AiP74AHC/AHCT1G125
Single Buffer/Line Driver; 3-state

Product Specification

Specification Revision History:

Version	Date	Description
2018-08-A1	2018-08	New
2023-04-B1	2023-04	Update the template

Contents

1、General Description

AiP74AHC1G125 and AiP74AHCT1G125 are high-speed Si-gate CMOS devices. They provide one non-inverting buffer/line driver with 3-state output. The 3-state output is controlled by the output enable input ($\overline{OE}$). A HIGH at $\overline{OE}$ causes the output to assume a high-impedance OFF-state.
The AHC device has CMOS input switching levels and supply voltage range 2V to 5.5V.
The AHCT device has TTL input switching levels and supply voltage range 4.5V to 5.5V.

Features:

- Symmetrical output impedance
- Low power dissipation
- Balanced propagation delays
- Specified from -40℃ to +125℃
- Packaging information: SOT23-5/SOT353

Ordering Information:

Reel packing specifications:

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
AiP74AHC1G125GB235.TR	SOT23-5	DFXX	3000PCS/reel	30000PCS/box	Dimensions of plastic enclosure: 2.9mm×1.6mm Pin spacing: 0.95mm
AiP74AHC1G125GC353.TR	SOT353	DFXX	3000PCS/reel	30000PCS/box	Dimensions of plastic enclosure: 2.1mm×1.3mm Pin spacing: 0.65mm
AiP74AHCT1G125GB235.TR	SOT23-5	DGXX	3000PCS/reel	30000PCS/box	Dimensions of plastic enclosure: 2.9mm×1.6mm Pin spacing: 0.95mm
AiP74AHCT1G125GC353.TR	SOT353	DGXX	3000PCS/reel	30000PCS/box	Dimensions of plastic enclosure: 2.1mm×1.3mm Pin spacing: 0.65mm

Note 1: “XX” refers to variable content, meaning year and package batch serial number.

Note 2: 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

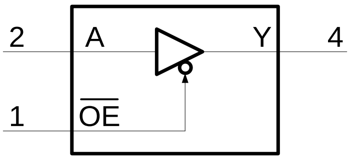


Figure 1. Logic symbol

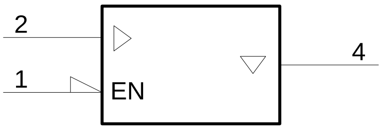


Figure 2. IEC logic symbol

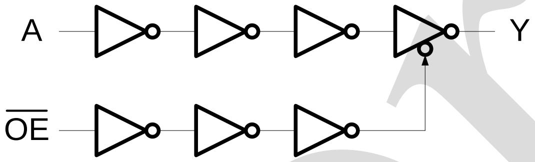


Figure 3. Logic diagram

2.2、Pin Configurations

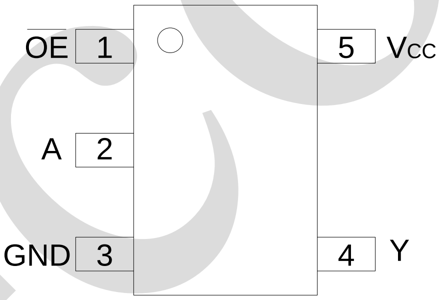


Figure 4. Pin Configurations

2.3、Pin Description

Pin No.	Pin Name	Description
1	$\overline{\text{OE}}$	output enable input
2	A	data input
3	GND	ground (0V)
4	Y	data output
5	V_{CC}	supply voltage

2.4、Function Table

Inputs		Output
$\overline{OE}$	**A**	**Y**
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

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

Characteristic	Symbol	Conditions	Min.	Max.	Unit
supply voltage	V_{CC}	-	-0.5	+7.0	V
input voltage	V_I	-	-0.5	+7.0	V
input clamping current	I_{IK}	V_I<-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	-	±25	mA
supply current	I_{CC}	-	-	75	mA
ground current	I_{GND}	-	-75	-	mA
storage temperature	T_{stg}	-	-65	+150	℃
total power dissipation	P_{tot}	-	-	250	mW
soldering temperature	T_L	10s	260		℃

3.2、Recommended Operating Conditions

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
AiP74AHC1G125						
supply voltage	V_{CC}	-	2.0	5.0	5.5	V
input voltage	V_I	-	0	-	5.5	V
output voltage	V_O	-	0	-	V_{CC}	V
ambient temperature	T_{amb}	-	-40	-	+125	℃
input transition rise and fall rate	Δt/ΔV	V_{CC}=3.3V ±0.3V	-	-	100	ns/V
		V_{CC}=5.0V ±0.5V	-	-	20	ns/V
AiP74AHCT1G125						
supply voltage	V_{CC}	-	4.5	5.0	5.5	V
input voltage	V_I	-	0	-	5.5	V
output voltage	V_O	-	0	-	V_{CC}	V
ambient temperature	T_{amb}	-	-40	-	+125	℃
input transition rise and fall rate	Δt/ΔV	V_{CC}=3.3V±0.3V	-	-	-	ns/V
		V_{CC}=5.0V±0.5V	-	-	20	ns/V

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
AiP74AHC1G125							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	-	-	V
		V_{CC}=3.0V		2.1	-	-	V
		V_{CC}=5.5V		3.85	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	-	0.5	V
		V_{CC}=3.0V		-	-	0.9	V
		V_{CC}=5.5V		-	-	1.65	V
HIGH-level output voltage	V_{OH}	V_I=V_{IH} or V_{IL}	I_O=-50uA; V_{CC}=2.0V	1.9	2.0	-	V
			I_O=-50uA; V_{CC}=3.0V	2.9	3.0	-	V
			I_O=-50uA; V_{CC}=4.5V	4.4	4.5	-	V
			I_O=-4mA; V_{CC}=3.0V	2.58	-	-	V
			I_O=-8mA; V_{CC}=4.5V	3.94	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{IH} or V_{IL}	I_O=50uA; V_{CC}=2.0V	-	0	0.1	V
			I_O=50uA; V_{CC}=3.0V	-	0	0.1	V
			I_O=50uA; V_{CC}=4.5V	-	0	0.1	V
			I_O=4mA; V_{CC}=3.0V	-	-	0.36	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.36	V
OFF-state output current	I_{OZ}	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	1.0	uA
input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	1.0	uA
Input capacitance	C_I	-		-	1.5	10	pF
AiP74AHCT1G125							
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}	I_O=-50uA; V_{CC}=4.5V	4.4	4.5	-	V
			I_O=-8mA; V_{CC}=4.5V	3.94	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{IH} or V_{IL}	I_O=50uA; V_{CC}=4.5V	-	0	0.1	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.36	V
OFF-state output current	I_{OZ}	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	1.0	uA
input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	1.0	uA

additional supply current	ΔI_{CC}	per input pin; V_I=3.4V; other inputs at V_{CC} or GND; I_O=0A; V_{CC}=5.5V	-	-	1.35	mA
input capacitance	C_I	-	-	1.5	10	pF

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
AiP74AHC1G125							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	-	-	V
		V_{CC}=3.0V		2.1	-	-	V
		V_{CC}=5.5V		3.85	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	-	0.5	V
		V_{CC}=3.0V		-	-	0.9	V
		V_{CC}=5.5V		-	-	1.65	V
HIGH-level output voltage	V_{OH}	V_I=V_{IH} or V_{IL}	I_O=-50uA; V_{CC}=2.0V	1.9	-	-	V
			I_O=-50uA; V_{CC}=3.0V	2.9	-	-	V
			I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-4mA; V_{CC}=3.0V	2.48	-	-	V
			I_O=-8mA; V_{CC}=4.5V	3.8	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{IH} or V_{IL}	I_O=50uA; V_{CC}=2.0V	-	-	0.1	V
			I_O=50uA; V_{CC}=3.0V	-	-	0.1	V
			I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=4mA; V_{CC}=3.0V	-	-	0.44	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.44	V
OFF-state output current	I_{OZ}	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	2.5	uA
input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	10	uA
Input capacitance	C_I	-		-	-	10	pF
AiP74AHCT1G125							
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}	I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-8mA; V_{CC}=4.5V	3.8	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{IH} or V_{IL}	I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.44	V
OFF-state output current	I_{OZ}	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	2.5	uA

input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V	-	-	1.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V	-	-	10	uA
additional supply current	ΔI_{CC}	per input pin; V_I=3.4V; other inputs at V_{CC} or GND; I_O=0A; V_{CC}=5.5V	-	-	1.5	mA
input capacitance	C_I	-	-	-	10	pF

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
AiP74AHC1G125							
HIGH-level input voltage	V_{IH}	V_{CC}=2.0V		1.5	-	-	V
		V_{CC}=3.0V		2.1	-	-	V
		V_{CC}=5.5V		3.85	-	-	V
LOW-level input voltage	V_{IL}	V_{CC}=2.0V		-	-	0.5	V
		V_{CC}=3.0V		-	-	0.9	V
		V_{CC}=5.5V		-	-	1.65	V
HIGH-level output voltage	V_{OH}	V_I=V_{IH} or V_{IL}	I_O=-50uA; V_{CC}=2.0V	1.9	-	-	V
			I_O=-50uA; V_{CC}=3.0V	2.9	-	-	V
			I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-4mA; V_{CC}=3.0V	2.4	-	-	V
			I_O=-8mA; V_{CC}=4.5V	3.7	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{IH} or V_{IL}	I_O=50uA; V_{CC}=2.0V	-	-	0.1	V
			I_O=50uA; V_{CC}=3.0V	-	-	0.1	V
			I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=4mA; V_{CC}=3.0V	-	-	0.55	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.55	V
OFF-state output current	I_{OZ}	V_I=V_{CC} or GND; V_{CC}=5.5V		-	-	10	uA
input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	2.0	uA
supply current	I_{CC}	V_I=V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	40	uA
Input capacitance	C_I	-		-	-	10	pF
AiP74AHCT1G125							
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}	I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
			I_O=-8mA; V_{CC}=4.5V	3.7	-	-	V

LOW-level output voltage	V_{OL}	$V_I=V_{IH}$ or V_{IL}	I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.55	V
OFF-state output current	I_{OZ}	$V_I=V_{CC}$ or GND; V_{CC}=5.5V		-	-	10	uA
input leakage current	I_I	V_I=5.5V or GND; V_{CC}=0V to 5.5V		-	-	2.0	uA
supply current	I_{CC}	$V_I=V_{CC}$ or GND; I_O=0A; V_{CC}=5.5V		-	-	40	uA
additional supply current	ΔI_{CC}	per input pin; V_I=3.4V; other inputs at V_{CC} or GND; I_O=0A; V_{CC}=5.5V		-	-	1.5	mA
input capacitance	C_I	-		-	-	10	pF

3.3.4、AC Characteristics 1

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74AHC1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	-	4.7	8.0	ns
			C_L=50pF	-	6.6	11.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	3.4	5.5	ns
			C_L=50pF	-	4.8	7.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	-	5.0	8.0	ns
			C_L=50pF	-	6.9	11.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	3.6	5.1	ns
			C_L=50pF	-	4.9	7.5	ns
disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	-	6.0	9.7	ns
			C_L=50pF	-	8.3	13.2	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	4.1	6.8	ns
			C_L=50pF	-	5.7	6.8	ns
Power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I=GND to V_{CC}[4]		-	9	-	pF
AiP74AHCT1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	3.4	5.5	ns
			C_L=50pF	-	4.8	7.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	3.9	5.1	ns
			C_L=50pF	-	5.1	7.5	ns

disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	4.5	6.8	ns
			C_L=50pF	-	6.1	8.8	ns
power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I= GND to V_{CC}[4]		-	11	-	pF

Note:

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.
t_{en} is the same as t_{PZL} and t_{PZH}.
t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[2] Typical values are measured at V_{CC}=3.3V.

[3] Typical values are measured at V_{CC}=5V.

[4] C_{PD} is used to determine the dynamic power dissipation (P_D in uW).
$P_D=C_{PD}\times V_{CC}^2\times f_i+\sum(C_L\times V_{CC}^2\times f_o)$ 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 Volts.

3.3.5、AC Characteristics 2

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

Parameter	**Symbol**	**Conditions**		**Min.**	**Typ.**	**Max.**	**Unit**
AiP74AHC1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	9.5	ns
			C_L=50pF	1.0	-	13.0	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.5	ns
			C_L=50pF	1.0	-	8.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	9.5	ns
			C_L=50pF	1.0	-	13.0	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.0	ns
			C_L=50pF	1.0	-	8.5	ns
disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	11.5	ns
			C_L=50pF	1.0	-	15.0	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	8.0	ns
			C_L=50pF	1.0	-	10.0	ns
Power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I=GND to V_{CC}[4]		-	-	-	pF
AiP74AHCT1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.5	ns

			C_L=50pF	1.0	-	8.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.0	ns
			C_L=50pF	1.0	-	8.5	ns
disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	8.0	ns
			C_L=50pF	1.0	-	10.0	ns
power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I= GND to V_{CC}[4]		-	-	-	pF

Note:

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

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

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

[2] Typical values are measured at V_{CC}=3.3V.

[3] Typical values are measured at V_{CC}=5V.

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

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

3.3.6、AC Characteristics 3

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74AHC1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	11.5	ns
			C_L=50pF	1.0	-	14.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	7.0	ns
			C_L=50pF	1.0	-	9.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	11.5	ns
			C_L=50pF	1.0	-	14.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.5	ns
			C_L=50pF	1.0	-	9.5	ns
disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	12.5	ns
			C_L=50pF	1.0	-	16.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	8.5	ns
			C_L=50pF	1.0	-	11.0	ns

Power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I=GND to V_{CC}[4]		-	-	-	pF
AiP74AHCT1G125							
propagation delay	t_{pd}	A to Y; see Figure 6[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	7.0	ns
			C_L=50pF	1.0	-	9.5	ns
enable time	t_{en}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	6.5	ns
			C_L=50pF	1.0	-	9.5	ns
disable time	t_{dis}	$\overline{OE}$ to Y; see Figure 7[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	8.5	ns
			C_L=50pF	1.0	-	11.0	ns
power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f=1MHz; V_I= GND to V_{CC}[4]		-	-	-	pF

Note:

[1] t_{pd} is the same as t_{PLH} and t_{PHL}.
t_{en} is the same as t_{PZL} and t_{PZH}.
t_{dis} is the same as t_{PLZ} and t_{PHZ}.

[2] Typical values are measured at V_{CC}=3.3V.

[3] Typical values are measured at V_{CC}=5V.

[4] C_{PD} is used to determine the dynamic power dissipation (P_D in uW).
$P_D=C_{PD}\times V_{CC}^2\times f_i+\sum(C_L\times V_{CC}^2\times f_o)$ 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 Volts.

4、Testing Circuit

4.1、AC Testing Circuit

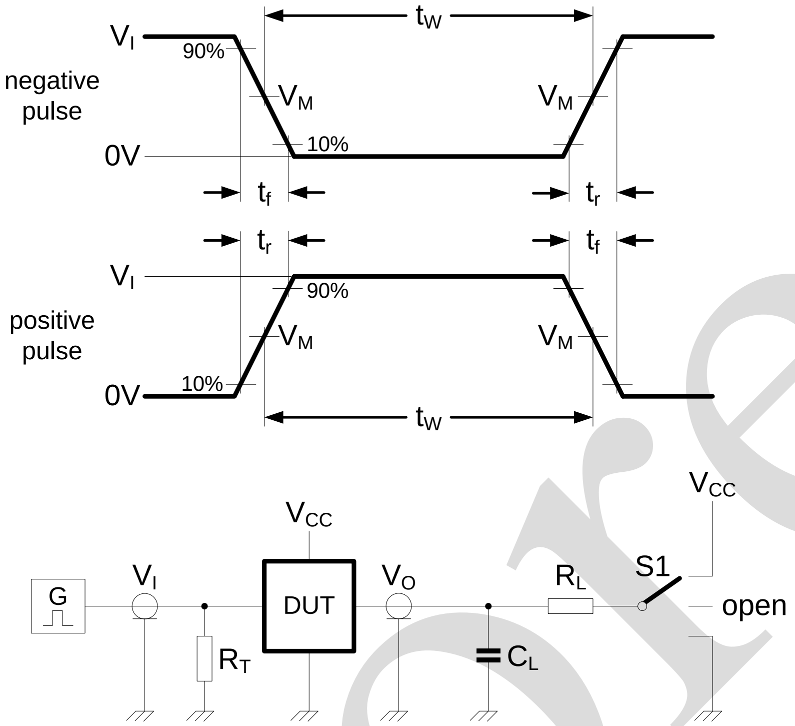


Figure 5. Test circuit for measuring switching times

Definitions test circuit:

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

C_L=Load capacitance including jig and probe capacitance.

R_L=Load resistance.

S1=Test selection switch.

4.2、AC Testing Waveforms

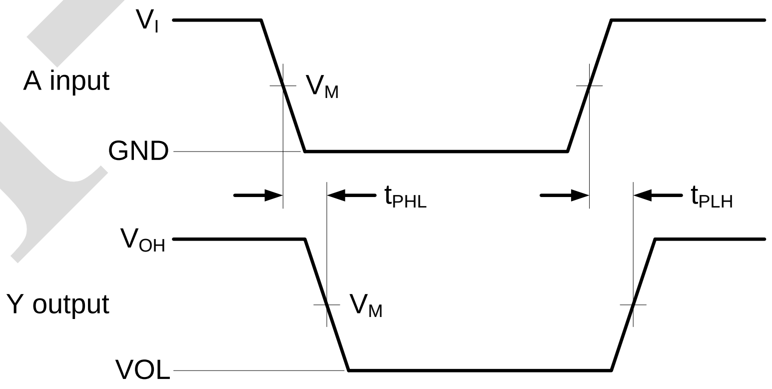


Figure 6. Input (A) to output (Y) propagation delays

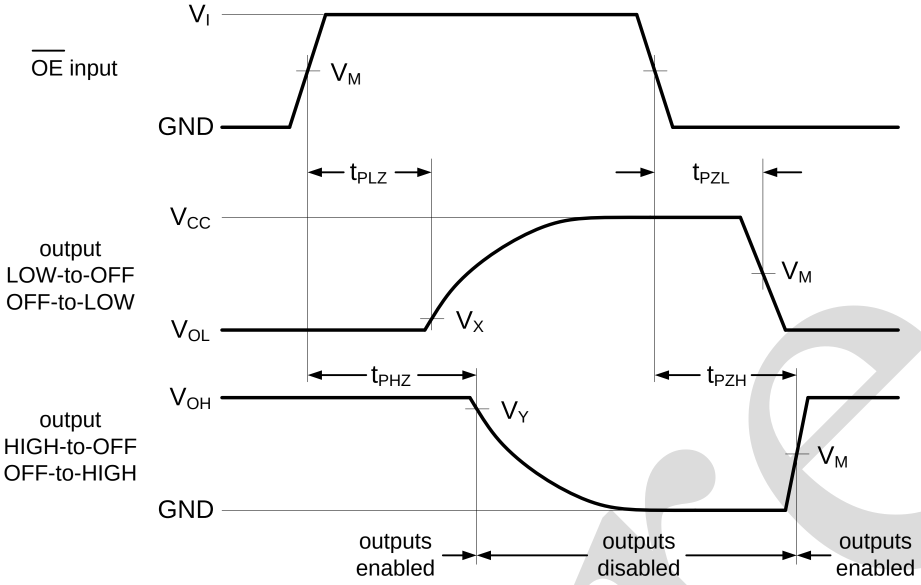


Figure 7. Enable and disable times

4.3、Measurement Points

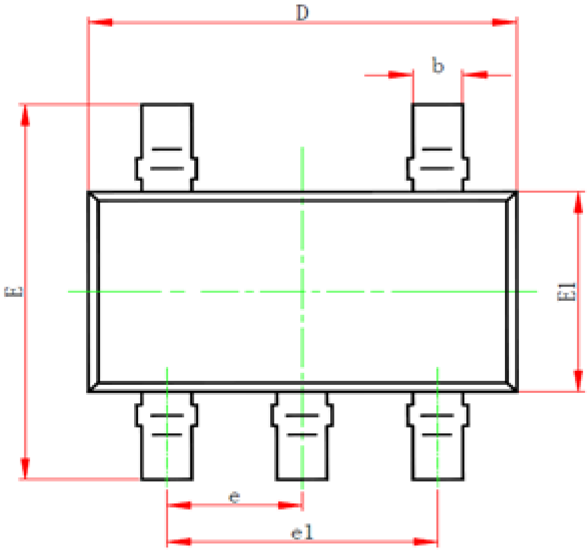
Type	Inputs		Outputs		
	V_I	V_M	V_M	V_X	V_Y
AiP74AHC1G125	GND to V_{CC}	$0.5V_{CC}$	$0.5\times V_{CC}$	$V_{OL}+0.3V$	$V_{OH}-0.3V$
AiP74AHCT1G125	GND to 3.0V	1.5V	$0.5\times V_{CC}$	$V_{OL}+0.3V$	$V_{OH}-0.3V$

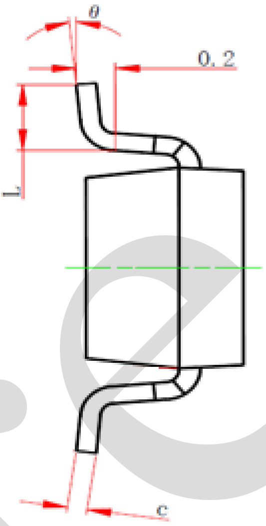
4.4、Test Data

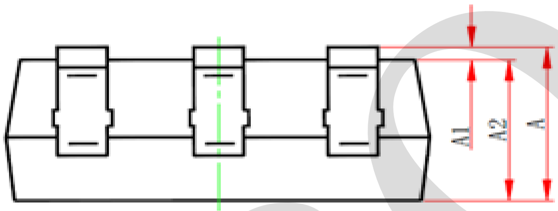
Type	Inputs		Load		S1 position		
	V_I	t_r, t_f	C_L	R_L	t_{PHL}, t_{PLH}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
AiP74AHC1G125	V_{CC}	≤3ns	15pF, 50pF	1kΩ	open	GND	V_{CC}
AiP74AHCT1G125	3V	≤3ns	15pF, 50pF	1kΩ	open	GND	V_{CC}

5、Package Information

5.1、SOT23-5

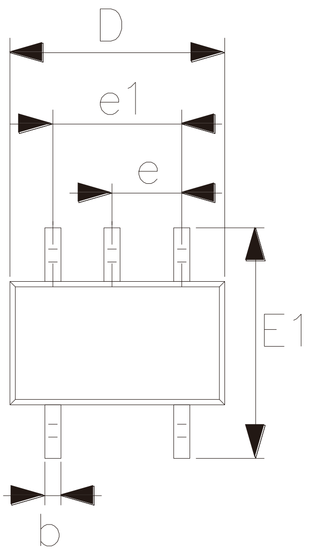


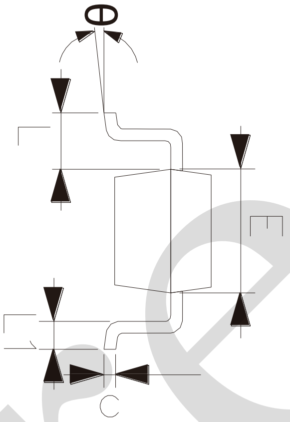


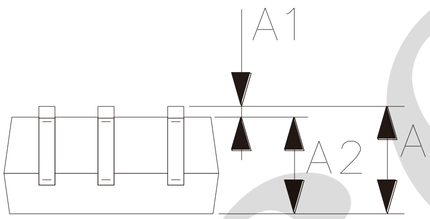


Symbol	Dimensions (mm)	
	Min.	Max.
A	-	1.26
A1	0.00	0.12
A2	1.00	1.20
b	0.30	0.50
c	0.10	0.20
D	2.82	3.02
E	2.60	3.00
E1	1.50	1.70
e	0.95	
e1	1.80	2.00
L	0.30	0.60
θ	0°	8°

5.2、SOT353







Symbol	Dimensions (mm)	
	Min.	**Max.**
A	0.90	1.10
A1	0.00	0.10
A2	0.90	1.00
b	0.15	0.35
c	0.11	0.175
D	2.00	2.20
E	1.15	1.35
E1	2.15	2.45
e	0.65	
e1	1.20	1.40
L	0.525	
L1	0.26	0.46
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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