GD54/74LS06

HEX INVERTED BUFFERS WITH OPEN-COLLECTOR OUTPUTS

Features

- High Output Voltage(30V)
- High Speed(t_{PD}=8.5nS typical)
- Low Power Dissipation(P_D=18mW per Gate)

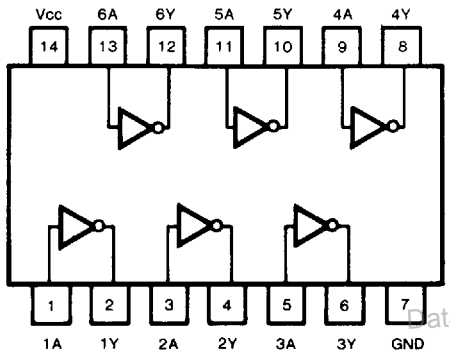
Description

This device contains hex inverted buffers with open-collector. It performs the Boolean function $Y=\overline{A}$ in positive Logic.

Function Table(each inverter)

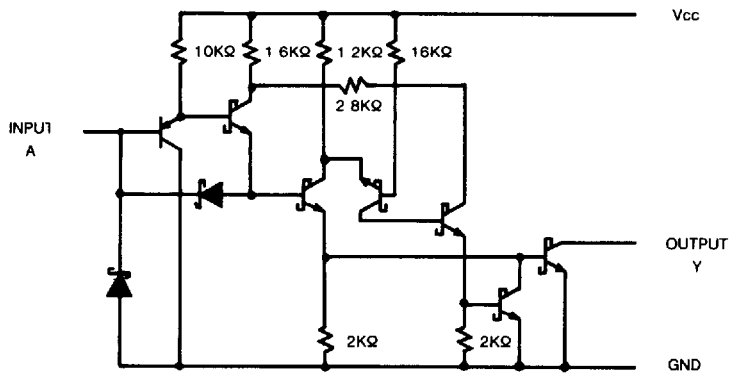
INPUT	OUTPUT
A	Y
H	L
L	H

Pin Configuration



Suffix-Blank. Plastic Dual In Line Package
Suffix-J : Ceramic Dual In Line Package

Circuit Schematic (each inverter)



Absolute Maximum Ratings

- Supply voltage, V_{CC} 7V
- Input voltage 5.5V
- Output voltage 30V
- Operating free-air temperature range 54LS ..... −55°C to 125°C
  74LS ..... 0°C to 70°C
- Storage temperature range ..... −65°C to 150°C

Recommended Operating Conditions

SYMBOL	PARAMETER		MIN	NOM	MAX	UNIT
V_{CC}	Supply voltage	54	4.5	5	5.5	V
		74	4.75	5	5.25	
V_{OH}	High-level output voltage	54,74			30	V
I_{OL}	Low-level output current	54			30	mA
		74			40	
T_A	Operating free-air temperature	54	−55		125	°C
		74	0		70	

Electrical Characteristics over recommended operating free-air temperature range (unless otherwise noted)

SYMBOL	PARAMETER		TEST CONDITIONS		MIN	TYP (Note 1)	MAX	UNIT
V_{IH}	High-level input voltage				2			V
V_{IL}	Low-level input voltage			54			0.8	V
				74			0.8	
V_{IK}	Input clamp voltage		V_{CC}=Min, I_I=−12mA				−1.5	V
I_{OH}	High-level output current		V_{CC}=Min, V_{IL}=Max, V_{OH}=Max				250	μA
V_{OL}	Low-level output voltage		V_{CC}=Min, V_{IH}=Min	I_{OL}=16mA			0.4	V
				I_{OL}=Max			0.7	
I_I	Input current at maximum input voltage		V_{CC}=Max, V_I=5.5V				1	mA
I_{IH}	High-level input current		V_{CC}=Max, V_I=2.7V				20	μA
I_{IL}	Low-level input current		V_{CC}=Max, V_I=0.4V				−0.2	mA
I_{CCH}	Supply current	Total with outputs high	V_{CC}=Max			9	18	mA
I_{CCL}		Total with outputs low	V_{CC}=Max			35	60	mA

Note 1 All typical values are at V_{CC}=5V, T_A=25°C

Switching Characteristics, V_{CC} = 5V, T_A = 25°C

SYMBOL	PARAMETER	TEST CONDITION#	MIN	TYP	MAX	UNIT
t_{PLH}	Propagation delay time, low-to-high-level output	C_L=15pF, R_L=110Ω		7	16	ns
t_{PHL}	Propagation delay time, high-to-low-level output			10	20	

#For load circuit and voltage waveforms, see page 3-11