5	2Y	data output 2
6	3A	data input 3
7	3Y	data output 3
8	GND	ground (0V)
9	4Y	data output 4
10	4A	data input 4
11	5Y	data output 5
12	5A	data input 5
13	6Y	data output 6
14	6A	data input 6
15	2$\overline{OE}$	output enable input 2 (active LOW)
16	V_{CC}	supply voltage

2.4、Function Table

Input		Output
n$\overline{OE}$	**nA**	**nY**
L	L	L
L	H	H
H	X	Z

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

3、Electrical Parameter

3.1、Absolute Maximum Ratings

(Voltages are referenced to GND(ground=0V), unless otherwise specified.)

Parameter	Symbol	Conditions		Min.	Max.	Unit
supply voltage	V_{CC}	-		-0.5	+7.0	V
input clamping current	I_{IK}	V_I < -0.5V or V_I > V_{CC}+0.5V		-	±20	mA
output clamping current	I_{OK}	V_O < -0.5V or V_O > V_{CC}+0.5V		-	±20	mA
output current	I_O	-0.5V < V_O < V_{CC}+0.5V		-	±35	mA
supply current	I_{CC}	-		-	70	mA
ground current	I_{GND}	-		-70	-	mA
storage temperature	T_{stg}	-		-65	+150	℃
total power dissipation	P_{tot}	-		-	500	mW
Soldering temperature	T_L	10s	DIP	245		℃
			SOP/TSSOP	260		

3.2、Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
AiP74HC367						
supply voltage	V_{CC}	-	2.0	5.0	6.0	V
input voltage	V_I	-	0	-	V_{CC}	V
output voltage	V_O	-	0	-	V_{CC}	V
input transition rise and fall rate	Δt/ΔV	V_{CC}=2.0V	-	-	625	ns/V
		V_{CC}=4.5V	-	1.67	139	ns/V
		V_{CC}=6.0V	-	-	83	ns/V
ambient temperature	T_{amb}	-	-40	-	+125	℃
AiP74HCT367						
supply voltage	V_{CC}	-	4.5	5.0	5.5	V
input voltage	V_I	-	0	-	V_{CC}	V
output voltage	V_O	-	0	-	V_{CC}	V
input transition rise and fall rate	Δt/ΔV	V_{CC}=4.5V	-	1.67	139	ns/V
ambient temperature	T_{amb}	-	-40	-	+125	℃

3.3、Electrical Characteristics

3.3.1、DC Characteristics 1

(T_{amb}=25℃, voltages are referenced to GND (ground=0V), unless otherwise specified.)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	1.2	-	V
		V_{CC}=4.5V		3.15	2.4	-	V
		V_{CC}=6.0V		4.2	3.2	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	0.8	0.5	V
		V_{CC}=4.5V		-	2.1	1.35	V
		V_{CC}=6.0V		-	2.8	1.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}	I_O=-20uA; V_{CC}=2.0V	1.9	2.0	-	V
			I_O=-20uA; V_{CC}=4.5V	4.4	4.5	-	V
			I_O=-20uA; V_{CC}=6.0V	5.9	6.0	-	V
			I_O=-6.0mA; V_{CC}=4.5V	3.98	4.32	-	V
			I_O=-7.8mA; V_{CC}=6.0V	5.48	5.81	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}	I_O=20uA; V_{CC}=2.0V	-	0	0.1	V
			I_O=20uA; V_{CC}=4.5V	-	0	0.1	V
			I_O=20uA; V_{CC}=6.0V	-	0	0.1	V
			I_O=6.0mA; V_{CC}=4.5V	-	0.15	0.26	V
			I_O=7.8mA; V_{CC}=6.0V	-	0.16	0.26	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=6.0V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=6.0V; V_O=V_{CC} or GND		-	-	±1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=6.0V		-	-	8.0	uA
input capacitance	C_I	-		-	3.5	-	pF
AiP74HCT367							
HIGH-level input voltage	V_{IH}	V_{CC}=4.5V to 5.5V		2.0	1.6	-	V
LOW-level input voltage	V_{IL}	V_{CC}=4.5V to 5.5V		-	1.2	0.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=-20uA	4.4	4.5	-	V
			I_O=-6.0mA	3.98	4.32	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=20uA	-	0	0.1	V
			I_O=6.0mA	-	0.16	0.26	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=5.5V; V_O=V_{CC} or GND		-	-	±1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	8.0	uA
additional supply current	ΔI_{CC}	per input pin; V_I=V_{CC}-2.1V; other inputs at V_{CC} or GND; V_{CC}=4.5V to 5.5V; I_O=0A	$\overline{1OE}$, nA inputs	-	-	360	uA
			$\overline{2OE}$ input	-	-	324	uA
input	C_I	-		-	3.5	-	pF

capacitance						

3.3.2、DC Characteristics 2

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	-	-	V
		V_{CC}=4.5V		3.15	-	-	V
		V_{CC}=6.0V		4.2	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	-	0.5	V
		V_{CC}=4.5V		-	-	1.35	V
		V_{CC}=6.0V		-	-	1.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}	I_O=-20uA; V_{CC}=2.0V	1.9	-	-	V
			I_O=-20uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-20uA; V_{CC}=6.0V	5.9	-	-	V
			I_O=-6.0mA; V_{CC}=4.5V	3.84	-	-	V
			I_O=-7.8mA; V_{CC}=6.0V	5.34	-	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}	I_O=20uA; V_{CC}=2.0V	-	-	0.1	V
			I_O=20uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=20uA; V_{CC}=6.0V	-	-	0.1	V
			I_O=6.0mA; V_{CC}=4.5V	-	-	0.33	V
			I_O=7.8mA; V_{CC}=6.0V	-	-	0.33	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=6.0V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=6.0V; V_O=V_{CC} or GND		-	-	±5.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=6.0V		-	-	80	uA
AiP74HCT367							
HIGH-level input voltage	V_{IH}	V_{CC}=4.5V to 5.5V		2.0	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=4.5V to 5.5V		-	-	0.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=-20uA	4.4	-	-	V
			I_O=-6.0mA	3.84	-	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=20uA	-	-	0.1	V
			I_O=6.0mA	-	-	0.33	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=5.5V; V_O=V_{CC} or GND		-	-	±5.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	80	uA
additional supply current	ΔI_{CC}	per input pin; V_I=V_{CC}-2.1V; other inputs at V_{CC} or GND; V_{CC}=4.5V to 5.5V; I_O=0A	$1\overline{OE}$, nA inputs	-	-	450	uA
			$2\overline{OE}$ input	-	-	405	uA

3.3.3、DC Characteristics 3

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	-	-	V
		V_{CC}=4.5V		3.15	-	-	V
		V_{CC}=6.0V		4.2	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	-	0.5	V
		V_{CC}=4.5V		-	-	1.35	V
		V_{CC}=6.0V		-	-	1.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}	I_O=-20uA; V_{CC}=2.0V	1.9	-	-	V
			I_O=-20uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-20uA; V_{CC}=6.0V	5.9	-	-	V
			I_O=-6.0mA; V_{CC}=4.5V	3.7	-	-	V
			I_O=-7.8mA; V_{CC}=6.0V	5.2	-	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}	I_O=20uA; V_{CC}=2.0V	-	-	0.1	V
			I_O=20uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=20uA; V_{CC}=6.0V	-	-	0.1	V
			I_O=6.0mA; V_{CC}=4.5V	-	-	0.4	V
			I_O=7.8mA; V_{CC}=6.0V	-	-	0.4	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=6.0V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=6.0V; V_O=V_{CC} or GND		-	-	±10	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=6.0V		-	-	160	uA
AiP74HCT367							
HIGH-level input voltage	V_{IH}	V_{CC}=4.5V to 5.5V		2.0	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=4.5V to 5.5V		-	-	0.8	V
HIGH-level output voltage	V_{OH}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=-20uA	4.4	-	-	V
			I_O=-6.0mA	3.7	-	-	V
LOW-level output voltage	V_{OL}	V_I = V_{IH} or V_{IL}; V_{CC}=4.5V	I_O=20uA	-	-	0.1	V
			I_O=6.0mA	-	-	0.4	V
input leakage current	I_I	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	±1.0	uA
OFF-state output current	I_{OZ}	V_I=V_{IH} or V_{IL}; V_{CC}=5.5V; V_O=V_{CC} or GND		-	-	±10	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	160	uA
additional supply current	ΔI_{CC}	per input pin; V_I=V_{CC}-2.1V; other inputs at V_{CC} or GND; V_{CC}=4.5V to 5.5V; I_O=0A	$\overline{1OE}$, nA inputs	-	-	490	uA
			$\overline{2OE}$ input	-	-	441	uA

3.3.4、AC Characteristics 1

(T_{amb}=25℃, GND =0V, C_L=50pF, unless otherwise specified.)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=2.0V	-	28	95	ns
			V_{CC}=4.5V	-	10	19	ns
			V_{CC}=5.0V; C_L=15pF	-	8	-	ns
			V_{CC}=6.0V	-	8	16	ns
$n\overline{OE}$ to nY enable time	t_{en}	see Figure 6	V_{CC}=2.0V	-	44	150	ns
			V_{CC}=4.5V	-	16	30	ns
			V_{CC}=6.0V	-	13	26	ns
$n\overline{OE}$ to nY disable time	t_{dis}	see Figure 6	V_{CC}=2.0V	-	55	150	ns
			V_{CC}=4.5V	-	20	30	ns
			V_{CC}=6.0V	-	16	26	ns
transition time	t_t	see Figure 5	V_{CC}=2.0V	-	14	60	ns
			V_{CC}=4.5V	-	5	12	ns
			V_{CC}=6.0V	-	4	10	ns
power dissipation capacitance	C_{PD}	per buffer; V_I=GND to V_{CC}		-	30	-	pF
AiP74HCT367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=4.5V	-	14	25	ns
			V_{CC}=5.0V; C_L=15pF	-	11	-	ns
$n\overline{OE}$ to nY enable time	t_{en}	V_{CC}=4.5V; see Figure 6		-	16	35	ns
$n\overline{OE}$ to nY disable time	t_{dis}	V_{CC}=4.5V; see Figure 6		-	21	35	ns
transition time	t_t	V_{CC}=4.5V; see Figure 5		-	5	12	ns
power dissipation capacitance	C_{PD}	per buffer; V_I=GND to V_{CC}-1.5V		-	32	-	pF

Note:

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.

[2] t_{en} is the same as t_{PZL} and t_{PZH}.

[3] t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[4] t_t is the same as t_{THL} and t_{TLH}.

[5] C_{PD} is used to determine the dynamic power dissipation (P_D in uW).

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

f_i=input frequency in MHz;

f_o=output frequency in MHz;

C_L=output load capacitance in pF;

V_{CC}=supply voltage in V;

N=number of inputs switching;

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

3.3.5、AC Characteristics 2

(T_{amb}=-40℃ to +85℃, GND=0V, C_L=50pF, unless otherwise specified.)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=2.0V	-	-	120	ns
			V_{CC}=4.5V	-	-	24	ns
			V_{CC}=6.0V	-	-	20	ns
$\overline{nOE}$ to nY enable time	t_{en}	see Figure 6	V_{CC}=2.0V	-	-	190	ns
			V_{CC}=4.5V	-	-	38	ns
			V_{CC}=6.0V	-	-	33	ns
$\overline{nOE}$ to nY disable time	t_{dis}	see Figure 6	V_{CC}=2.0V	-	-	190	ns
			V_{CC}=4.5V	-	-	38	ns
			V_{CC}=6.0V	-	-	33	ns
transition time	t_t	see Figure 5	V_{CC}=2.0V	-	-	75	ns
			V_{CC}=4.5V	-	-	15	ns
			V_{CC}=6.0V	-	-	13	ns
AiP74HCT367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=4.5V	-	-	31	ns
$\overline{nOE}$ to nY enable time	t_{en}	V_{CC}=4.5V; see Figure 6		-	-	44	ns
$\overline{nOE}$ to nY disable time	t_{dis}	V_{CC}=4.5V; see Figure 6		-	-	44	ns
transition time	t_t	V_{CC}=4.5V; see Figure 5		-	-	15	ns

Note:

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.

[2] t_{en} is the same as t_{PZL} and t_{PZH}.

[3] t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[4] t_t is the same as t_{THL} and t_{TLH}.

3.3.6、AC Characteristics 3

(T_{amb}=-40℃ to +125℃, GND=0V, C_L=50pF, unless otherwise specified.)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74HC367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=2.0V	-	-	145	ns
			V_{CC}=4.5V	-	-	29	ns
			V_{CC}=6.0V	-	-	25	ns
$n\overline{OE}$ to nY enable time	t_{en}	see Figure 6	V_{CC}=2.0V	-	-	225	ns
			V_{CC}=4.5V	-	-	45	ns
			V_{CC}=6.0V	-	-	38	ns
$n\overline{OE}$ to nY disable time	t_{dis}	see Figure 6	V_{CC}=2.0V	-	-	225	ns
			V_{CC}=4.5V	-	-	45	ns
			V_{CC}=6.0V	-	-	38	ns
transition time	t_t	see Figure 5	V_{CC}=2.0V	-	-	90	ns
			V_{CC}=4.5V	-	-	18	ns
			V_{CC}=6.0V	-	-	15	ns
AiP74HCT367							
nA to nY propagation delay	t_{pd}	see Figure 5	V_{CC}=4.5V	-	-	38	ns
$n\overline{OE}$ to nY enable time	t_{en}	V_{CC}=4.5V; see Figure 6		-	-	53	ns
$n\overline{OE}$ to nY disable time	t_{dis}	V_{CC}=4.5V; see Figure 6		-	-	53	ns
transition time	t_t	V_{CC}=4.5V; see Figure 5		-	-	18	ns

Note:

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.

[2] t_{en} is the same as t_{PZL} and t_{PZH}.

[3] t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[4] t_t is the same as t_{THL} and t_{TLH}.

4、Testing Circuit

4.1、AC Testing Circuit

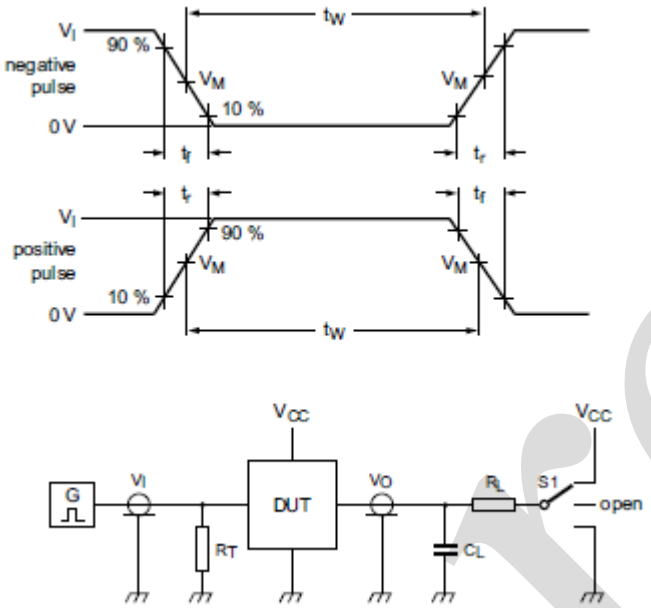


Figure 4. Test circuit for measuring switching times

Definitions for test circuit:

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.

S1=Test selection switch.

4.2、AC Testing Waveforms

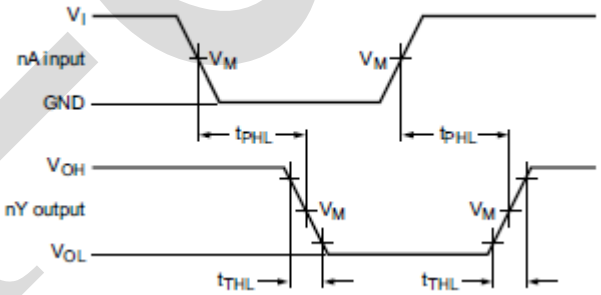


Figure 5. Input (nA) to output (nY) propagation delays and output transition times

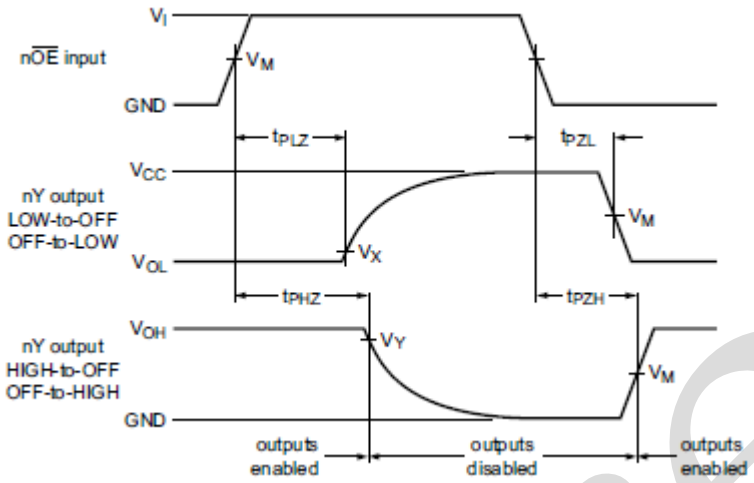


Figure 6. 3-state enable and disable times

4.3、Measurement Points

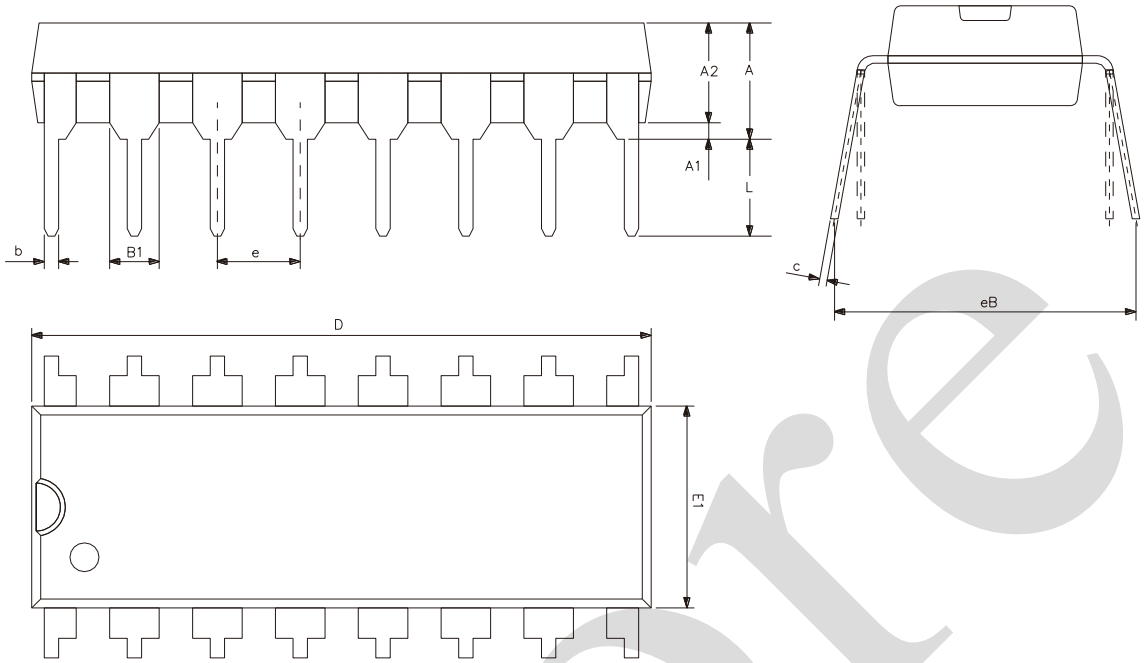
Type	Input	Output		
	V_M	V_M	V_X	V_Y
AiP74HC367	$0.5\times V_{CC}$	$0.5\times V_{CC}$	$0.1\times V_{CC}$	$0.9\times V_{CC}$
AiP74HCT367	1.3V	1.3V	$0.1\times V_{CC}$	$0.9\times V_{CC}$

4.4、Test Data

Type	Input		Load		S1 position		
	V_I	t_r , t_f	C_L	R_L	t_{PHL}, t_{PLH}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
AiP74HC367	V_{CC}	6ns	15pF, 50pF	1kΩ	open	GND	V_{CC}
AiP74HCT367	3V	6ns	15pF, 50pF	1kΩ	open	GND	V_{CC}

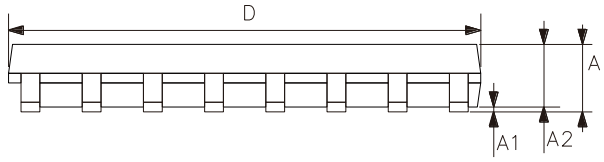
5、Package Information

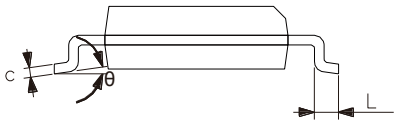
5.1、DIP16

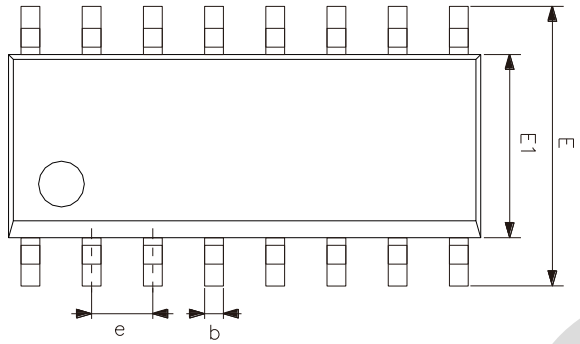


Symbol	Dimensions (mm)	
	Min.	Max.
A2	3.20	3.60
A1	0.51	-
A	3.60	5.33
L	3.00	3.60
b	0.36	0.56
B1	1.52	
D	18.80	19.94
E1	6.20	6.60
e	2.54	
c	0.20	0.36
eB	7.62	9.30

5.2、SOP16

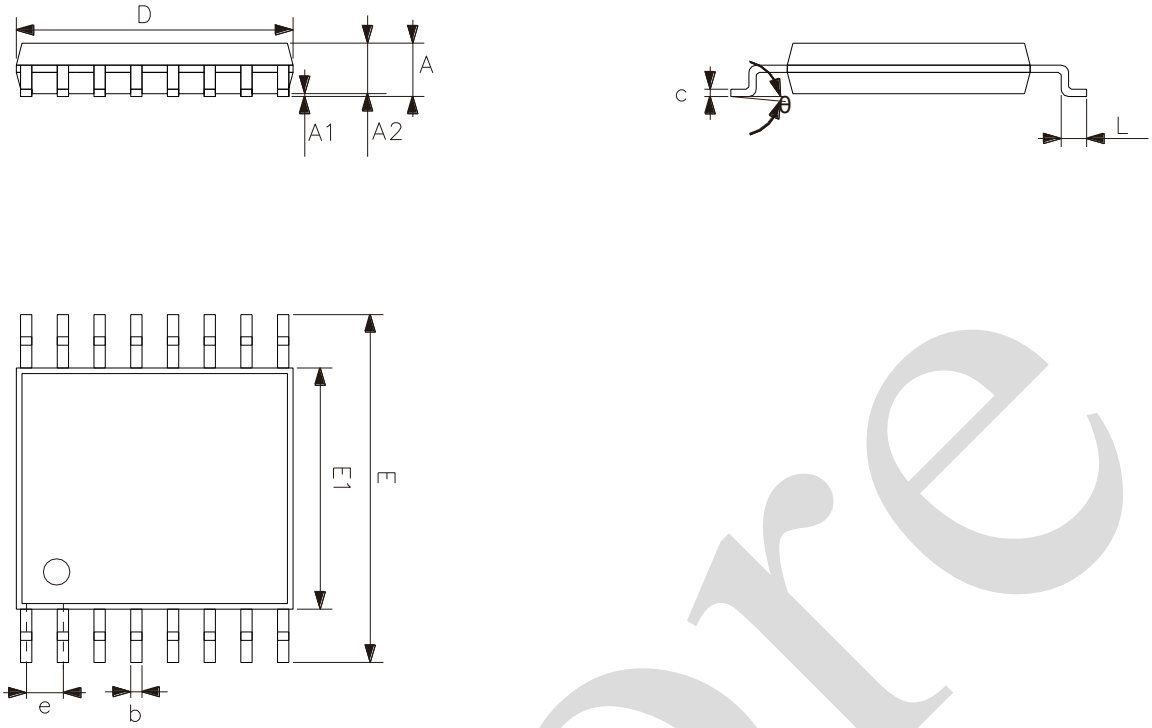






Symbol	Dimensions (mm)	
	Min.	Max.
A	1.35	1.80
A1	0.10	0.25
A2	1.25	1.55
b	0.33	0.51
c	0.19	0.25
D	9.50	10.10
E	5.80	6.30
E1	3.70	4.10
e	1.27	
L	0.35	0.89
θ	0°	8°

5.3、TSSOP16



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	4.90	5.10
E1	4.30	4.50
E	6.20	6.60
e	0.65	
L	0.45	0.75
θ	0°	8°

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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