

Hex Schmitt trigger

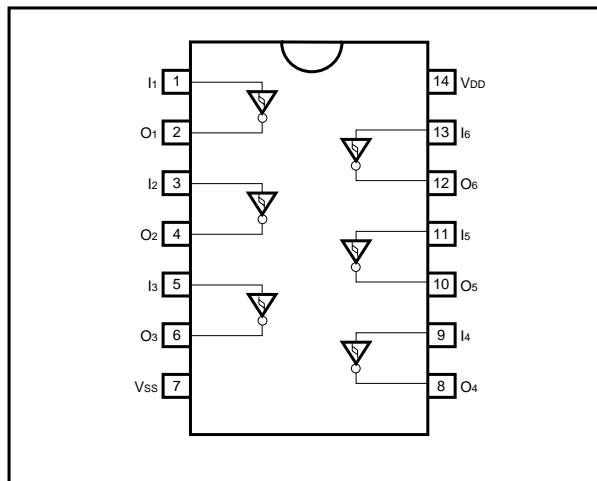
BU4584B / BU4584BF / BU4584BFV

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 | μA | 15 | $V_{IH} = 15V$ | |
| Input low level current | I_{IL} | — | — | -0.3 | μA | 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 | μA | 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

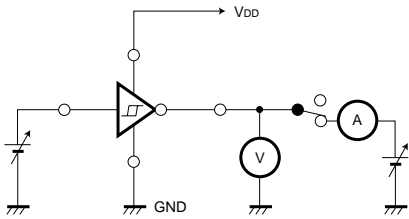


Fig.1 DC characteristics

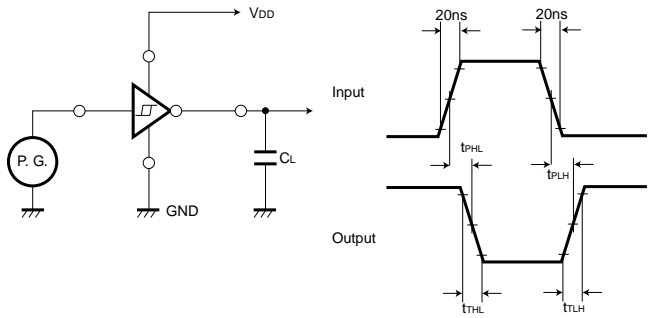


Fig.2 Switching characteristics

● Electrical characteristic curve

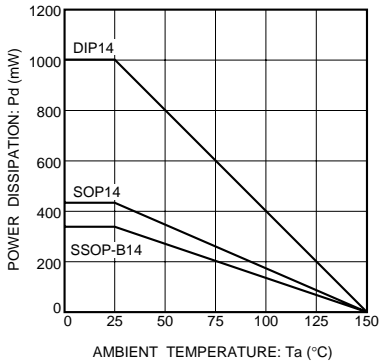


Fig.3 Power dissipation vs. Ta

● External dimensions (Units: mm)

