

# CMOS Logic HD14000B/UB Series

## FEATURES

- Low Current Drain ..... 0.5nA typ./Package ( $V_{DD}=5V$ )
- High Noise Margin 45% typ. of  $V_{DD}$ , 30% min. of  $V_{DD}$
- Wide Supply Voltage Range .....  $V_{DD}=3\sim 18V$
- Wide Operating Temperature Range .....  $-40\sim +85^{\circ}C$
- Capable of driving two low-power TTL loads, one low-power Schottky TTL load, or two HTL loads over the rated temperature range
- Industry-standardized (EIA/JEDEC) family specification
- Parameters specified at 5, 10, and 15V supply

## SELECTION GUIDE

### NAND Gates

Quad. 2-input NAND Gate	HD14011B/UB
Quad. 2-input NAND Schmitt Trigger	HD14093B
Triple 3-input NAND Gate	HD14023B
Dual 4-input NAND Gate	HD14012B
8-input NAND Gate	HD14068B

### NOR Gates

Quad. 2-input NOR Gate	HD14001B/UB
Triple 3-input NOR Gate	HD14025B
Dual 3-input NOR Gate plus Inverter	HD14000UB
Dual 4-input NOR Gate	HD14002B
8-input NOR Gate	HD14078B

### AND Gates

Quad. 2-input AND Gate	HD14081B
Triple 3-input AND Gate	HD14073B
Dual 4-input AND Gate	HD14082B

### OR Gates

Quad. 2-input OR Gate	HD14071B
Triple 3-input OR Gate	HD14075B
Dual 4-input OR Gate	HD14072B

### Complex Gates

Quad. Exclusive-OR Gate	HD14070B
Quad. Exclusive-NOR Gate	HD14077B
Triple Gate (Dual 4-input NAND and 2-input NOR/OR or 8-input AND/NAND)	HD14501UB
Dual Expandable AND-OR-INVERT Gate	HD14506B
4-bit AND/OR Selector (Quad. 2 channel Data Selector or Quad. Exclusive-NOR Gate)	HD14519B
Dual 5-input Majority Logic Gate	HD14530B
Hex Gate (Quad. Inverter plus 2-input NOR plus 2-input NAND)	HD14572UB

### Inverters/Buffers/Level Translators

Dual Complementary Pair plus Inverter	HD14007UB
Hex Inverter/Buffer	HD14049UB
Hex Buffer	HD14050B
Hex Inverter	HD14069UB
Strobed Hex Inverter/Buffer	HD14502B
Hex 3-state Buffer	HD14503B
Hex Schmitt Trigger	HD14584B

## ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit
DC Supply Voltage	$V_{DD}$	$-0.5\sim +18$	V
Input Voltage (All inputs)	$V_{in}$	$-0.5\sim V_{DD}+0.5$	V
Output Voltage	$V_{out}$	$-0.5\sim V_{DD}+0.5$	V
Input Current (per Pin)	$I_{in}$	$\pm 10$	mA
Operating Temperature	$T_A$	$-40\sim +85$	$^{\circ}C$
Storage Temperature	$T_{stg}$	$-65\sim +150$	$^{\circ}C$
Power Dissipation	$P_D$	300	mW

### Decoders/Encoders

BCD-to-Decimal/Binary-to-Octal Decoder	HD14028B
4-bit Latch/4-to-16-line Decoder (high)	HD14514B
4-bit Latch/4-to-16-line Decoder (low)	HD14515B
8-bit Priority Encoder	HD14532B
Dual Binary-to-1-of-4 Decoder/Demultiplexer	HD14555B
Dual Binary-to-1-of-4 Decoder/Demultiplexer (Inverting)	HD14556B

### Display Decoders

BCD-to-Seven Segment Latch/Decoder/Driver	HD14511B
BCD-to-Seven Segment Latch/Decoder/Driver	HD14543B

### Multiplexers/Demultiplexers/Bilateral Switches

Quad. Analog Switch/Quad. Multiplexer	HD14016B
Quad. Analog Switch/Quad. Multiplexer	HD14066B
Triple 2-channel Analog Multiplexer/Demultiplexer	HD14053B
Dual 4-channel Analog Multiplexer/Demultiplexer	HD14052B
Dual 4-channel Analog Data Selector	HD14529B
Dual 4-channel Data Selector/Multiplexer	HD14539B
8-channel Analog Multiplexer/Demultiplexer	HD14051B
8-channel Data Selector	HD14512B
4-bit AND/OR Selector	HD14519B

### Schmitt Triggers

Quad. 2-input NAND Schmitt Trigger	HD14093B
Dual Schmitt Trigger	HD14583B
Hex Schmitt Trigger	HD14584B

### Flip-Flops/Latches

Dual Type D Flip-Flop	HD14013B
Dual J-K Flip-Flop	HD14027B
Quad. Latch	HD14042B
Quad. NOR R-S Latch	HD14043B
Quad. NAND R-S Latch	HD14044B
Quad. D-Type Register	HD14076B
Quad. Type-D Flip-Flop	HD14175B
Dual 4-bit Latch	HD14508B
Hex Type-D Flip-Flop	HD14174B

(to be continued)

# CMOS Logic HD14000B/UB Series

## ● Shift Registers

4-bit Parallel-In, Parallel-Out Shift Register	HD14035B
4-bit Bidirectional Universal Shift Register	HD14194B
Dual 4-bit Static Shift Register	HD14015B
8-bit Static Shift Register	HD14014B
8-bit Static Shift Register	HD14021B
8-bit Universal Bus Register	HD14034B
18-bit Static Shift Register	HD14006B
1-of-64-bit Variable Length Shift Register	HD14557B
Dual 64-bit Static Shift Register	HD14517B*
128-bit Static Shift Register	HD14562B*

## ● Counters

Seven-Stage Ripple Counter	HD14024B
Decade Counter/Divider	HD14017B
Presettable Divide-by-N Counter	HD14018B
Decade Counter (Asynchronous Clear)	HD14160B
Decade Counter (Synchronous Clear)	HD14162B
BCD Up/Down Counter	HD14510B
Programmable Divide-by-N 4-bit Counter (BCD)	HD14522B
12-bit Binary Counter	HD14040B
14-bit Binary Counter	HD14020B
Octal Counter/Divider	HD14022B
4-bit Binary Counter (Asynchronous Clear)	HD14161B
4-bit Binary Counter (Synchronous Clear)	HD14163B
Binary Up/Down Counter	HD14516B
Programmable Divide-by-N 4-bit Counter (Binary)	HD14526B
Dual BCD Up Counter	HD14518B
Dual Binary Up Counter	HD14520B
Dual Programmable BCD/Binary Counter	HD14569B
3-Digit BCD Counter	HD14553B*
Real Time 5-Decade Counter	HD14534B*
Industrial Time Base Generator	HD14566B

## ● Oscillators/Timers

25-Stage Frequency Divider	HD14521B
Programmable Timer	HD14536B
Programmable Oscillator/Timer	HD14541B

## ● Phase-Locked Loops

Phase-Locked Loop	HD14046B*
Phase Comparator and Programmable Counter	HD14568B

## ● Multivibrators

Dual Precision Retriggerable/Resettable Monostable Multivibrator	HD14538B
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## ● Adders/Comparators

4-bit Full Adder	HD14008B
Triple Serial Adder (Positive Logic)	HD14032B
Triple Serial Adder (Negative Logic)	HD14038B
NBCD Adder	HD14560B
9's Complementer	HD14561B
Look-Ahead Carry Block	HD14582B
4-bit Magnitude Comparator	HD14585B

## ● ALU Rate Multipliers

BCD Rate Multiplier	HD14527B
2×2-bit Parallel Binary Multiplier	HD14554B
4-bit Arithmetic Logic Unit	HD14581B

## ● Parity Checkers

12-bit Parity Tree	HD14531B
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## ● Memories

4×4 Multiport Register	HD14580B*
64-bit Static Random Access Memory	HD14505B*
256-bit Static Random Access Memory	HD14537B*
256-bit Static Random Access Memory	HD14552B*
1024-bit Read Only Memory	HD14524B*

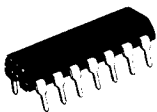
## ● A/D Converter/Logic Functions

Microprocessor Based A/D Converter	HD14443B*
Microprocessor Based A/D Converter	HD14447B*
Successive Approximation Register	HD14549B
Successive Approximation Register	HD14559B

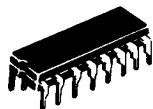
\* : Preliminary

## ■ OUTLINE

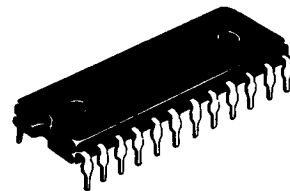
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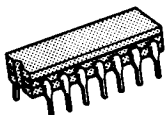
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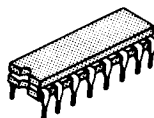
DP-24



DG-14



DG-16



DG-24

