5406/7406 Hex Inverter Buffer/Driver with Open-Collector High-Voltage Output

	Schottky TTL					High-Speed TTL					Low-Power Schottky TTL					Standatd TTL					Low-Power TTL				
	Device Type	Package				Device Type	Package				Device Type	Package				Device Type	Package				Device Type	Package			
		C	P	M	CF		C	P	M	CF		C	P	M	CF		C	P	M	CF		C	P	M	CF
T. I.																SN5406	J ①			W①					
																SN7406	J ①	N①							
FAIRCHILD																FM5406/FM9N06	D①			F①					
																FC7406/FC9N06	D①	P①							
MOTOROLA																									
																SN7406		P①							
N. S. C.																DM5406	J ①	N①		W①					
																DM7406	J ①	N①							
PHILIPS																									
																N7406		①							
SIGNETICS																S5406	F ①	A①		W①					
																N7406	F ①	A①							
SIEMENS																									
																FLH481		①							
FUJITSU																									
HITACHI																									
																HD7406	①	P①							
MITSUBISHI																									
																M53206		$\overline{P}$①							
NEC																									
TOSHIBA																									
																TD7406		P①							

Electrical Characteristics SN7406/SN5406

absolute maximum ratings over operating free-air temperature range

Supply voltage, V_{CC}	7V	Operating free-air temperature range	SN54'	−55°C to 125°C
Input voltage	5.5V		SN74'	0°C to 70°C
Off-state (high-level) voltage applied to open-collector outputs	30V	Storage temperature range		−65°C to 150°C

recommended operating conditions

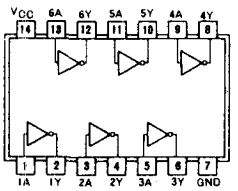
	SN5406			SN7406			UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V_{CC}	4.5	5	5.5	4.75	5	5.25	V
High-level output voltage, V_{OH}			30			30	V
Low-level output current, I_{OL}			30			40	mA
Operating free-air temperature, T_A	−55		125	0		70	°C

electrical characteristics over recommended operating free-air temperature range

PARAMETER		TEST CONDITIONS†		MIN	TYP‡	MAX	UNIT
V_{IH}	High-level input voltage			2			V
V_{IL}	Low-level input voltage					0.8	V
V_I	Input clamp voltage	V_{CC}=MIN, I_I=−12mA				−1.5	V
I_{OH}	High-level output current	V_{CC}=MIN, V_{IL}=V_{IL} max, V_{OH}=MAX				250	μA
V_{OL}	Low-level output voltage	V_{CC}=MIN, V_{IH}=2V, I_{OL}=16mA				0.4	V
		V_{CC}=MIN, V_{IH}=2V, 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_{IH}=2.4V				40	μA
I_{IL}	Low-level input current	V_{CC}=MAX, V_{IL}=0.4V				−1.6	mA
I_{CCH}	Supply current	V_{CC}=MAX	Total, outputs high		30	48	mA
I_{CCL}	Supply current		Total, outputs low		32	51	mA
I_{CC}	Supply current	V_{CC}=5V	Average per gate (50% duty cycle)		5.17		mA
t_{PLH}	Propagation delay time, low-to-high-level output	V_{CC}=5V, T_A=25°C,			10	15	ns
t_{PHL}	Propagation delay time, high-to-low-level output	C_L=15pF, R_L=110Ω			15	23	ns

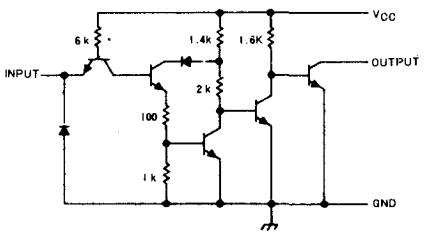
Pin Assignment (Top View)

①



positive logic:
$Y=\overline{A}$

Schamatic (each gate)



'06 CIRCUIT

Resistor values shown are nominal and in ohms.

†For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡All typical values are at V_{CC}=5V, T_A=25°C.