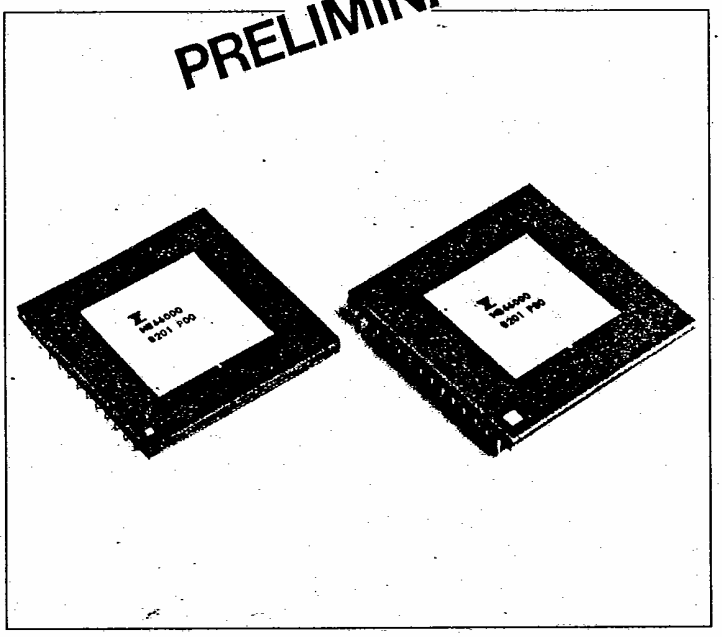
# C-8000VH Gate Array

T-42-11-09

# MB 66000VH Silicon Gate CMOS LSI

PRELIMINARY

The Fujitsu C-8000VH (MB66000VH Series) is a very highly integrated, low power and high speed, gate array LSI fabricated with silicon gate CMOS technology. The array consists of 8000 internal basic cells (2 input NAND equivalent). With the application of a customized double-layer metal mask, a wide variety of large scale random logic functions can be made. To assure quick, simple error-free implementation of the metal interconnection routing, Fujitsu utilizes a unique Computer-Aided Design System (CAD) to interface custom specifications with the manufacturing function. This CAD software provides the physical layout of the array, line routing, mask pattern data generation, and test programs as well as computer simulation of the final circuit.
The C-8000VH can be packaged in a plug-in type 135 pin or 179 pin square package depending on the number of input and output connections required by the design.



## Features

* Simplified customer interface with CAD support (Only logic design and test pattern information required)
* 86 pre-designed logic cells available
* Pin array plug-in type 135/179 pin package
* Very high speed (2.5 ns/gate typ)
* Low power dissipation (0 mW: Steady state, 100 mW: Operation)
* Output buffer: Versatile output option (Push-pull, Three-state, Bi-directional bus)
* Input buffer: Clock input buffer option
* Single power supply, 5.0V
* Fast turn-around on design (12 weeks typically)

## Absolute Maximum Ratings

| Rating | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| Supply Voltage | $V_{DD}$ | $V_{SS}-0.3$* | 7.0 | V |
| Input Voltage | $V_I$ | $V_{SS}-0.3$* | $V_{DD}+0.3$* | V |
| Output Voltage | $V_O$ | $V_{SS}-0.3$* | $V_{DD}+0.3$* | V |
| Operating Temperature | $T_{op}$ | 0 | 70 | °C |
| Storage Temperature | $T_{st}$ | −55 | 150 | °C |

*Note: Can accept 0.5V in transient (20~30 ns)

## Recommend Operating Conditions

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Supply Voltage | $V_{DD}$ | 4.75 | 5.0 | 5.25 | V |
| Input Voltage | $V_{IH}$<br>$V_{IL}$ | 2.2 | | <br>0.8 | V<br>V |
| Operating Temperature | $T_{op}$ | 0 | | 70 | °C |

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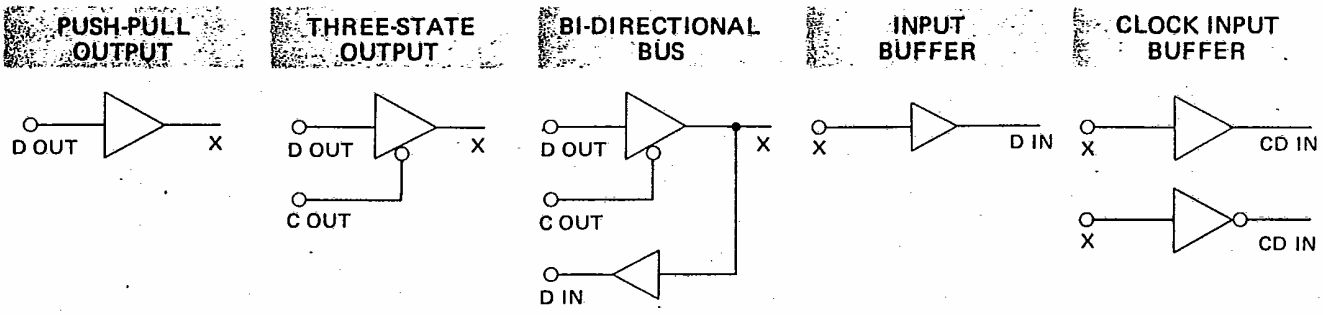
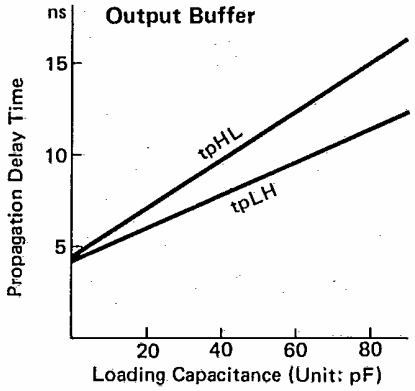
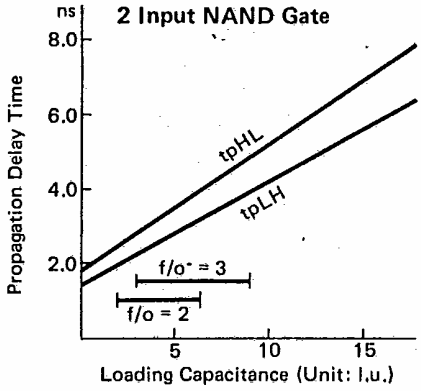
## I/O Cell Family




## Switching Charateristics

(MEASURED AT 1.5 VOLTS)



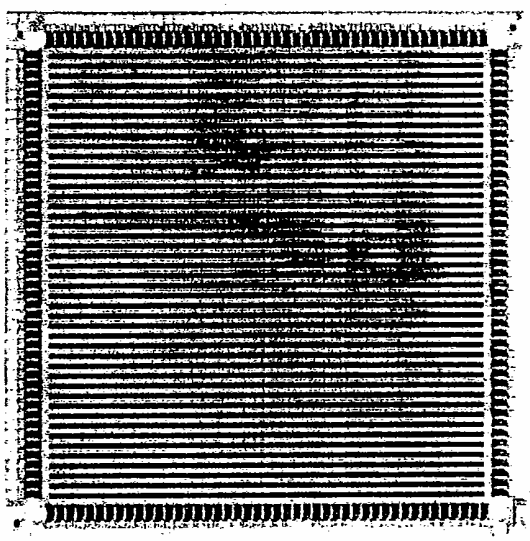

## Cell Library

| | |
|---|---|
| Inverter/Buffer | 7 |
| NAND/NOR | 16 |
| Exclusive OR/NOR | 2 |
| AND-OR-Inverter | 5 |
| OR-AND-Inverter | 5 |
| Multiplexer | 18 |
| Latch/Flip-Flop | 22 |
| Shift Register | 2 |
| Counter | 5 |
| Adder | 3 |
| Other | 1 |

## Pin Configuration

| | | RIT-135 | RIT-179 |
|---|---|---|---|
| Ground | | 4 | 8 |
| VDD | | 4 | 8 |
| Signal | i | 127 | 96 |
| | o | 127 | 160 |

## Chip Layout

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