AiP74AHC/AHCT1G14
Single Inverter Schmitt Trigger

Product Specification

Specification Revision History:

Version	Date	Description
2018-05-A1	2018-05	New
2023-04-B1	2023-04	Update the template
2023-05-B2	2023-05	Modify parameters

Contents

1、General Description

AiP74AHC1G14 and AiP74AHCT1G14 are high-speed Si-gate CMOS devices. They provide an inverting buffer function with Schmitt trigger action. These devices are capable of transforming slowly changing input signals into sharply defined, jitter-free output signals.

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
AiP74AHC1G14GB235.TR	SOT23-5	CEXX	3000 PCS/reel	30000 PCS/box	Dimensions of plastic enclosure: 2.9mm×1.6mm Pin spacing:0.95mm
AiP74AHC1G14GC353.TR	SOT353	CEXX	3000 PCS/reel	30000 PCS/box	Dimensions of plastic enclosure: 2.1mm×1.3mm Pin spacing:0.65mm
AiP74AHCT1G14GB235.TR	SOT23-5	CSXX	3000 PCS/reel	30000 PCS/box	Dimensions of plastic enclosure: 2.9mm×1.6mm Pin spacing:0.95mm
AiP74AHCT1G14GC353.TR	SOT353	CSXX	3000 PCS/reel	30000 PCS/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

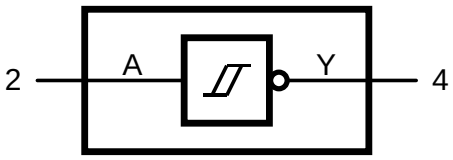


Figure 1. Logic symbol

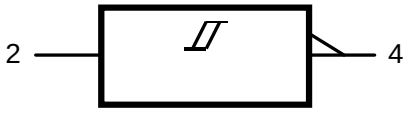


Figure 2. IEC logic symbol

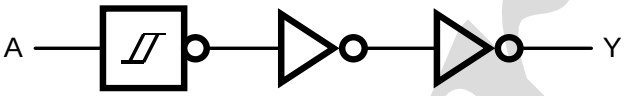
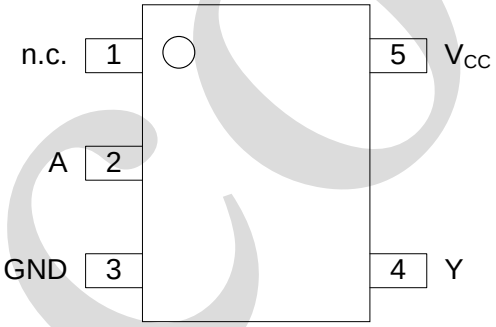


Figure 3. Logic diagram

2.2、Pin Configurations



2.3、Pin Description

Pin No.	Pin Name	Description
1	n.c.	not connected
2	A	data input
3	GND	ground (0V)
4	Y	data output
5	V_{CC}	supply voltage

2.4、Function Table

Input	Output
A	**Y**
L	H
H	L

Note: H=HIGH voltage level; L=LOW voltage level.

3、Electrical Parameter

3.1、Absolute Maximum Ratings

Parameter	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
AiP74AHC1G14						
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	℃
AiP74AHCT1G14						
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	℃

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
AiP74AHC1G14							
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}	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_{T+} or V_{T-}	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

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
AiP74AHCT1G14						
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}; I_O=-50uA; V_{CC}=4.5V	4.4	4.5	-	V
		V_I=V_{T+} or V_{T-}; I_O=-8mA; V_{CC}=4.5V	3.94	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{T+} or V_{T-}; I_O=50uA; V_{CC}=4.5V	-	0	0.1	V
		V_I=V_{T+} or V_{T-}; I_O=8mA; V_{CC}=4.5V	-	-	0.36	V
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
AiP74AHC1G14						
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}; I_O=-50uA; V_{CC}=2.0V	1.9	-	-	V
		V_I=V_{T+} or V_{T-}; I_O=-50uA; V_{CC}=3.0V	2.9	-	-	V
		V_I=V_{T+} or V_{T-}; I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
		V_I=V_{T+} or V_{T-}; I_O=-4mA; V_{CC}=3.0V	2.48	-	-	V
		V_I=V_{T+} or V_{T-}; I_O=-8mA; V_{CC}=4.5V	3.8	-	-	V
LOW-level output voltage	V_{OL}	V_I=V_{T+} or V_{T-}; I_O=50uA; V_{CC}=2.0V	-	-	0.1	V
		V_I=V_{T+} or V_{T-}; I_O=50uA; V_{CC}=3.0V	-	-	0.1	V
		V_I=V_{T+} or V_{T-}; I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
		V_I=V_{T+} or V_{T-}; I_O=4mA; V_{CC}=3.0V	-	-	0.44	V
		V_I=V_{T+} or V_{T-}; I_O=8mA; V_{CC}=4.5V	-	-	0.44	V
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
AiP74AHCT1G14						
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}; I_O=-50uA; V_{CC}=4.5V	4.4	-	-	V
		V_I=V_{T+} or V_{T-}; I_O=-8mA; V_{CC}=4.5V	3.8	-	-	V
LOW-level	V_{OL}	V_I=V_{T+} or V_{T-}; I_O=50uA; V_{CC}=4.5V	-	-	0.1	V

output voltage			I_O=8mA; V_{CC}=4.5V	-	-	0.44	V
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
AiP74AHC1G14							
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}	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_{T+} or V_{T-}	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
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
AiP74AHCT1G14							
HIGH-level output voltage	V_{OH}	V_I=V_{T+} or V_{T-}	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_{T+} or V_{T-}	I_O=50uA; V_{CC}=4.5V	-	-	0.1	V
			I_O=8mA; V_{CC}=4.5V	-	-	0.55	V
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、Transfer Characteristics 1

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
AiP74AHC1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=3.0V	1.2	-	2.2	V
		V_{CC}=4.5V	1.75	-	3.15	V
		V_{CC}=5.5V	2.15	-	3.85	V
negative-going threshold voltage	V_{T-}	V_{CC}=3.0V	0.9	-	1.9	V
		V_{CC}=4.5V	1.35	-	2.75	V
		V_{CC}=5.5V	1.65	-	3.35	V
Hysteresis voltage	V_H	V_{CC}=3.0V	0.3	-	1.2	V
		V_{CC}=4.5V	0.4	-	1.4	V
		V_{CC}=5.5V	0.5	-	1.6	V
AiP74AHCT1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=4.5V	0.9	-	2.0	V
		V_{CC}=5.5V	1.1	-	2.0	V
negative-going threshold voltage	V_{T-}	V_{CC}=4.5V	0.5	-	1.6	V
		V_{CC}=5.5V	0.6	-	1.5	V
Hysteresis voltage	V_H	V_{CC}=4.5V	0.4	-	1.4	V
		V_{CC}=5.5V	0.4	-	1.6	V

3.3.5、Transfer Characteristics 2

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
AiP74AHC1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=3.0V	1.2	-	2.2	V
		V_{CC}=4.5V	1.75	-	3.15	V
		V_{CC}=5.5V	2.15	-	3.85	V
negative-going threshold voltage	V_{T-}	V_{CC}=3.0V	0.9	-	1.9	V
		V_{CC}=4.5V	1.35	-	2.75	V
		V_{CC}=5.5V	1.65	-	3.35	V
Hysteresis voltage	V_H	V_{CC}=3.0V	0.3	-	1.2	V
		V_{CC}=4.5V	0.4	-	1.4	V
		V_{CC}=5.5V	0.5	-	1.6	V
AiP74AHCT1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=4.5V	0.9	-	2.0	V
		V_{CC}=5.5V	1.1	-	2.0	V
negative-going threshold voltage	V_{T-}	V_{CC}=4.5V	0.5	-	1.6	V
		V_{CC}=5.5V	0.6	-	1.5	V
Hysteresis voltage	V_H	V_{CC}=4.5V	0.4	-	1.4	V
		V_{CC}=5.5V	0.4	-	1.6	V

3.3.6、Transfer Characteristics 3

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
AiP74AHC1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=3.0V	1.2	-	2.2	V
		V_{CC}=4.5V	1.75	-	3.15	V
		V_{CC}=5.5V	2.15	-	3.85	V
negative-going threshold voltage	V_{T-}	V_{CC}=3.0V	0.9	-	1.9	V
		V_{CC}=4.5V	1.35	-	2.75	V
		V_{CC}=5.5V	1.65	-	3.35	V
Hysteresis voltage	V_H	V_{CC}=3.0V	0.25	-	1.2	V
		V_{CC}=4.5V	0.35	-	1.4	V
		V_{CC}=5.5V	0.45	-	1.6	V
AiP74AHCT1G14						
positive-going threshold voltage	V_{T+}	V_{CC}=4.5V	0.9	-	2.0	V
		V_{CC}=5.5V	1.1	-	2.0	V
negative-going threshold voltage	V_{T-}	V_{CC}=4.5V	0.5	-	1.6	V
		V_{CC}=5.5V	0.6	-	1.5	V
Hysteresis voltage	V_H	V_{CC}=4.5V	0.35	-	1.4	V
		V_{CC}=5.5V	0.35	-	1.6	V

3.3.7、AC Characteristics 1

(T_{amb}=25℃, GND=0V; t_r=t_f≤3.0ns., unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74AHC1G14							
propagation delay	t_{pd}	A to Y[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	-	4.2	12.8	ns
			C_L=50pF	-	6.0	16.3	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	3.2	8.6	ns
			C_L=50pF	-	4.6	10.6	ns
Power dissipation capacitance	C_{PD}	per buffer; C_L=50pF; f_i=1MHz; V_I= GND to V_{CC}[4]		-	12	-	pF
AiP74AHCT1G14							
propagation delay	t_{pd}	A to Y[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	-	4.1	7.0	ns
			C_L=50pF	-	5.9	8.5	ns
Power dissipation capacitance	C_{PD}	per buffer; V_I= GND to V_{CC}[4]		-	13	-	pF

Note:

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

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

[3] Typical values are measured at V_{CC}=5.0V.

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

3.3.8、AC Characteristics 2

(T_{amb}=-40℃ to +85℃, GND=0V; $t_r=t_f\leq$3.0ns., unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74AHC1G14							
propagation delay	t_{pd}	A to Y[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	15.0	ns
			C_L=50pF	1.0	-	18.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	10.0	ns
			C_L=50pF	1.0	-	12.0	ns
AiP74AHCT1G14							
propagation delay	t_{pd}	A to Y[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

Note:

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

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

[3] Typical values are measured at V_{CC}=5.0V.

3.3.9、AC Characteristics 3

(T_{amb}=-40℃ to +125℃, GND=0V; $t_r=t_f\leq$3.0ns., unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
AiP74AHC1G14							
propagation delay	t_{pd}	A to Y[1]	V_{CC}=3.0V to 3.6V[2]				
			C_L=15pF	1.0	-	16.5	ns
			C_L=50pF	1.0	-	20.5	ns
			V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	11.0	ns
			C_L=50pF	1.0	-	13.5	ns
AiP74AHCT1G14							
propagation delay	t_{pd}	A to Y[1]	V_{CC}=4.5V to 5.5V[3]				
			C_L=15pF	1.0	-	9.0	ns
			C_L=50pF	1.0	-	11.0	ns

Note:

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

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

[3] Typical values are measured at V_{CC}=5.0V.

4、Testing Circuit

4.1、AC Testing Circuit

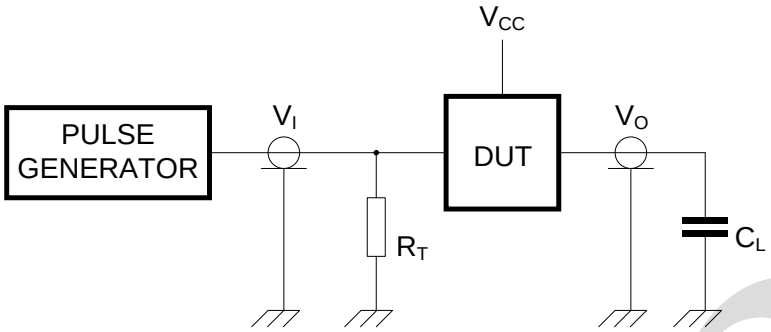


Figure 4. Test circuit for measuring switching times

Definitions for test circuit:

C_L=Load capacitance.

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

4.2、AC Testing Waveforms

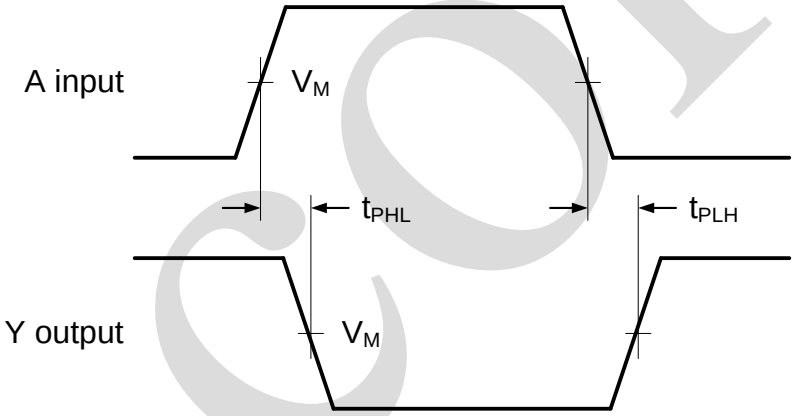


Figure 5. The input (A) to output (Y) propagation delay times

4.3、Test Data

Type number	Input		Output
	V_I	V_M	V_M
AiP74AHC1G14	GND to V_{CC}	0.5×V_{CC}	0.5×V_{CC}
AiP74AHCT1G14	GND to 3.0V	1.5V	0.5×V_{CC}

4.4、Transfer Characteristic Waveforms

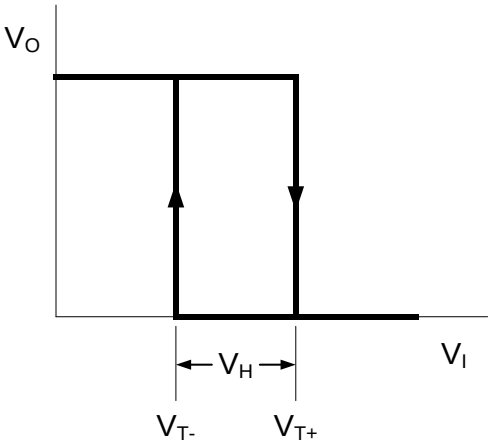


Figure 6. Transfer characteristic

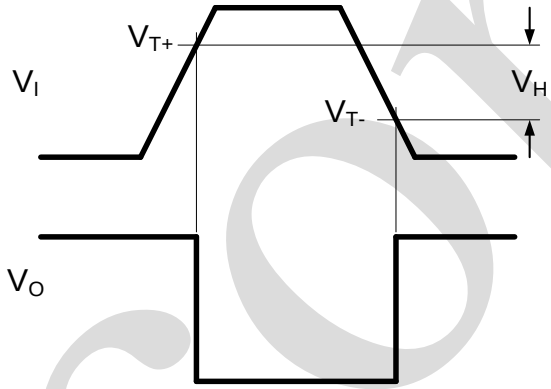


Figure 7. The definitions of V_{T+}, V_{T-} and V_H

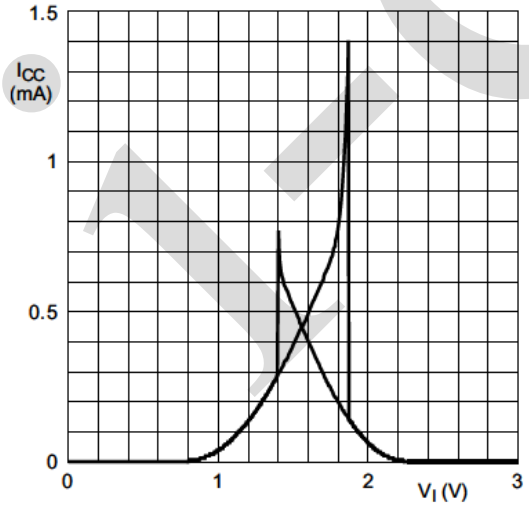


Figure 8.Typical AiP74AHC1G14 transfer characteristics; V_{CC}=3.0V

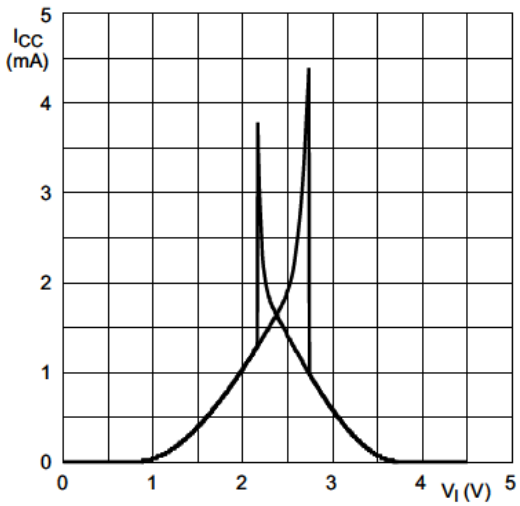


Figure 9.Typical AiP74AHC1G14 transfer characteristics; V_{CC}=4.5V

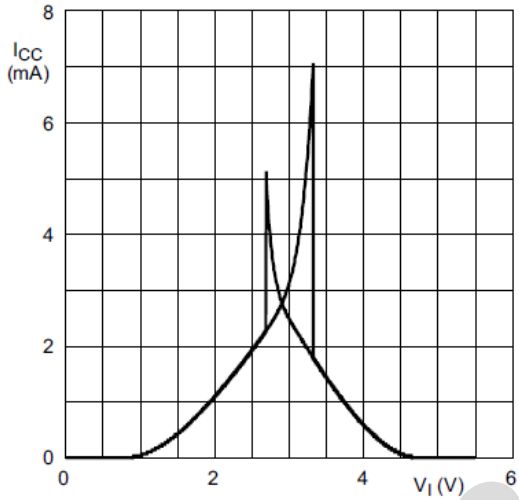


Figure 10.Typical AiP74AHC1G14 transfer characteristics; V_{CC}=5.5V

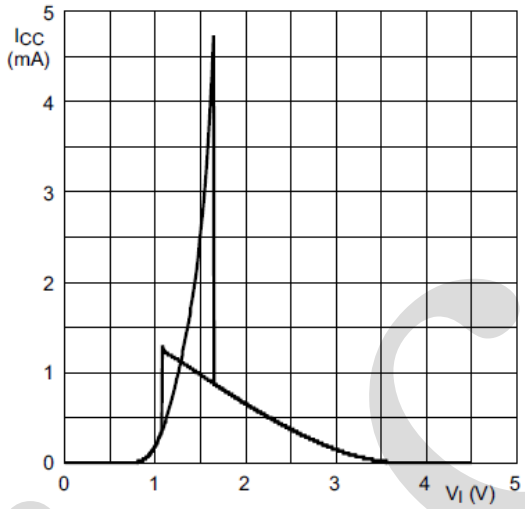


Figure 11.Typical AiP74AHCT1G14 transfer characteristics; V_{CC}=4.5V

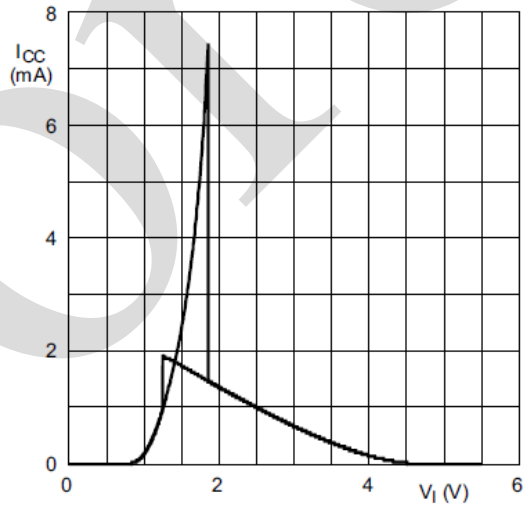


Figure 12.Typical AiP74AHCT1G14 transfer characteristics; V_{CC}=5.5V

5、Typical Application Circuit And Application Note

The slow input rise and fall times cause additional power dissipation, which can be calculated using the following formula:

$P_{add}=f_i\times(t_r\times\Delta I_{CC(AV)}+t_f\times\Delta I_{CC(AV)})\times V_{CC}$ where:

P_{add}=additional power dissipation (uW);

f_i=input frequency (MHz);

t_r=input rise time (ns); 10% to 90%;

t_f=input fall time (ns); 90% to 10%;

$\Delta I_{CC(AV)}$=average additional supply current (uA).

Average additional I_{CC} differs with positive or negative input transitions, as shown in Figure 13 and Figure 14.

For AiP74AHC1G14 and AiP74AHCT1G14 used in relaxation oscillator circuit, see Figure 15.

Note to the application information:

1.All values given are typical unless otherwise specified.

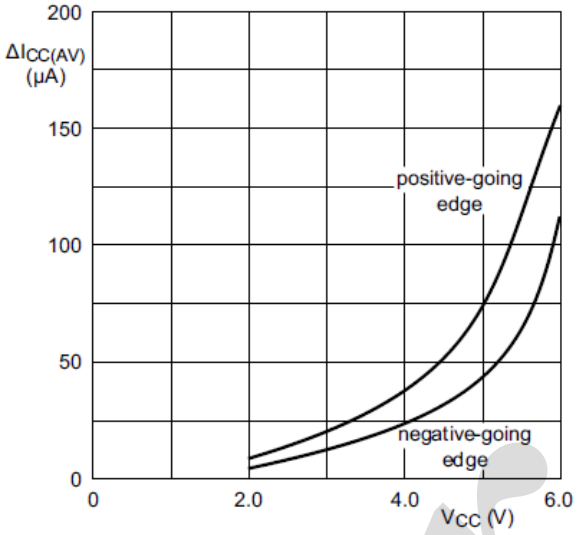


Figure 13. Average additional I_{CC} for AiP74AHC1G14 Schmitt trigger devices; linear change of V_I between $0.1V_{CC}$ to $0.9V_{CC}$

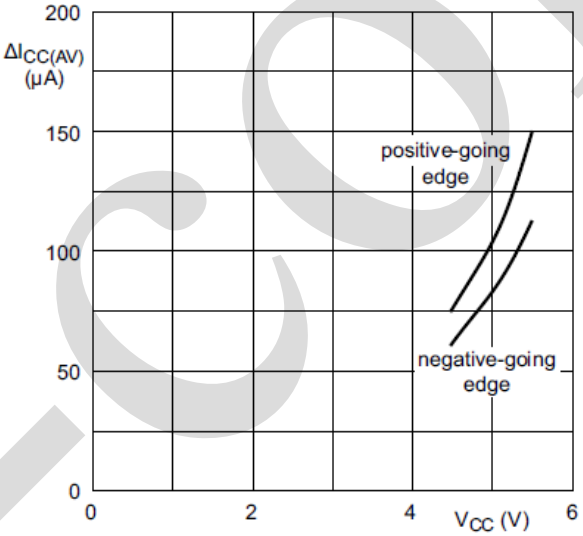
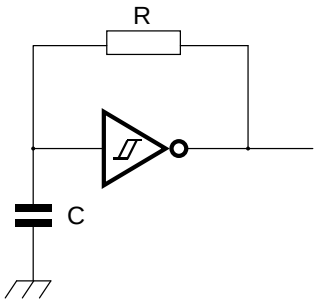


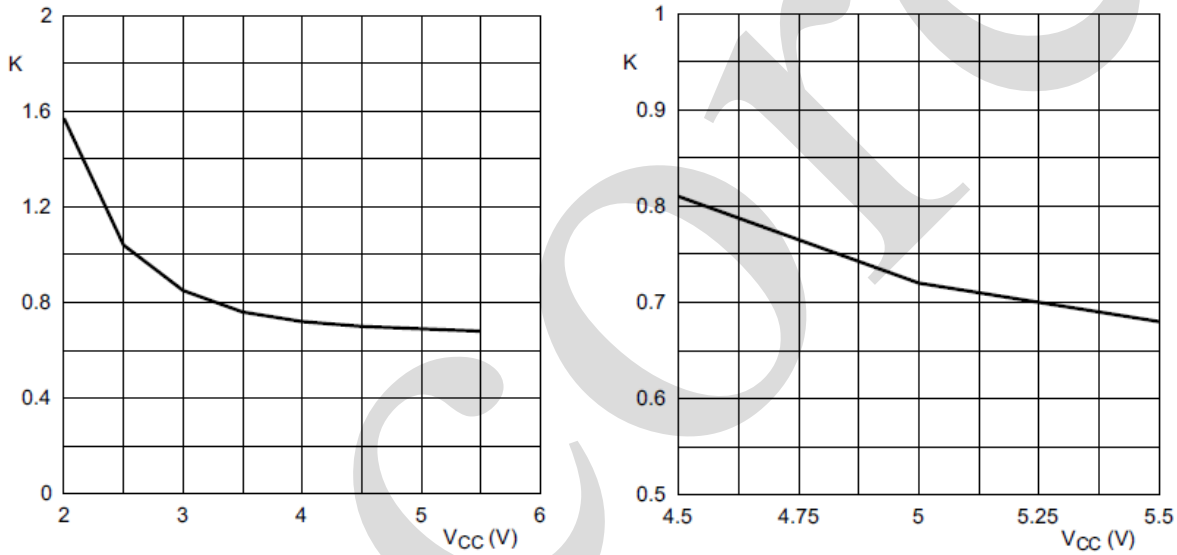
Figure 14. Average additional I_{CC} for AiP74AHCT1G14 Schmitt trigger devices; linear change of V_I between $0.1V_{CC}$ to $0.9V_{CC}$



For AiP74AHC1G14 and AiP74AHCT1G14: $f = \frac{1}{T} \approx \frac{1}{K \times RC}$

For K-factor, see Figure 16

Figure 15. Relaxation oscillator using the 74AHC1G14 and 74AHCT1G14

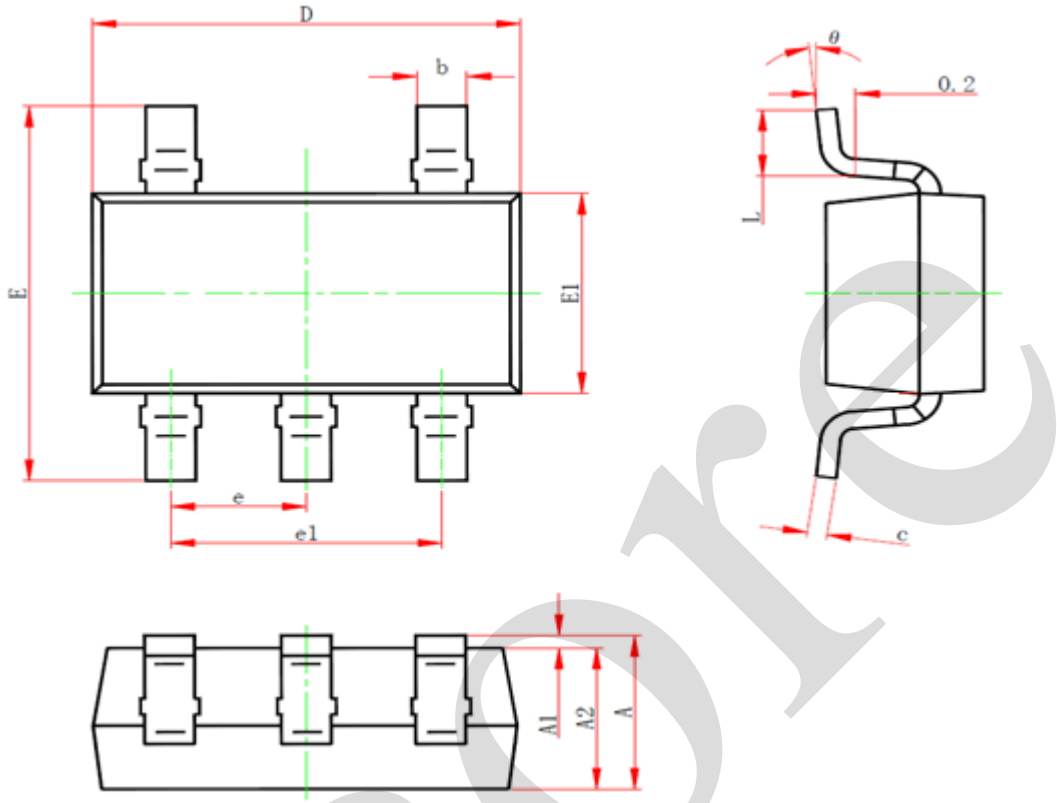


K-factor for AiP74AHC1G14 K-factor for AiP74AHCT1G14

Figure 16.Typical K-factor for relaxation oscillator

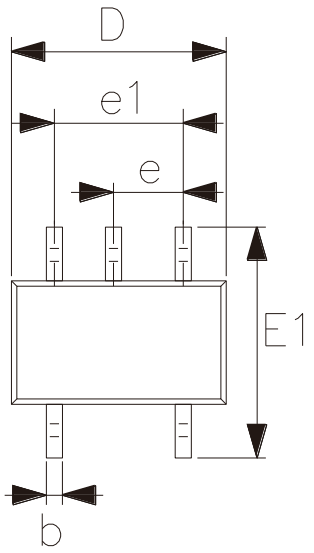
6、Package Information

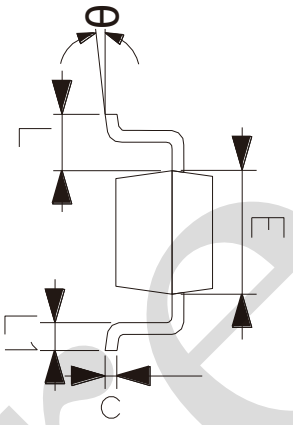
6.1、SOT23-5

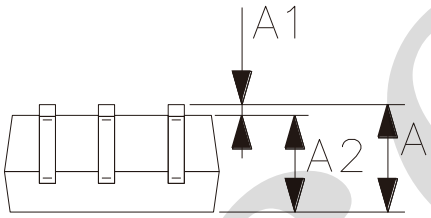


Symbol	Dimensions (mm)	
	Min.	Max.
A	-	1.26
A1	0.00	0.12
A2	1.00	1.20
b	0.30	0.50
c	0.10	0.20
D	2.82	3.02
E	2.60	3.00
E1	1.50	1.70
e	0.95	
e1	1.80	2.00
L	0.30	0.60
θ	0 °	8 °

6.2、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 °

7、Statements And Notes

7.1、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.									

7.2、Notes

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