

74HC2G17 Series

Dual non-inverting Schmitt trigger

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Features

- Operation voltage range: 2.0~6.0V
- High noise immunity
- Balanced propagation delays
- Low Power Consumption, 10- μ A Max ICC
- ESD Protection Exceeds JESD 22
 - 2000-V Human-Body Model (A114-A)
 - 200-V Machine Model (A115-A)
 - 1000-V Charged-Device Model (C101)

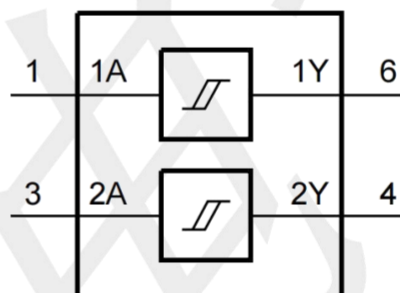
General Description

The TP74HC2G17 is dual buffers with Schmitt-trigger inputs. Inputs include clamp diodes. This enables the use of current limiting resistors to interface inputs to voltages in excess of VCC.

Applications

- AV Receiver
- Audio Dock: Portable
- IP Phones: Wired and Wireless
- Embedded PC
- Personal Digital Assistant(PDA)
- Power: Telecom DC/DC Module: Analog and Digital

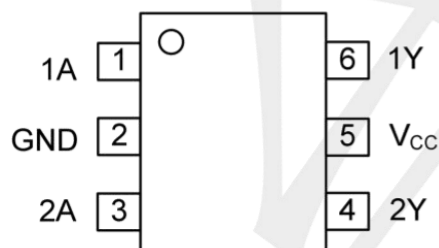
Logic Diagram



Ordering Information

ORDER NUMBER	PACKAGE DESCRIPTION	PACKAGE OPTION
74HC2G17GV	SOT23-6	Tape and Reel,3000
74HC2G17GW	SOT363	Tape and Reel,3000

Pin Configuratio



SOT23-6
SOT363

Function Table

INPUT(nA)	OUTPUT(nY)
H	H
L	L

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

Absolute Maximum Ratings

PARAMETER	SYMBOL	CONDITIONS	RATINGS	UNIT
Supply Voltage	V _{CC}		-0.5 ~ +7.0	V
Input Voltage	V _{IN}		-0.5 ~ +7.0	V
Output Voltage	V _{OUT}		-0.5 ~ +7.0	V
V _{CC} or GND Current	I _{CC}		±50	mA
Continuous Output Current	I _{OUT}	V _{OUT} =0~V _{CC}	±25	mA
Input Clamp Current	I _{IK}	V _{IN} <0	±20	mA
Output Clamp Current	I _{OK}	(V _{OUT} >V _{CC} or V _{OUT} <0)	±20	mA
Storage Temperature Range	T _{STG}		-65 ~ +150	°C
Operating Junction Temperature	T _J		-40 ~ +125	°C
Junction to Ambient	θ _{JA}	SOT-23-6	230	°C/W
		SOT363	280	°C/W

Note:

Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Recommended Operating Conditions (TA = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC}	Operating	2.0	5.0	6.0	V
Input Voltage	V _{IN}		0	5.0	V _{CC}	V
Output Voltage	V _{OUT}		0	5.0	V _{CC}	V

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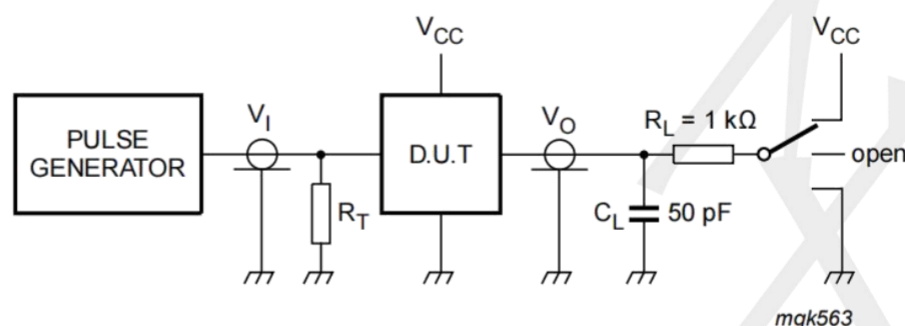
Electrical Characteristics (TA =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
positive-going threshold voltage	VT+	VCC=3.0V	--	2.0	1.5	V
		VCC=4.5V	--	3.0	3.15	V
		VCC=6.0V	--	3.6	4.2	V
negative-going threshold voltage	VT-	VCC=3.0V	0.3	1.5	--	V
		VCC=4.5V	1.35	2.3	--	V
		VCC=6.0V	1.65	2.9	--	V
hysteresis voltage	VH	VCC=3.0V	0.3	--	1.2	V
		VCC=4.5V	0.4	--	1.4	V
		VCC=6.0V	0.5	--	1.7	V
High-Level Output Voltage	VOH	VCC=2.0V, IOH=-20μA	1.9	2.0	--	V
		VCC=4.5V, IOH=-20μA	4.4	4.5	--	V
		VCC=6.0V, IOH=-20μA	5.9	6.0	--	V
		VCC=4.5V, IOH=-4.0mA	4.18	4.32	--	V
		VCC=6.0V, IOH=-5.2mA	5.68	5.81	--	V
Low-Level Output Voltage	VOL	VCC=2.0V, IOL= 20μA	--	0	0.1	V
		VCC=4.5V, IOL= 20μA	--	0	0.1	V
		VCC=6.0V, IOL= 20μA	--	0	0.1	V
		VCC=4.5V, IOH= 4.0mA	--	0.15	0.26	V
		VCC=6.0V, IOH= 5.2mA	--	0.16	0.26	V
Input Leakage Current	II	VIN=6.0V or GND	--	--	±0.1	uA
Quiescent Supply current	IQ	VIN=VCC or GND, IOU=0A	--	--	1.0	uA
input capacitance	CI		--	2.0	--	pF

Dynamic characteristics (TA =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
propagation delay	tpd	VCC=2.0	--	22	78	nS
		VCC=4.5	--	21	29	nS
		VCC=6.0	--	6.0	26	nS
transition time	tt	VCC=2.0	--	18	76	nS
		VCC=4.5	--	6.0	15	nS
		VCC=6.0	--	5.0	13	nS
power dissipation Cap	CPD	VI = GND to VCC	--	10	--	pF

TEST CIRCUIT AND WAVEFORMS



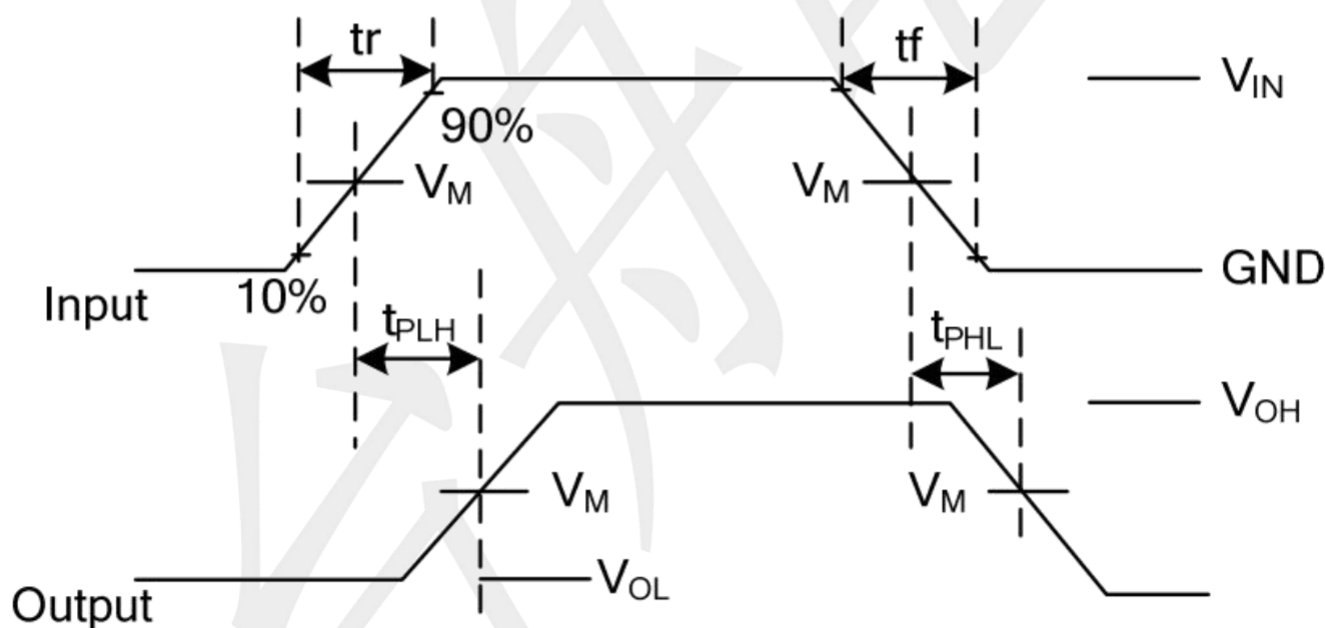
Definitions test circuit:

R_L = Load resistance.

C_L = Load capacitance including jig and probe capacitance.

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

Testcircuitformeasuringswitchingtimes

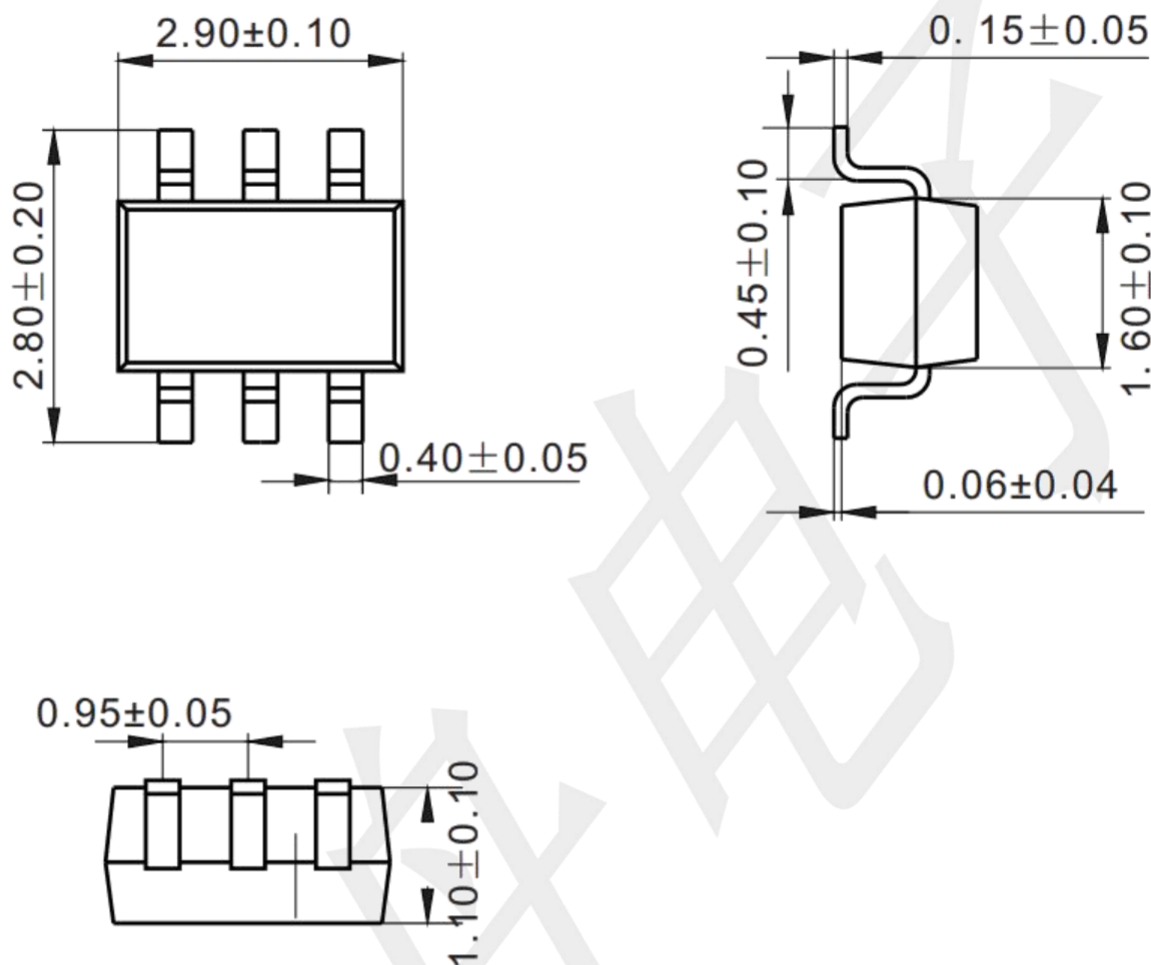


Notes:

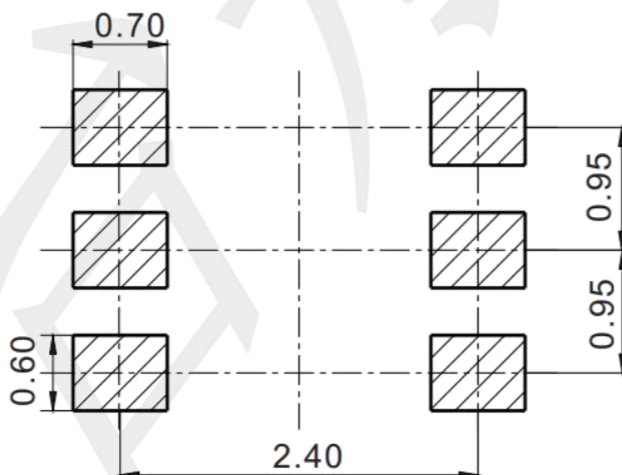
1. V_{OL} and V_{OH} are typical output drop that occur with the output load.
2. t_{PLH} and t_{PHL} are the same as t_{PD} .

Package information

SOT23-6 (Unit: mm)

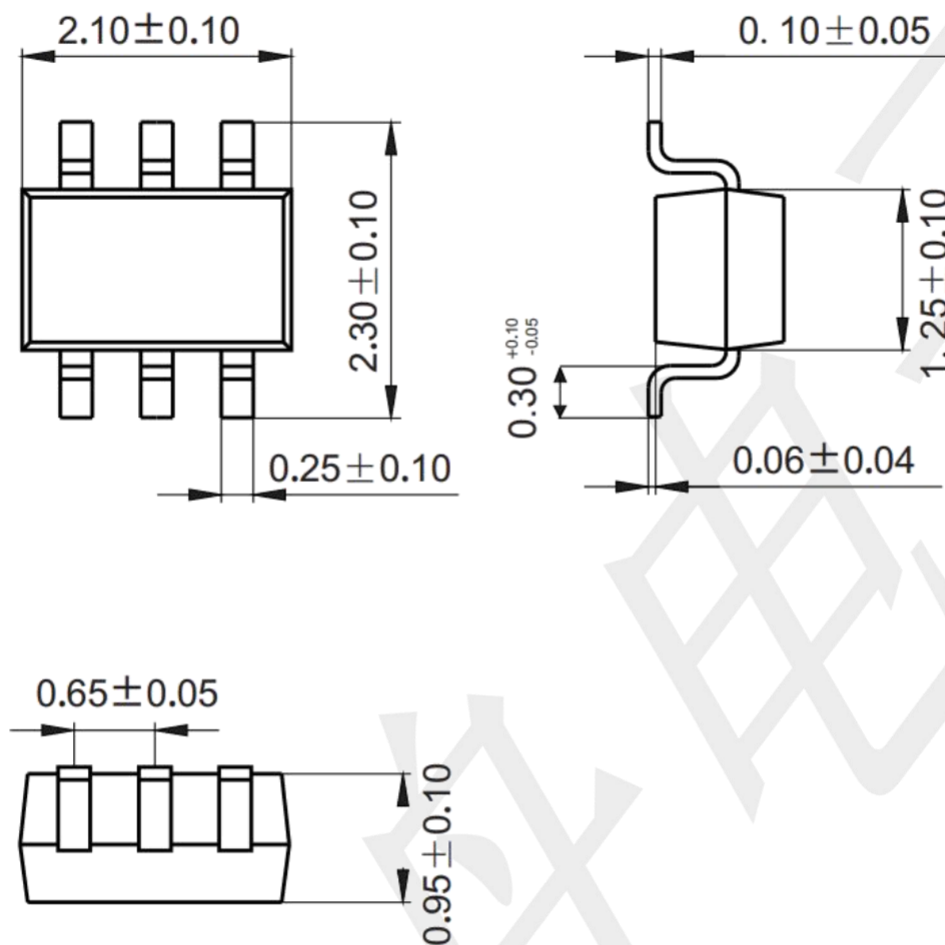


Mounting Pad Layout (unit: mm)



Package information

SOT363 (Unit: mm)



Mounting Pad Layout (unit: mm)

