

Philips Logic Competitive Cross Reference Guide

HEF4000 Family

Features

- All parts available in DIP and SO
- Compatible with CD4000
- Committed to supply well into the next decades
- Low power, low speed
- Power supply 3 to 15V
- Easy to design
- Recent designs
 - HEF4794B 8-output LED driver
 - HEF4894B 12-output LED driver
 - HEF7069UB open drain inverter

HC/T Family

Features

- All parts available in HC and HCT (TTL input)
- 74HCTxxx replaces LS-TTL (74LSxxx)
- Low power, high speed
- Power supply 2.0 to 6.0V
- Analog switches 2.0 to 10V
 - 74HC4051, 4052, 4053
 - 74HC4351, 4352, 4353
 - 74HC4066, 4067, 4316
- Phase-Locked-Loop (PLL) experts
 - 74HC4046A, 7046A, 9046A
 - Free design software
 - Extensive application notes

AHC/T Family

Features

- 4 ns propagation delays
- 3x faster than HCMOS
- Operation down to 3.3V
- 16% less signal noise
- Consumes 75% less dynamic power and 50% less static power
- Full selection of functions are available
- All parts will be available in both SO and TSSOP

PicoGate Family

Features

- All parts available in HC/ HCT, AHC/AHCT
- Low power, high speed
- Power supply 2.0 to 6.0V
- Analog switches 2.0 to 10V
 - 74HC1G66/74HCT1G66
- Extended temperature range from -40 to 125° C
- LVC family release in 2000
- Great for ASIC repairs
- Perfect for when space is a concern
- 30% smaller than other single gate packages on the market

AVC Family

Features

- 1.0ns performance
- Optimized for 2.5V output
- -8/8mA static output drive
- High dynamic drive
- 20µA standby current
- V_{CC}: 1.2 – 3.3V
- 3.6 tolerant I/Os
- Live insertion
- Bus hold option

LVC Family

Features

- Low Voltage CMOS
- 74LVCxxx 3.3V equivalent of FAST
- High speed, medium drive
- 5V tolerant I/Os
- Direct interface with TTL levels
- Power supply 1.2 to 3.6V
- Live insertion
- Bus hold option
- Damping resistor option

ALVC Family

Features

- Fastest CMOS based family
- 2 ns propagation delays
- Power supply 1.2 to 3.6V
- -24/24mA drive capability
- 40µA standby current
- 5V tolerant
- Bus hold option
- Non-bus hold types are 5V tolerant
- Termination resistor option
- Bus Interface functions

Supports memory interfacing. Frequently used in high speed telecom applications.

LV Family

Features

- Largest low voltage family available
- 74LVxxx replaces 74HCxxx at V_{CC}= 3.3V
- Low power, high speed
- Low EMI (radiation)
- Power supply 1.0 to 5.5V
- Operates at V_{CC} = 5V
 - Speed 2 x HCMOS
 - Drive 2 X HCMOS
- Analog switches 1.0 to 6.0V
 - At V_{CC}= 5V R-ON 50% of HCMOS
 - 74LV4051, 4052, 4053
 - 74LV4066, 4067, 4316
- Battery charger NiMH and NiCd
 - V_{CC} = 0.9 to 6.0V
 - 1 to 4 batteries

ABT/ABT-16 5V Family

Features

- 3ns performance
- 32-64mA drive
- 250uA standby current
- Power supply 4.5V-5.5V
- Live insertion
- Bus hold option
- Termination resistor option

LVT/LVT-16 3V and ALVT 2.5/3/5V Families

Features

- Worlds fastest TTL Logic
- Ultra high speed 190-270MHz
- High Drive 64mA Output Drive
- Standard TTL functions and pin outs
- -45 to 85 deg C Operating Range
- Live insertion
- Bus hold option
- Termination resistor option
- Pin compatible with existing ABT & LVT
- Mixed I/O compatible from 2.5 to 5V

All Specifications available in Philips 1998 BiCMOS Bus Interface Manual (IC23) and on the Philips web site at www.philipslogic.com

ALS Family

Features

- 4ns propagation delays
- Guaranteed AC performance over temperature and extended V_{CC} range: 5V +/- 10%
- High Impedance PNP base input structure for reduced bus loading in low state
- Standard TTL functions and pin outs
- Replacement for LS types are 1/2 the power with twice the speed
- 2kV ESD protection

FAST Family

Features

- More than 238 functions available
- Standard TTL functions and pinouts
- High speed 3nSec. prop. Delay
- Power supply 5V +/- 10%

Special functions:

High Current Buffer/Transceiver

Light loaded input Structure

Immune Metastable Flip/Flop, Dram Controllers

Octal/Buffer, Transceiver with parity

FBL (Future Bus Low Voltage) Family

Features

- 3.3V BiCMOS bus transceiver
- High drive capability 100mA
- Same pin out, function & features as 5V FB
- Permits incident wave switching in heavily loaded back planes
- 70% less power usage vs. 5V FB
- Low noise

Used in EDP & telecom systems requiring high drive output and incident wave switching

Philips Logic

Competitive Cross Reference Guide

FAMILY	PACKAGE	PHILIPS	TI	FAIRCHILD	ON SEMI	TOSHIBA
CMOS						
4000	DIP SOIC SSOP I SSOP II TSSOP I	HEF4xxxBPN HEF4xxxBTD HEF4xxxDB	CD4xxxBE CD4xxxBM	CD4xxxBN CD4xxxBM/WM CD4xxxMTC	MC14xxxBP MC14xxxBD MC14xxxDT	TC4xxxBP TC4xxxBFN TC4xxxFS
HC(T) T=TTL FUNCTION	DIP SOIC SSOP II TSSOP I	74HC(T)xxxN 74HC(T)xxxD 74HC(T)xxxDB 74HC(T)xxxPW	SN74HC(T)xxxN SN74HC(T)xxxD/DW SN74HC(T)xxxDB SN74HC(T)xxxPW	MM74HC(T)xxxN MM74HC(T)xxxM/WM MM74HC(T)xxxMTC	MC74HC(T)xxxN MC74HC(T)xxxD MC74HC(T)xxxDT	TC74HC(T)xxxAP TC74HC(T)xxxAFW
AHC(T)	SOIC TSSOP I	74AHC(T)xxxD 74AHC(T)xxxPW	SN74AHC(T)xxxD/DW SN74AHC(T)xxxPW	MM74VHC(T)xxxM/WM MM74VHC(T)xxxMTC	MC74VHC(T)xxxD MC74VHC(T)xxxDT	TC74VHC(T)xxxAFN/FW TC74VHC(T)xxxAFT
PICO GATE (Single Gate Logic)						
HC Series	SOT353-5	74HC1GxxxGW		NC7SxxxM5		TC7SxxxFU
HCT Series	SOT353-5	74HCT1GxxxGW		NC7STxxxM5		TC7STxxxFU
AHC Series	SOT353-5	74AHC1GxxxGW	SN74AHC1GxxxDCK		MC74VHC1GxxxDFT1	TC7SHxxxFU
AHCT Series	SOT353-5	74AHCT1GxxxGW	SN74AHCT1GxxxDCK		MC74VHCT1GxxxDFT1	TC7SETxxxFU
LVC Series	SOT353-5	74LVC1GxxxGW	SN74LVC1GxxxDCK	NC7SZxxxM5		TC7SZxxxFU
Low Voltage CMOS						
LVC(H) H=bushold feature	SOIC SSOP II TSSOP I 48/56 PIN SSOP III 48/56 PIN TSSOP II LFGBA	74LVC(H)xxxAD 74LVC(H)xxxADB 74LVC(H)xxxAPW 74LVC(H)16xxxADL 74LVC(H)16xxxADGG 74LVC(H)32xxxAEC	SN74LVC(H)xxxAD/DW SN74LVC(H)xxxADB SN74LVC(H)xxxAPW SN74LVC(H)16xxxADL SN74LVC(H)16xxxADGG SN74LVC(H)32xxxAGKE	74LCxxxM/WM 74LCxxxMSA 74LCxxxMTC 74LCX16xxxMEA 74LCX16xxxMTD	MC74LCxxxD MC74LCxxxSD MC74LCxxxDT MC74LCX16xxxDT	TC74LCxxxFN/FW TC74LCxxxFT TC74LCX16xxxFT
ALVC(H)	48/56 PIN SSOP III 48/56 PIN TSSOP II LFGBA	74ALVC(H)16xxxDL 74ALVC(H)16xxxDGG 74ALVC(H)32xxxEC	SN74ALVC(H)16xxxDL SN74ALVC(H)16xxxDGG SN74ALVC(H)32xxxGKE	74VCX16xxxMEA 74VCX16xxxMTD		TC74LCX16xxxFT
LV	SOIC SSOP II TSSOP I	74LVxxxD 74LVxxxDB 74LVxxxPW	SN74LVxxxD/DW SN74LVxxxDB SN74LVxxxPW	74LVxxxM/WM 74LVxxxMSA 74LVxxxMTC	MC74LVxxxD MC74LVxxxDT	TC74LVxxxFN/FW TC74LVxxxFS TC74LVxxxFT
AVC	TSSOP LFBFA	74AVC16xxxDGG 74AVC32xxxEC	SN74AVC16xxxDGG SN74AVC32xxxGKE			
BiCMOS						
ABT(H) H=bushold feature	DIP SOIC SSOP II TSSOP I 48/56 PIN SSOP III 48/56 PIN TSSOP II	74ABTxxxN 74ABTxxxD 74ABTxxxDB 74ABTxxxPW 74ABT(H)16xxxDL 74ABT(H)16xxxDGG	SN74ABTxxxN SN74ABTxxxD/DW SN74ABTxxxDB SN74ABTxxxPW SN74ABT(H)16xxxDL SN74ABT(H)16xxxDGG	74ABTxxxPC 74ABTxxxSC 74ABTxxxMSA 74ABTxxxMTC 74ABT16xxxSSC 74ABT16xxxMTD		
Low Voltage BiCMOS						
LVT Bushold is built in	SOIC SSOP II TSSOP I 48/56 PIN SSOP III 48/56 PIN TSSOP II	74LVTxxxD 74LVTxxxDB 74LVTxxxPW 74LVT16xxxDL 74LVT16xxxDGG	SN74LVTxxxD/DW SN74LVTxxxDB SN74LVTxxxPW SN74LVT16xxxDL SN74LVT16xxxDGG	74LVTxxxM/WM 74LVTxxxMSA 74LVTxxxMTC 74LVT16xxxMEA 74LVT16xxxMTD		
ALVT Bushold is built in	48/56 PIN SSOP III 48/56 PIN TSSOP II	74ALVT16xxxDL 74ALVT16xxxDGG	SN74ALVT16xxxDL SN74ALVT16xxxDGG			
BIPOLAR						
ALS	DIP SOIC SSOP II	74ALSxxxN 74ALSxxxD 74ALSxxxDB	SN74ALSxxxN SN74ALSxxxD/DW SN74ALSxxxDB	DM74ALSxxxN DM74ALSxxxM/WM DM74ALSxxxMSA		
FAST	DIP SOIC SSOP II	N74FxxxN N74FxxxD N74FxxxDB	SN74FxxxN SN74FxxxD/DW SN74FxxxDB	74FxxxPC/SPC 74FxxxSC 74FxxxMSA		
SPECIALTY LOGIC						
FBL (3.3V BTL)	52 PIN PQFP	FBLxxxxBB				