

# Hex Schmitt trigger

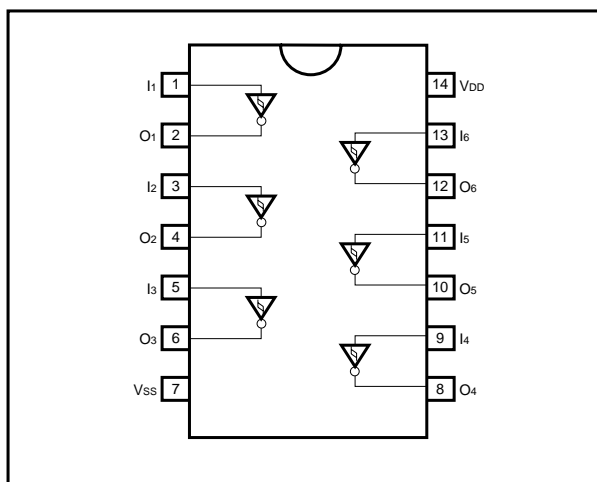
## BU4584B / BU4584BF / BU4584BFV

The BU4584B, BU4584BF, and BU4584BFV are inverter-type Schmitt trigger circuits, with six circuits mounted on a single chip. These are ideal when enhanced noise immunity is required, and when wave form rectification circuits with slow rise or fall input times are involved.

●Features

- 1) Low power dissipation.
- 2) Wide range of operating power supply voltage.
- 3) High input impedance.
- 4) High fan-out.
- 5) Direct drive of 2 L-TTL inputs and LS-TTL input.

●Block diagram



●Absolute maximum ratings ( $V_{SS} = 0V$ ,  $T_a = 25^\circ C$ )

Parameter	Symbol	Limits	Unit
Power supply voltage	$V_{DD}$	- 0.3 ~ + 18	V
Power dissipation	$P_d$	1000 (DIP), 450 (SOP), 350 (SSOP)	mW
Operating temperature	$T_{opr}$	- 40 ~ + 85	$^\circ C$
Storage temperature	$T_{stg}$	- 55 ~ + 150	$^\circ C$
Input voltage	$V_{IN}$	- 0.3 ~ $V_{DD} + 0.3$	V

## ●Electrical characteristics

DC characteristics (unless otherwise noted,  $V_{SS} = 0V$ ,  $T_a = 25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions		Measurement circuit
						$V_{DD}$ (V)		
Input high level voltage	$V_{IH}$	3.5	—	—	V	5	—	Fig.1
		7.0	—	—		10		
		11.0	—	—		15		
Input low level voltage	$V_{IL}$	—	—	1.5	V	5	—	
		—	—	3.0		10		
		—	—	4.0		15		
Input high level current	$I_{IH}$	—	—	0.3	$\mu A$	15	$V_{IH} = 15V$	
Input low level current	$I_{IL}$	—	—	-0.3	$\mu A$	15	$V_{IL} = 0V$	
Output high level voltage	$V_{OH}$	4.95	—	—	V	5	$I_o = 0mA$	
		9.95	—	—		10		
		14.95	—	—		15		
Output low level voltage	$V_{OL}$	—	—	0.05	V	5	$I_o = 0mA$	
		—	—	0.05		10		
		—	—	0.05		15		
Output high level current	$I_{OH}$	-0.44	—	—	mA	5	$V_{OH} = 4.6V$	
		-1.1	—	—		10	$V_{OH} = 9.5V$	
		-3.0	—	—		15	$V_{OH} = 13.5V$	
Output low level current	$I_{OL}$	0.44	—	—	mA	5	$V_{OL} = 0.4V$	
		1.1	—	—		10	$V_{OL} = 0.5V$	
		3.0	—	—		15	$V_{OL} = 1.5V$	
Static current consumption	$I_{DD}$	—	—	1	$\mu A$	5	—	
		—	—	2		10		
		—	—	4		5		
Hysteresis voltage	$V_H$	0.15	—	0.6	V	5	—	Fig.1
		0.25	—	1.0		10		
		0.40	—	1.5		15		

Switching characteristics (unless otherwise noted,  $T_a = 25^\circ C$ ,  $V_{SS} = 0V$ ,  $C_L = 50pF$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions		Measurement circuit
						$V_{DD}$ (V)		
Output rise time	$t_{TLH}$	—	100	—	ns	5	—	Fig.2
		—	50	—		10		
		—	40	—		15		
Output fall time	$t_{THL}$	—	100	—	ns	5	—	Fig.2
		—	50	—		10		
		—	40	—		15		
Propagation delay time, "L" to "H"	$t_{PLH}$	—	125	—	ns	5	—	Fig.2
		—	60	—		10		
		—	50	—		15		
Propagation delay time, "H" to "L"	$t_{PHL}$	—	125	—	ns	5	—	Fig.2
		—	60	—		10		
		—	50	—		15		

● Measurement circuits

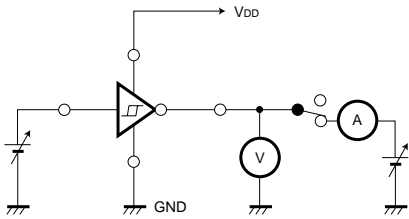


Fig.1 DC characteristics

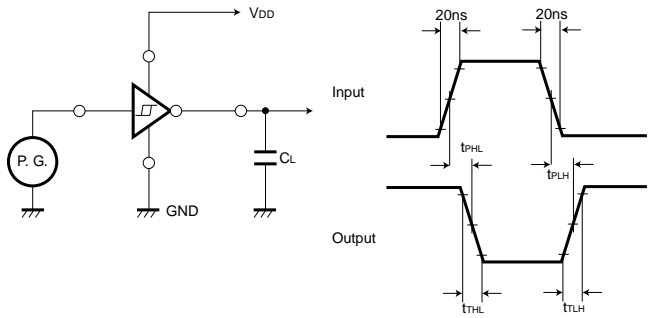


Fig.2 Switching characteristics

● Electrical characteristic curve

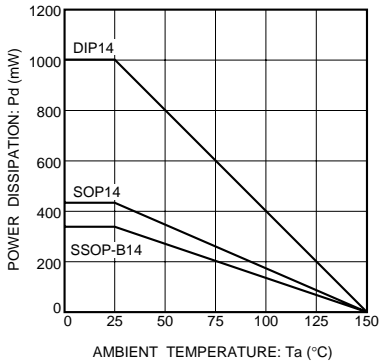


Fig.3 Power dissipation vs. Ta

● External dimensions (Units: mm)

