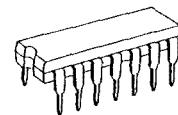


TC4584B HEX SCHMITT TRIGGER

The TC4584B is the 6-circuit inverter having the Schmitt trigger function at the input terminal.

That is, since the circuit threshold level voltages at the leading and trailing edges of input waveform are different (V_P , V_N), the TC4584B can be used in the broad range application including line receiver, waveform shaping circuit, astable multivibrator, monostable multivibrator, etc. In addition to ordinary inverter.

Since the pins are compatible with the TC4069UB, the substitution is also possible.



P (DIP14-P-300)



F (SOP14-P-300)

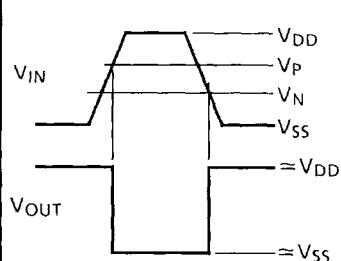
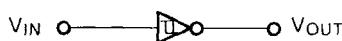


FN (SOL14-P-150)

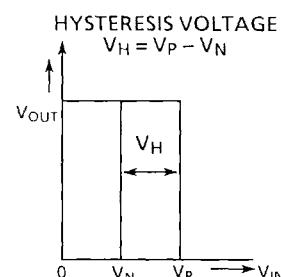
ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V_{DD}	$V_{SS} - 0.5 \sim V_{SS} + 20$	V
Input Voltage	V_{IN}	$V_{SS} - 0.5 \sim V_{DD} + 0.5$	V
Output Voltage	V_{OUT}	$V_{SS} - 0.5 \sim V_{DD} + 0.5$	V
DC Input Current	I_{IN}	± 10	mA
Power Dissipation	P_D	300 (DIP) / 180 (SOIC)	mW
Operating Temperature Range	T_A	-40~85	°C
Storage Temperature Range	T_{STG}	-65~150	°C
Lead Temp./Time	T_{SOL}	260°C · 10sec	

INPUT / OUTPUT VOLTAGE CHARACTERISTIC

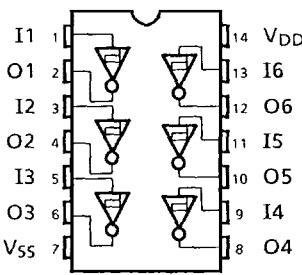


* INPUT-OUTPUT
VOLTAGE WAVEFORM



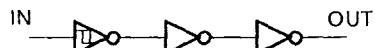
* TRANSFER
CHARACTERISTICS

PIN ASSIGNMENT



(TOP VIEW)

LOGIC DIAGRAM



TC4584BP/BF/BFN

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

CHARACTERISTICS	SYMBOL		MIN.	TYP.	MAX.	UNITS
DC Supply Voltage	V_{DD}		3	-	18	V
Input Voltage	V_{IN}		0	-	V_{DD}	V

STATIC ELECTRICAL CHARACTERISTICS ($V_{SS} = 0V$)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	V_{DD} (V)	-40°C		25°C			85°C		UNITS
				MIN.	MAX.	MIN.	TYP.	MAX.	MIN.	MAX.	
High-Level Output Voltage	V_{OH}	$ I_{OUT} < 1\mu A$ $V_{IN} = V_{SS}, V_{DD}$	5	4.95	-	4.95	5.00	-	4.95	-	V
			10	9.95	-	9.95	10.00	-	9.95	-	
			15	14.95	-	14.95	15.00	-	14.95	-	
Low-Level Output Voltage	V_{OL}	$ I_{OUT} < 1\mu A$ $V_{IN} = V_{SS}, V_{DD}$	5	-	0.05	-	0.00	0.05	-	0.05	V
			10	-	0.05	-	0.00	0.05	-	0.05	
			15	-	0.05	-	0.00	0.05	-	0.05	
Output High Current	I_{OH}	$V_{OH} = 4.6V$ $V_{OH} = 2.5V$ $V_{OH} = 9.5V$ $V_{OH} = 13.5V$ $V_{IN} = V_{SS}, V_{DD}$	5	-0.61	-	-0.51	-1.0	-	-0.42	-	mA
			5	-2.5	-	-2.1	-4.0	-	-1.7	-	
			10	-1.5	-	-1.3	-2.2	-	-1.1	-	
			15	-4.0	-	-3.4	-9.0	-	-2.8	-	
Output Low Current	I_{OL}	$V_{OL} = 0.4V$ $V_{OL} = 0.5V$ $V_{OL} = 1.5V$ $V_{IN} = V_{SS}, V_{DD}$	5	0.61	-	0.51	1.5	-	0.42	-	mA
			10	1.5	-	1.3	3.8	-	1.1	-	
			15	4.0	-	3.4	15.0	-	2.8	-	
Positive Trigger Threshold Voltage	V_p	$V_{OUT} = 0.5V$ $V_{OUT} = 1.0V$ $V_{OUT} = 1.5V$	5	2.05	3.75	2.15	3.0	3.75	2.15	3.85	V
			10	4.8	7.6	4.9	6.4	7.6	4.9	7.7	
			15	7.8	11.6	7.9	9.9	11.6	7.9	11.7	
Negative Trigger Threshold Voltage	V_N	$V_{OUT} = 4.5V$ $V_{OUT} = 9.0V$ $V_{OUT} = 13.5V$	5	1.25	2.95	1.25	2.3	2.85	1.15	2.85	V
			10	2.4	5.2	2.4	3.8	5.1	2.3	5.1	
			15	3.4	7.2	3.4	5.2	7.1	3.3	7.1	
Hysteresis Voltage	V_H		5	0.10	1.25	0.25	0.65	1.25	0.25	1.40	mA
			10	1.8	3.5	1.9	2.6	3.5	1.9	3.6	
			15	3.7	5.6	3.8	4.7	5.6	3.8	5.7	
Input Current "H" Level	I_{IH}	$V_{IH} = 18V$	18	-	0.1	-	10^{-5}	0.1	-	1.0	μA
"L" Level	I_{IL}	$V_{IL} = 0V$	18	-	-0.1	-	-10^{-5}	-0.1	-	-1.0	μA
Quiescent Device Current	I_{DD}	$V_{IN} = V_{SS}, V_{DD}^*$	5	-	1	-	0.001	1	-	7.5	μA
			10	-	2	-	0.002	2	-	15	
			15	-	4	-	0.004	4	-	30	

* All valid input combinations.

DYNAMIC ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$, $V_{SS} = 0\text{V}$, $C_L = 50\text{pF}$)

CHARACTERISTICS	SYMBOL	TEST CONDITION	V_{DD} (V)	MIN.	TYP.	MAX.	UNITS
Output Transition Time (Low to High)	t_{TLH}		5	-	80	200	ns
			10	-	50	100	
			15	-	40	80	
Output Transition Time (High to Low)	t_{THL}		5	-	80	200	
			10	-	50	100	
			15	-	40	80	
Propagation Delay Time	t_{pLH}		5	-	170	340	
	t_{pHL}		10	-	80	160	
			15	-	60	120	
Input Capacitance	C_{IN}			--	5	7.5	pF

CIRCUIT AND WAVEFORM FOR MEASUREMENT OF DYNAMIC CHARACTERISTICS