

# CMOS logic IC

## BU4000B

The BU4000B Series are CMOS ICs featuring low voltage and low power consumption. The wide range of operating power supply voltages is compatible with the general-purpose 4000B Series, and when a 5V power supply voltage is used, the LS-TTL IC can be driven directly.

These ICs are available in SOP and SSOP packages as well as the standard DIP package.

### ●Features

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

### ●Absolute maximum ratings (Ta = 25°C)

| Parameter                       | Symbol    | Limits                                                | Unit |
|---------------------------------|-----------|-------------------------------------------------------|------|
| Power supply voltage            | $V_{DD}$  | $-0.3 \sim +18^{*1}$                                  | V    |
| Input voltage                   | $V_{IN}$  | $-0.3 \sim V_{DD} + 0.3^{*2}$                         | V    |
| Power dissipation <sup>*3</sup> | $P_d$     | Please refer to specifications for individual package | mW   |
| Storage temperature             | $T_{stg}$ | $-55 \sim +150$                                       | °C   |

\*1 For the BU4XXXBC type,  $V_{DD} = -0.5 \sim +20V$ .

\*2 For the BU4XXXBC type,  $-0.5 \sim V_{DD} + 0.5$ .

\*3 The values for the SOP and SSOP packages are the values when mounted on a glass epoxy PCB (50mm × 50mm × 1.6mm).

### ●Recommended operating conditions (Ta = 25°C)

| Parameter             | Symbol    | Limits          | Unit |
|-----------------------|-----------|-----------------|------|
| Power supply voltage  | $V_{DD}$  | $3 \sim 16^{*}$ | V    |
| Input voltage         | $V_{IN}$  | $0 \sim V_{DD}$ | V    |
| Operating temperature | $T_{opr}$ | $-40 \sim +85$  | °C   |

\* For the BU4XXXBC type,  $V_{DD} = 3$  to 18V.

### ●Electrical characteristic curves

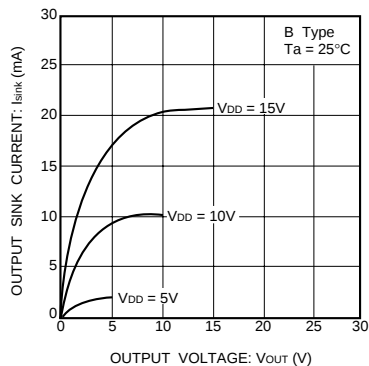


Fig.1 Output sink current vs. output voltage

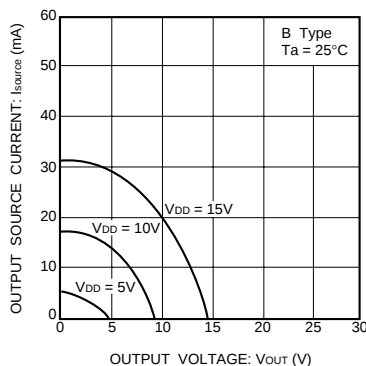


Fig.2 Output source current vs. output voltage

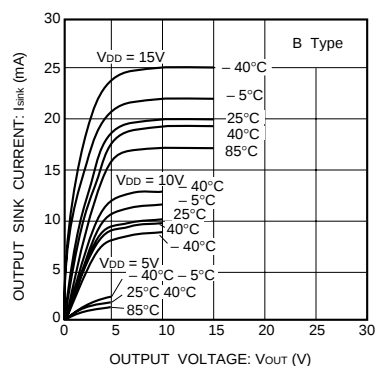


Fig.3 Output SINK current vs. output voltage

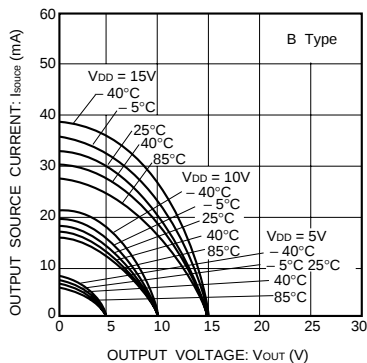


Fig.4 Output source current vs. output voltage

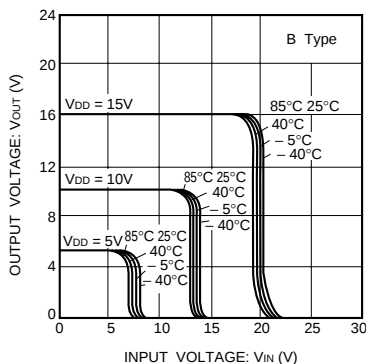


Fig.5 Output voltage vs. input voltage

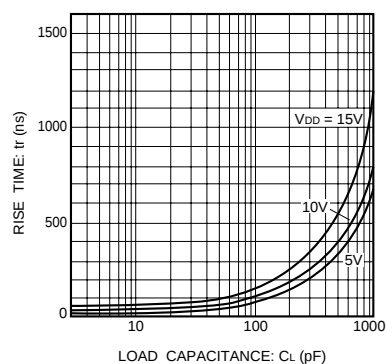


Fig.6 Rise time vs. load capacitance

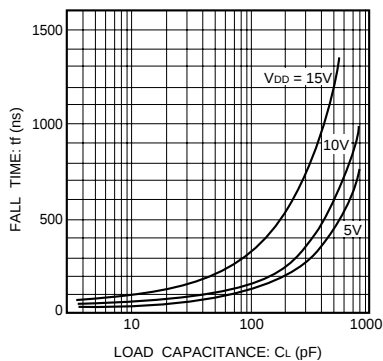


Fig.7 Fall time vs. load capacitance

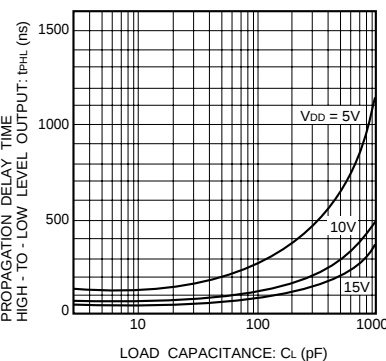


Fig.8 "H" to "L" propagation delay time vs. load capacitance

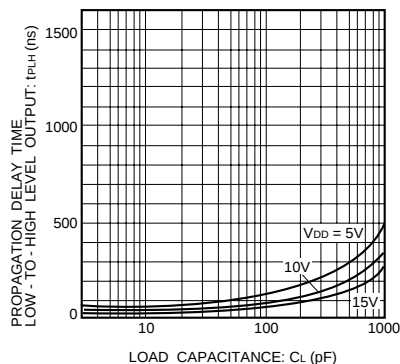


Fig.9 "L" to "H" propagation delay time vs. load capacitance

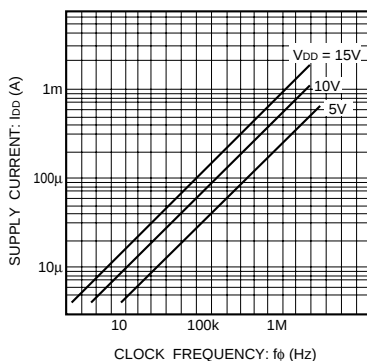


Fig.10 Supply current vs. clock frequency

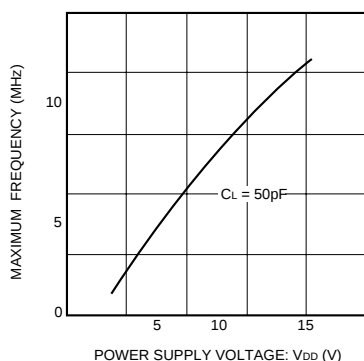


Fig.11 Maximum clock frequency vs. power supply voltage