

TC74HC7266AP, TC74HC7266AF

QUAD EXCLUSIVE NOR GATE

The TC74HC7266A are high speed CMOS QUAD EXCLUSIVE NOR GATE fabricated with silicon gate C²MOS technology.

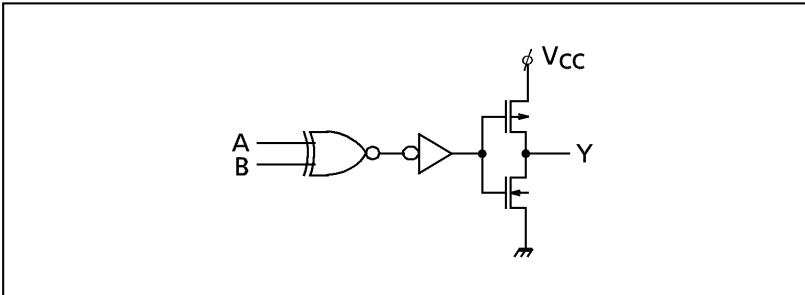
They achieve the high speed operation similar to equivalent LSTTL while maintaining the CMOS low power dissipation. Each output has a buffer, which provide high noise immunity and stable output.

All inputs are equipped with protection circuits against static discharge or transient excess voltage.

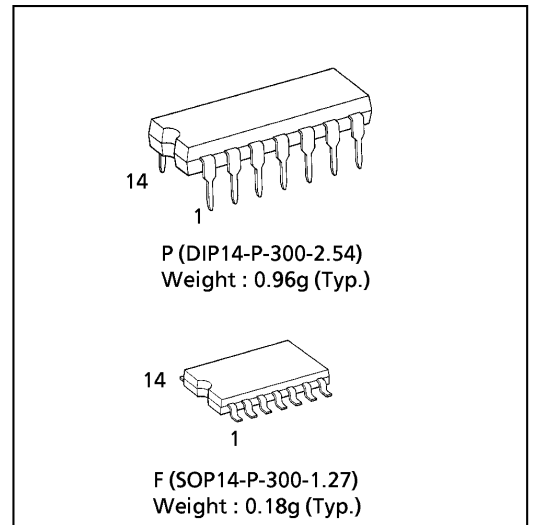
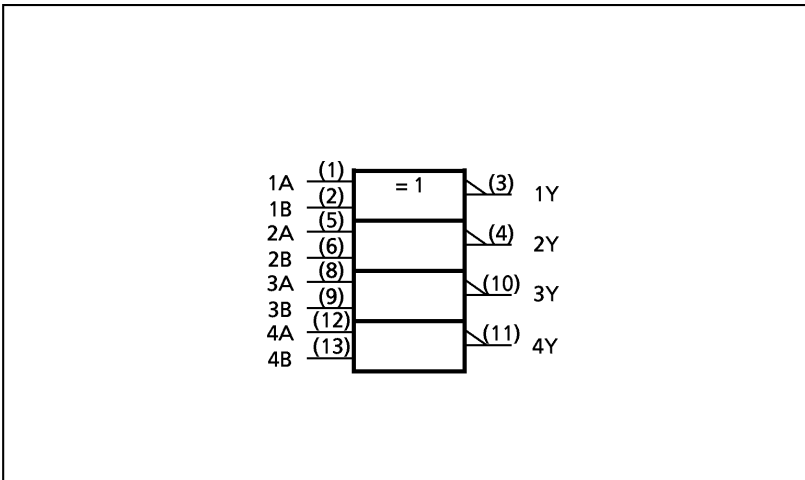
FEATURES :

- High Speed..... $t_{pd} = 10\text{ns}(\text{typ.})$ at $V_{CC} = 5\text{V}$
- Low Power Dissipation..... $I_{CC} = 1\mu\text{A}(\text{Max.})$ at $T_a = 25^\circ\text{C}$
- High Noise Immunity..... $V_{NIH} = V_{NIL} = 28\% V_{CC} (\text{Min.})$
- Output drive Capability..... 10 LSTTL Loads
- Symmetrical Output Impedance... $|I_{OH}| = I_{OL} = 4\text{mA} (\text{Min.})$
- Balanced Propagation Delays..... $t_{pLH} \approx t_{pHL}$
- Wide Operating Voltage Range... $V_{CC} (\text{opr.}) = 2\text{V} \sim 6\text{V}$
- Pin and Function Compatible with 74LS266

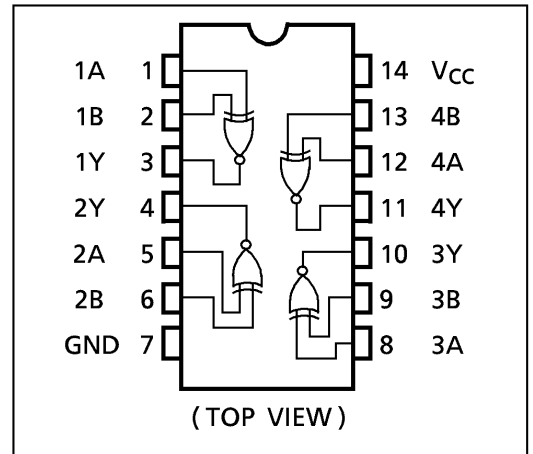
SYSTEM DIAGRAM



IEC LOGIC SYMBOL



PIN ASSIGNMENT



TRUTH TABLE

A	B	Y
L	L	H
L	H	L
H	L	L
H	H	H

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage Range	V _{CC}	-0.5~7	V
DC Input Voltage	V _{IN}	-0.5~V _{CC} +0.5	V
DC Output Voltage	V _{OUT}	-0.5~V _{CC} +0.5	V
Input Diode Current	I _{IK}	±20	mA
Output Diode Current	I _{OK}	±20	mA
DC Output Current	I _{OUT}	±25	mA
DC V _{CC} /Ground Current	I _{CC}	±50	mA
Power Dissipation	P _D	500 (DIP)* / 180 (SOP)	mW
Storage Temperature	T _{stg}	-65~150	°C

*500mW in the range of Ta = -40°C~65°C. From Ta = 65°C to 85°C a derating factor of -10mW/°C shall be applied until 300mW.

RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{CC}	2~6	V
Input Voltage	V _{IN}	0~V _{CC}	V
Output Voltage	V _{OUT}	0~V _{CC}	V
Operating Temperature	T _{opr}	-40~85	°C
Input Rise and Fall Time	t _r , t _f	0~1000 (V _{CC} =2.0V) 0~500 (V _{CC} =4.5V) 0~400 (V _{CC} =6.0V)	ns

DC ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	V _{CC} (V)	Ta = 25°C			Ta = -40~85°C		UNIT									
				MIN.	TYP.	MAX.	MIN.	MAX.										
High - Level Input Voltage	V _{IH}		2.0	1.50	—	—	1.50	—	V									
			4.5	3.15	—	—	3.15	—										
			6.0	4.20	—	—	4.20	—										
Low - Level Input Voltage	V _{IL}		2.0	—	—	0.50	—	0.50	V									
			4.5	—	—	1.35	—	1.35										
			6.0	—	—	1.80	—	1.80										
High - Level Output Voltage	V _{OH}	V _{IN} = V _{IH} or V _{IL}	I _{OH} = -20μA	2.0	1.9	2.0	—	1.9	V									
				4.5	4.4	4.5	—	4.4		—								
				6.0	5.9	6.0	—	5.9		—								
Low - Level Output Voltage	V _{OL}	V _{IN} = V _{IH} or V _{IL}	I _{OL} = 20μA	2.0	—	0.0	0.1	—	0.1	V								
				4.5	—	0.0	0.1	—	0.1									
				6.0	—	0.0	0.1	—	0.1									
Input Leakage Current	I _{IN}	V _{IN} = V _{CC} or GND	6.0	—	—	±0.1	—	±1.0	μA									
										Quiescent Supply Current	I _{CC}	V _{IN} = V _{CC} or GND	6.0	—	—	1.0	—	10.0

AC ELECTRICAL CHARACTERISTICS ($C_L = 15\text{pF}$, $V_{CC} = 5\text{V}$, $T_a = 25^\circ\text{C}$, Input $t_r = t_f = 6\text{ns}$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Transition Time	t_{TLH} t_{THL}		—	4	8	ns
Propagation Delay Time	t_{pLH} t_{pHL}		—	10	17	

AC ELECTRICAL CHARACTERISTICS ($C_L = 50\text{pF}$, Input $t_r = t_f = 6\text{ns}$)

PARAMETER	SYMBOL	TEST CONDITION	$T_a = 25^\circ\text{C}$			$T_a = -40\sim 85^\circ\text{C}$		UNIT	
			$V_{CC}(\text{V})$	MIN.	TYP.	MAX.	MIN.		MAX.
Output Transition Time	t_{TLH} t_{THL}		2.0	—	30	75	—	95	ns
			4.5	—	8	15	—	19	
			6.0	—	7	13	—	16	
Propagation Delay Time	t_{pLH} t_{pHL}		2.0	—	40	100	—	125	ns
			4.5	—	12	20	—	25	
			6.0	—	10	17	—	21	
Input Capacitance	C_{IN}		—	5	10	—	10	pF	
Power Dissipation Capacitance	C_{PD}	Note (1)	—	30	—	—	—		

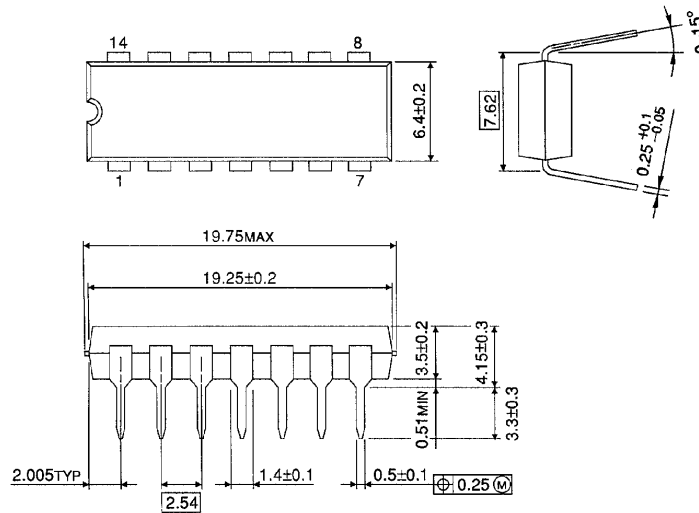
Note (1) C_{PD} is defined as the value of the internal equivalent capacitance which is calculated from the operating current consumption without load.

Average operating current can be obtained by the equation :

$$I_{CC}(\text{opr}) = C_{PD} \cdot V_{CC} \cdot f_{IN} + I_{CC}/4 \text{ (per Gate)}$$

DIP 14PIN PACKAGE DIMENSIONS (DIP14-P-300-2.54)

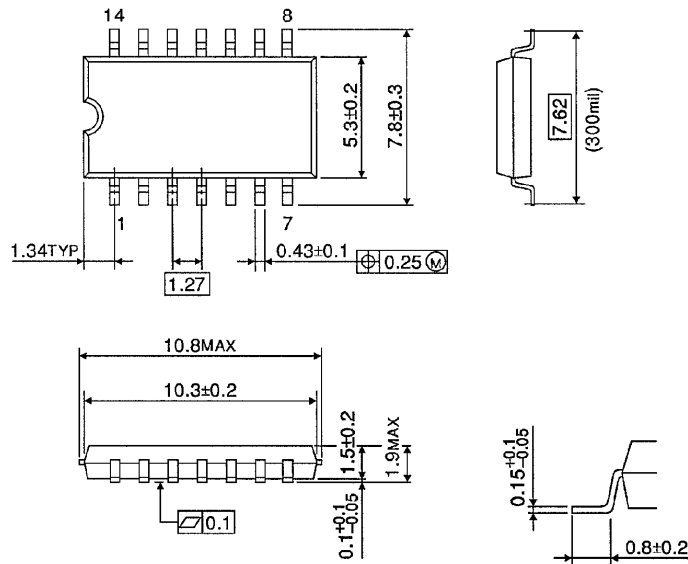
Unit in mm



Weight : 0.96g (Typ.)

SOP 14PIN (200mil BODY) PACKAGE DIMENSIONS (SOP14-P-300-1.27)

Unit in mm



Weight : 0.18g (Typ.)

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