

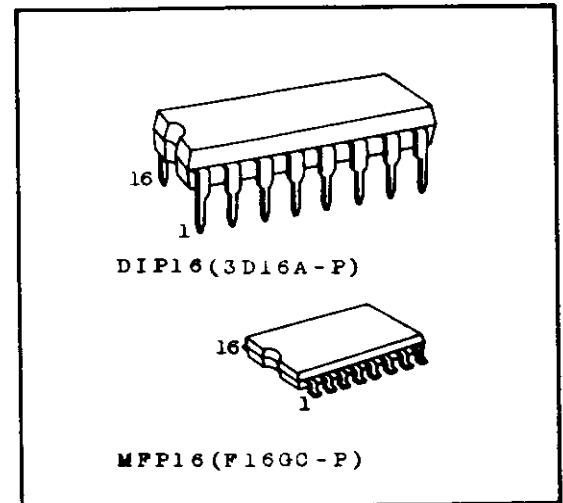
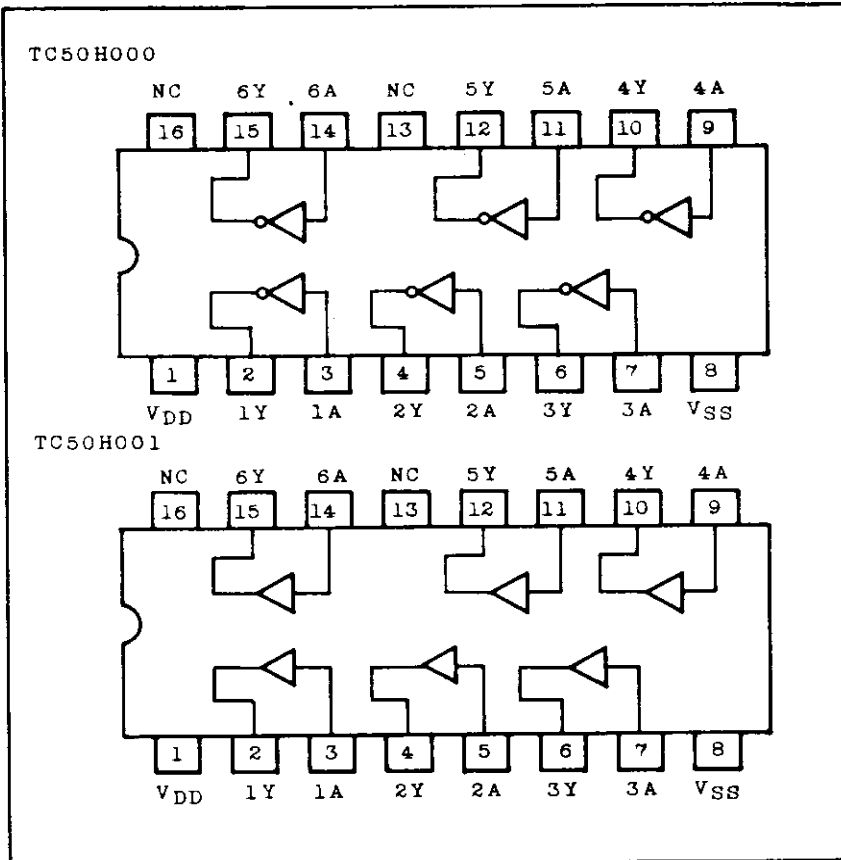
TC50H00P/F

TC50H001P/F

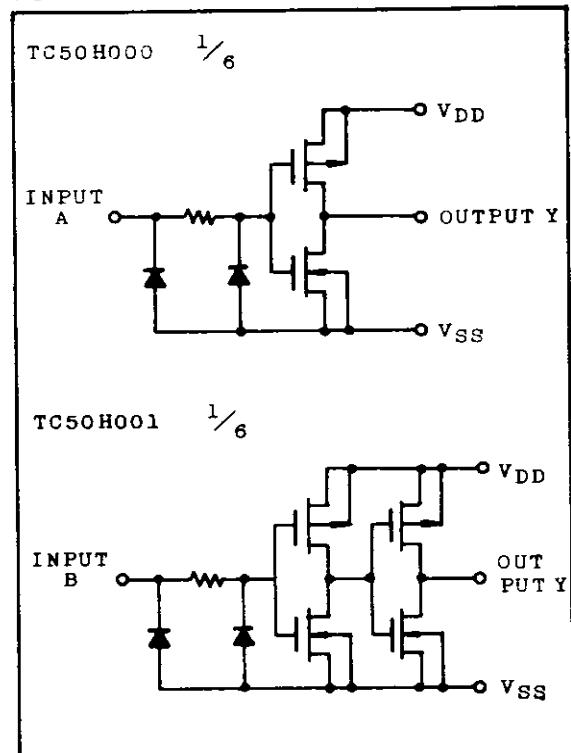
C²MOS DIGITAL INTEGRATED CIRCUIT
SILICON MONOLITHIC

TC50H000 HEX BUFFER/CONVERTER INVERTING TYPE

TC50H001 HEX BUFFER/CONVERTER NONINVERTING TYPE



PIN CONNECTION



MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{DD}	V _{SS} -0.5 ~ V _{SS} +10	V
Input Voltage	V _{IN}	V _{SS} -0.5 ~ V _{SS} +18	V
Output Voltage	V _{OUT}	V _{SS} -0.5 ~ V _{DD} +0.5	V
Input Current	I _{IN}	±10	mA
Power Dissipation	P _D	300 (DIP) / 180 (MFP)	mW
Storage Temperature	T _{stg}	-65 ~ 150	°C
Lead Temp./Time	T _{sol}	260°C · 10 sec	

RECOMMENDED OPERATING CONDITIONS (V_{SS}=0V)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{DD}	—	2.0	—	8.0	V
Input Voltage	V _{IN}	—	0	—	18	V
Operating Temperature	T _{opr}	—	-40	—	85	°C

TC50H000P/F

TC50H001P/F

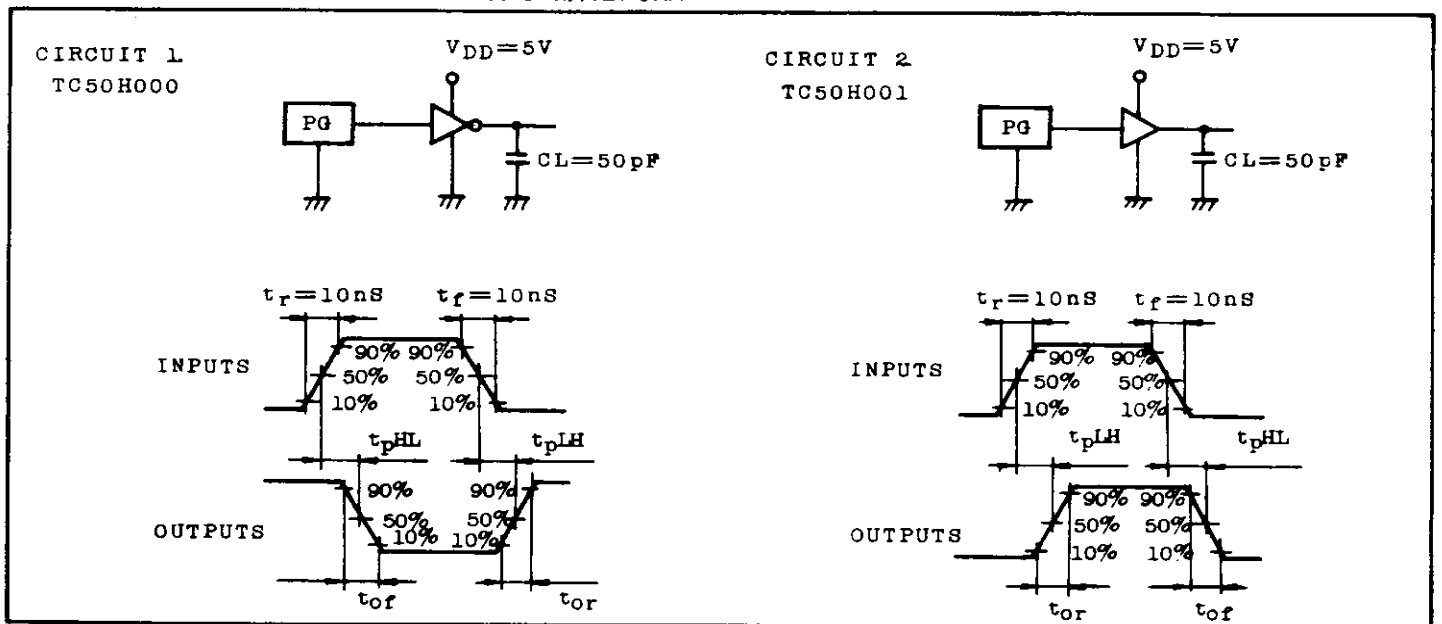
ELECTRICAL CHARACTERISTICS ($V_{SS}=0.0V$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	V _{DD} (V)	-40°C		25°C			85°C		UNIT
				MIN.	MAX.	MIN.	TYP.	MAX.	MIN.	MAX.	
High Level Output Voltage	V _{OH}	I _{OUT} < 1μA V _{IN} =V _{SS} , V _{DD}	5	4.95	-	4.95	5.0	-	4.95	-	V
Low Level Output Voltage	V _{OL}	I _{OUT} < 1μA V _{IN} =V _{SS} , V _{DD}	5	-	0.05	-	0.0	0.05	-	0.05	
High Level Output Current	I _{OH}	V _{OH} =4.6V V _{IN} =V _{SS} , V _{DD}	5	-1.04	-	-0.88	-	-	-0.72	-	mA
Low Level Output Current	I _{OL}	V _{OL} =0.4V V _{IN} =V _{SS} , V _{DD}	5	2.8	-	2.2	-	-	1.6	-	
Input Voltage	High Level	V _{IH}	5	4.0	-	4.0	-	-	4.0	-	V
	Low Level	V _{IL}									
Input Current	"H" Level	I _{IH}	8	-	0.3	-	10 ⁻⁵	0.3	-	1.0	μA
	"L" Level	I _{IL}	8	-	-0.3	-	-10 ⁻⁵	-0.3	-	-1.0	
Quiescent Supply Current	I _{DD}	*V _{IN} =V _{SS} , V _{DD}	5	-	5.0	-	10 ⁻³	5.0	-	25	μA

* All valid input combinations.

SWITCHING CHARACTERISTICS ($T_a=25^\circ C$, $V_{SS}=0V$, $V_{DD}=5V$, $C_L=50pF$)

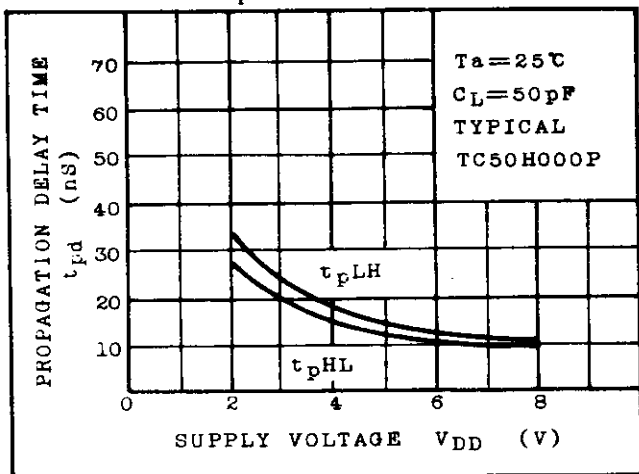
CHARACTERISTIC	SYMBOL	TEST CONDITION	TC50H000			TC50H001			UNIT	
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Output Rise Time	t _{or}	Fig.1, 2	-	20	35	-	24	35	ns	
Output Fall Time	t _{of}		-	13	30	-	13	30		
Propagation Delay Time	Low-High	t _{pLH}	Fig.1, 2	-	14	21	-	18	27	ns
	High-Low	t _{pHL}		-	12	18	-	15	23	
Input Capacitance	C _{IN}		-	5		-	5		pF	

SWITCHING TIME TEST CIRCUIT AND WAVEFORM ($f_{IN}=1MHz$, Duty Cycle=50%)

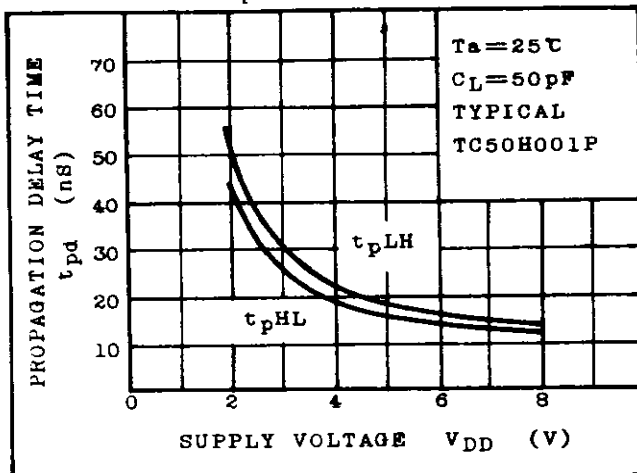
TC50H000P/F

TC50H001P/F

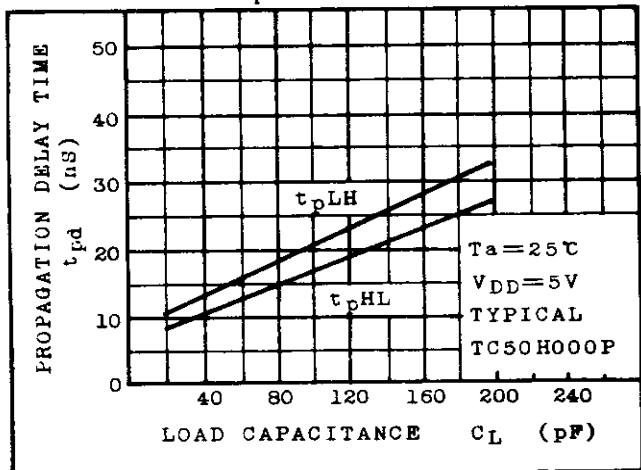
$t_{pd} - V_{DD}$



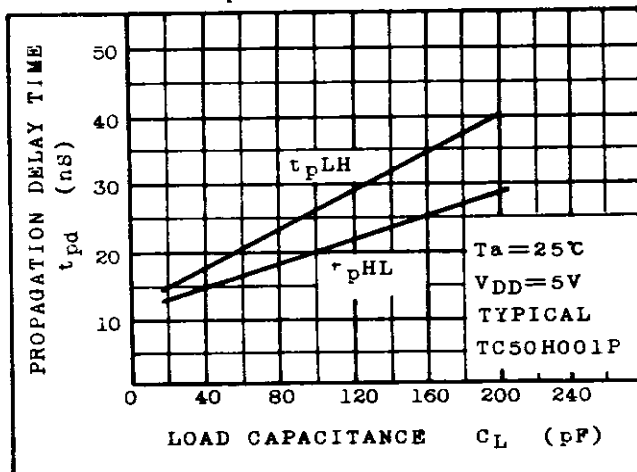
$t_{pd} - V_{DD}$



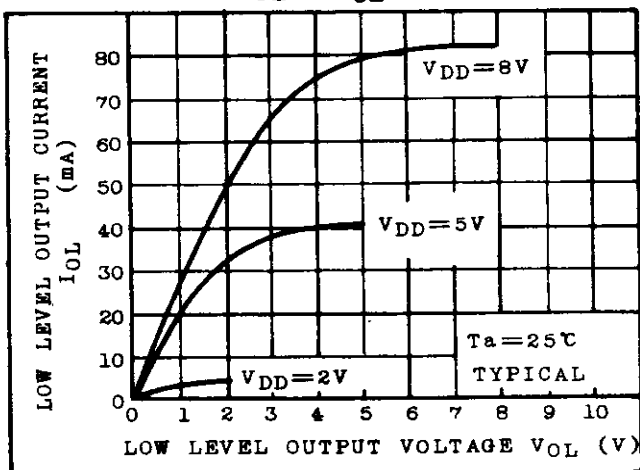
$t_{pd} - C_L$



$t_{pd} - C_L$



$I_{OL} - V_{OL}$



$I_{OH} - (V_{DD} - V_{OH})$

