

### SN74LS06N

Ver 1.00

#### Product Introduction

The SN74LS06N is an integrated circuit internally integrated with six inverters. Each inverter is independent of each other. The output port of the inverter is an open-leak output structure, which has the characteristics of buffer and driver. The minimum withstand voltage of the high-voltage collector is up to 25V. It can be used as an input interface for driving high-voltage circuits (such as driving MOS) or for driving high-current loads (such as lamps, motors or relays).

#### Product Features

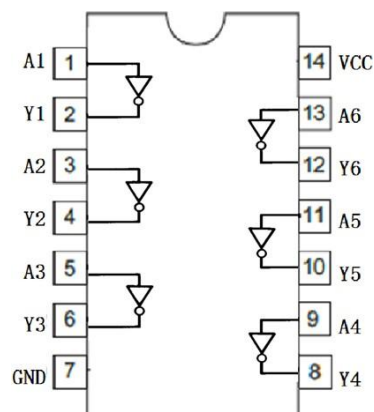
- The minimum withstand voltage of High Voltage Collector open drain output is 25V
- Greater driving power
- Input clamping diode to simplify system design
- Fully compatible with TTL/DTL input and output logic level
- Package : DIP14, SOP14

#### Product Applications

- Digital logic driver
- Industrial control applications
- Other application areas Battery-powered equipment

#### Package and Pin Assignment

SOP14 or DIP14.			
Pin NO	Pin Definition	Pin NO	Pin Definition
1	Input A1	14	Supply VCC
2	Output Y1	13	Input A6
3	Input A2	12	Output Y6
4	Output Y2	11	Input A5
5	Input A3	10	Output Y5
6	Output Y3	9	Input A4
7	Supply GND	8	Output Y4

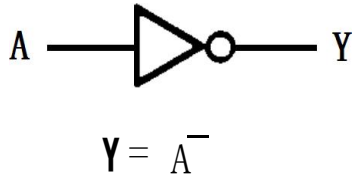


#### Absolute Maximum Ratings

Item	Symbol	Maximum Ratings	Unit
Supply voltage	$V_{CC}$	7	V
Input voltage	$V_I$	7	V
Power dissipation	$P_D$	500	mW
Operating temperature	$T_A$	0-70	°C
Storage temperature	$T_S$	-65-150	°C
welding temperature	$T_W$	260	°C, 10s

Note: the limit parameter is the limit value that cannot be exceeded under any condition. Once this limit is exceeded, it may cause physical damage such as deterioration of the product. At the same time, the chip can not be guaranteed to work properly when it is close to the limit parameters.

## ■ Block Diagram



## ■ Function Table

Input	Output
A	Y
L	H
H	L

H = High Logic Level

L = Low Logic Level

## ■ Recommended Operating Conditions

Item	Symbol	Min	Tpy	Max	Unit
Supply voltage	V <sub>CC</sub>	4.75	5	5.25	V
Input voltage	V <sub>IH</sub>	2	—	—	V
	V <sub>IL</sub>	—	—	0.7	V
Output voltage	V <sub>OH</sub>	—	—	2.5	V
Output current	I <sub>OL</sub>	—	—	48	mA
Operating temperature	T <sub>a</sub>	0	—	60	°C

## ■ Electrical Characteristics

(T<sub>a</sub>=25°C, Unless specified)

Item	Symbol	Min	Tpy	Max	Unit	Conditions
Leakage current	I <sub>OH</sub>	—	—	250	μA	V <sub>CC</sub> =4.75V, V <sub>IL</sub> =0.7V, V <sub>OH</sub> =2.5V
Output voltage	V <sub>OL</sub>	—	0.15	0.4	V	V <sub>CC</sub> =4.75V, V <sub>IH</sub> =2V
		—	0.20	0.5		
Input current	I <sub>I</sub>	—	0.1	100	μA	V <sub>CC</sub> =5.25V, V <sub>I</sub> =7V
	I <sub>IH</sub>	—	0.1	20	μA	V <sub>CC</sub> =5.25V, V <sub>I</sub> =2.7V
	I <sub>IL</sub>	—	-0.20	-0.4	mA	V <sub>CC</sub> =5.25V, V <sub>I</sub> =0.4V
Supply current	I <sub>CCH</sub>	—	21	48	mA	V <sub>CC</sub> =5.25V, all V <sub>I</sub> =GND
	I <sub>CCL</sub>	—	24	51	mA	V <sub>CC</sub> =5.25V, all V <sub>I</sub> =V <sub>CC</sub>
Input clamp voltage	V <sub>IK</sub>	—	0.9	-1.5	V	V <sub>CC</sub> =4.75V, I <sub>I</sub> = -18mA

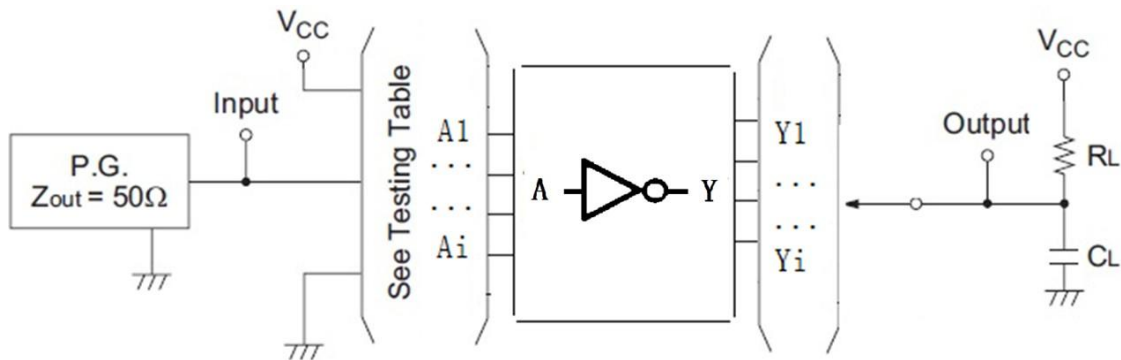
## ■ Switching Characteristics

(T<sub>a</sub>=25°C, Unless specified)

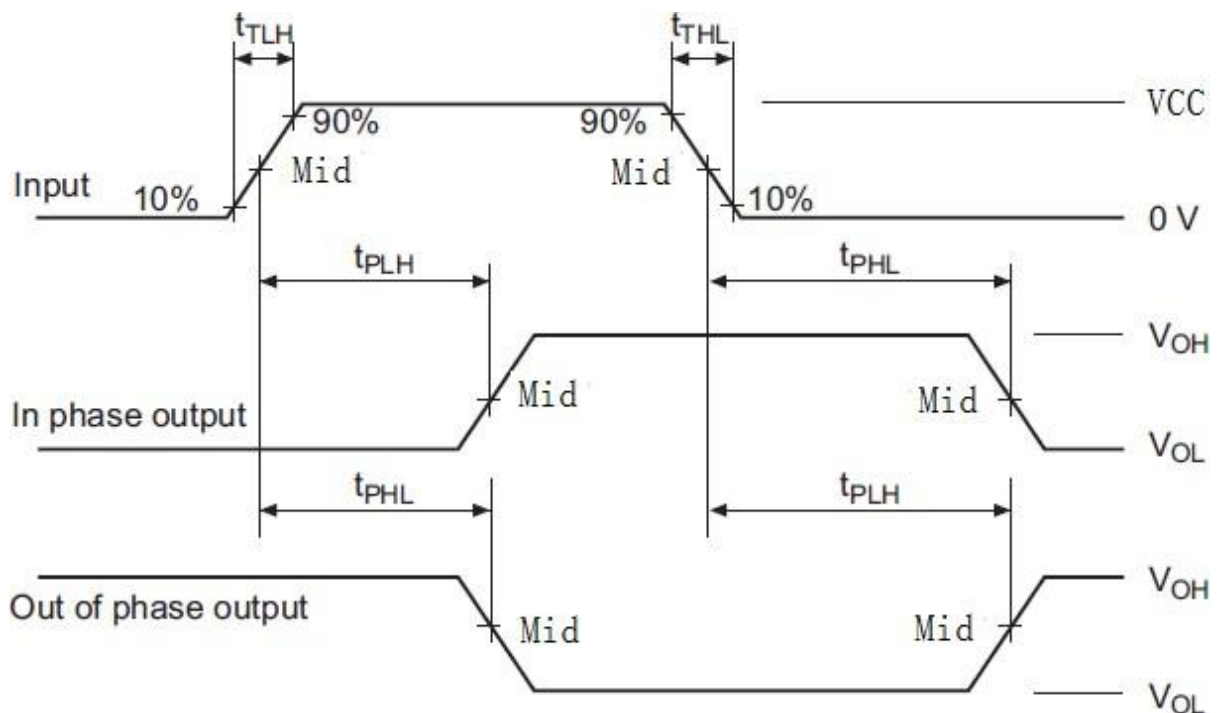
Item	Symbol	Min	Tpy	Max	Unit	Conditions
Propagation delay time	t <sub>PLH</sub>	—	70	—	ns	V <sub>CC</sub> =5V, C <sub>L</sub> =16pF, R <sub>L</sub> =2KΩ
	t <sub>PHL</sub>	—	10	—	ns	

## ■ Testing Method

### 1、Test Circuit



### 2、Waveform



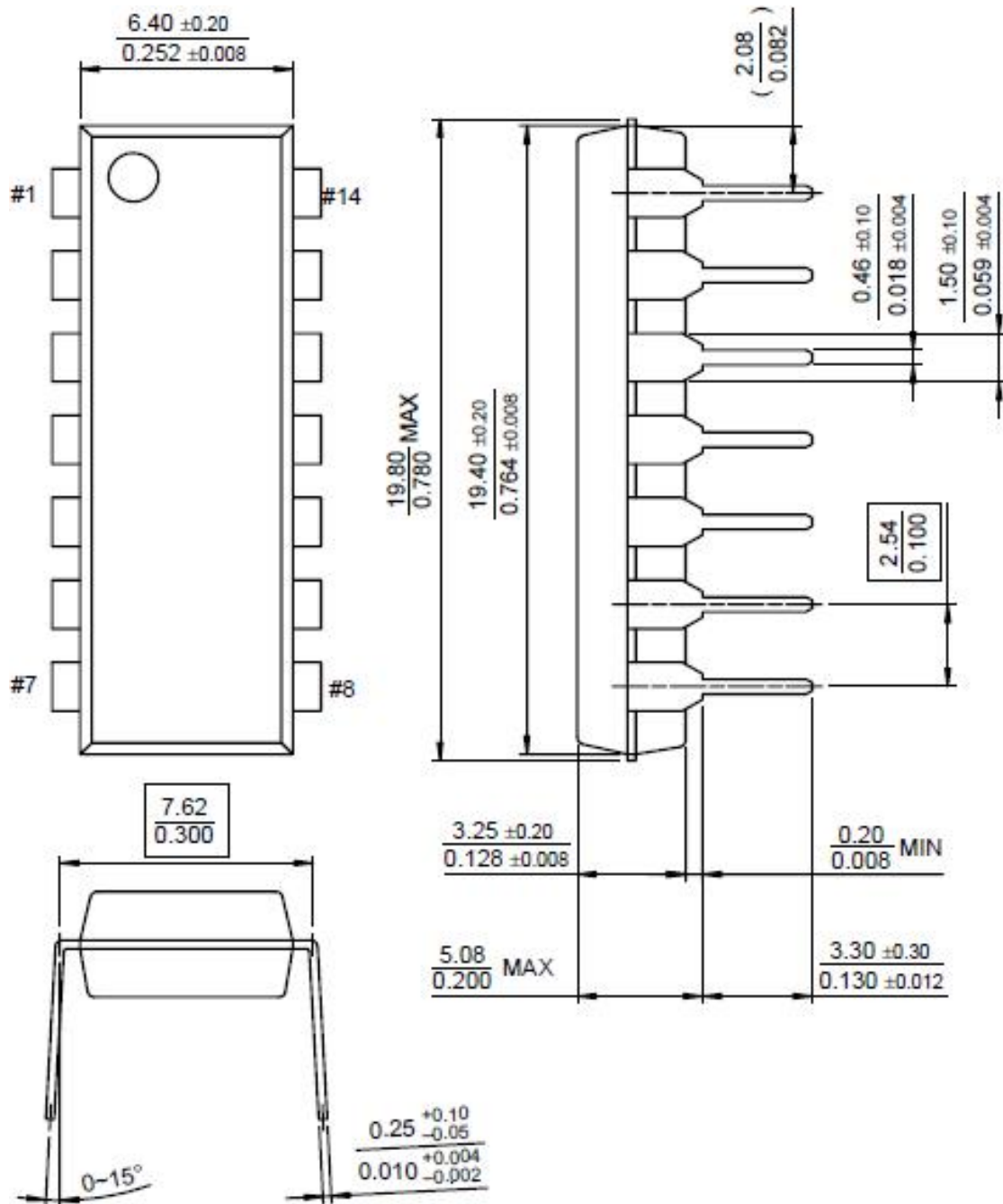
Note:

1. See Testing Table refers to the corresponding test items in the switch characteristic table.
2. the CL capacitor is an external patch capacitor (0603), which is connected to the output pin and the capacitor is near the chip GND.
3. Input: port input level,  $f=500\text{kHz}$ ,  $D=50\%$ ,  $t_{TLH}=t_{THL}$  or less 20ns;
4. Output: Y output test port (Out of Phase Output, In Phase Output)

## ■ Package Dimensions

Unit : mm /inch

DIP14



SOP14

