

## Philips Logic Competitive Cross Reference Guide

Family	Package	Philips	TI	Fairchild	ON Semi	Toshiba	ST Micro
<b>5V CMOS</b>							
HEF4000B	DIP	HEF4xxxBPN	CD4xxxBE	CD4xxxBN	MC14xxxBP	TC4xxxBP	HCF4xxxBEY
	SOIC	HEF4xxxBTD	CD4xxxBM	CD4xxxBM/WM	MC14xxxBD	TC4xxxBFN	HCF4xxxBM1/M013TR
	SSOP I					TC4xxxFS	
	SSOP II	HEF4xxxDB					
	TSSOP			CD4xxxMTC	MC14xxxDT		
HC(T) T=TTL	DIP	74HC(T)xxxN	SN74HC(T)xxxN	MM74HC(T)xxxN	MC74HC(T)xxxN	TC74HC(T)xxxAP	M74HCxxxB1R
	SOIC	74HC(T)xxxD	SN74HC(T)xxxD/DW	MM74HC(T)xxxM/WM	MC74HC(T)xxxD	TC74HC(T)xxxAFW	M74HCxxxM1R/RM13TR
	SSOP II	74HC(T)xxxDB	SN74HC(T)xxxDB				
	TSSOP	74HC(T)xxxPW	SN74HC(T)xxxPW	MM74HC(T)xxxMTC	MC74HC(T)xxxDT		M74HCxxxTTR
	DQFN	74HC(T)xxxBQ		74HC(T)xxxBQ			
AHC(T) T=TTL	SOIC	74AHC(T)xxxD	SN74AHC(T)xxxD/DW	MM74VHC(T)xxxM/WM	MC74VHC(T)xxxD	TC74VHC(T)xxxAFN/FW	74VHCxxxTTR/ATTR
	TSSOP	74AHC(T)xxxPW	SN74AHC(T)xxxPW	MM74VHC(T)xxxMTC	MC74VHC(T)xxxDT	TC74VHC(T)xxxAFT	74VHCTxxxTTR/ATTR
	DQFN	74AHC(T)xxxBQ		MM74VHC(T)xxxBQ			
<b>Low Voltage CMOS</b>							
LVC(H) H=bushold Feature	SOIC	74LVC(H)xxxAD	SN74LVC(H)xxxAD/DW	74LCXxxxM/WM	MC74LCXxxxD	TC74LCXxxxFN/FW	74LCXxxxM/MTR
	SSOP II	74LVC(H)xxxADB	SN74LVC(H)xxxADB	74LCXxxxMSA	MC74LCXxxxSD		
	TSSOP I	74LVC(H)xxxAPW	SN74LVC(H)xxxAPW	74LCXxxxMTC	MC74LCXxxxDT	TC74LCXxxxFT	74LCXxxxTTR
	DQFN	74LVC(H)xxxABQ		74LCXxxxBQ			
	SSOP III	74LVC(H)16xxxADL	SN74LVC(H)16xxxADL	74LCX16xxxMEA			
	TSSOP II	74LVC(H)16xxxADGG	SN74LVC(H)16xxxADGG	74LCX16xxxMTD	MC74LCX16xxxDT	TC74LCX16xxxFT	74LCX(H)16xxxM/MTR
	LFBGA	74LVC(H)32xxxAEC	SN74LVC(H)32xxxAGKE				
VFBGA	74LVC(H)32xxxAEV	SN74LVC(H)32xxxAGQL					
ALVC(H)	SO	74ALVCxxxD	SN74ALVCxxxD/DW	74VCXxxxM			
	TSSOP	74ALVCxxxPW	SN74ALVCxxxPW	74VCXxxxMTC			
	DQFN	74ALVCxxxBQ		74VCXxxxBQ			
	SSOP III	74ALVC(H)16xxxDL	SN74ALVC(H)16xxxDL	74VCX16xxxMEA			
	TSSOP II	74ALVC(H)16xxxDGG	SN74ALVC(H)16xxxDGG	74VCX16xxxMTD		TC74VCX16xxxFT	74VCX(H)16xxxTTR
LFBGA	74ALVC(H)32xxxEC	SN74ALVC(H)32xxxGKE					
LV	SOIC	74LVxxxD	SN74LVxxxD/DW	74LVXxxxM/WM	MC74LVXxxxD	TC74LVXxxxFN/FW	
	SSOP II	74LVxxxDB	SN74LVxxxDB	74LVXxxxMSA		TC74LVXxxxFS	
	TSSOP I	74LVxxxPW	SN74LVxxxPW	74LVXxxxMTC	MC74LVXxxxDT	TC74LVXxxxFT	
AUC	TSSOP II	74AUC16xxxDGG	SN74AUC16xxxDGG				
<b>5V BiCMOS</b>							
ABT(H) H=bushold Feature	DIP	74ABTxxxN	SN74ABTxxxN	74ABTxxxPC			
	SOIC	74ABTxxxD	SN74ABTxxxD/DW	74ABTxxxSC			
	SSOP II	74ABTxxxDB	SN74ABTxxxDB	74ABTxxxMSA			
	TSSOP	74ABTxxxPW	SN74ABTxxxPW	74ABTxxxMTC			
	SSOP III	74ABT(H)16xxxDL	SN74ABT(H)16xxxDL	74ABT16xxxSSC			
TSSOP II	74ABT(H)16xxxDGG	SN74ABT(H)16xxxDGG	74ABT16xxxMTD				
<b>Low Voltage BiCMOS</b>							
LVT Philips – Bushold is built in	SOIC	74LVTxxxD	SN74LVTHxxxD/DW	74LVTHxxxM/WM			
	SSOP II	74LVTxxxDB	SN74LVTHxxxDB	74LVTHxxxMSA			
	TSSOP	74LVTxxxPW	SN74LVTHxxxPW	74LVTHxxxMTC			
	DQFN	74LVTxxxBQ					
	SSOP III	74LVT16xxxDL	SN74LVTH16xxxDL	74LVTH16xxxMEA			
	TSSOP II	74LVT16xxxDGG	SN74LVTH16xxxDGG	74LVTH16xxxMTD			
	VFBGA	74LVT16xxxEV	SN74LVTH16xxxGQL				
LFBGA	74LVT32xxxEC	SN74LVTH16xxxGKE					
ALVT (Bushold is built in)	SSOP III	74ALVT16xxxDL	SN74ALVT16xxxDL				
	TSSOP II	74ALVT16xxxDGG	SN74ALVT16xxxDGG				
<b>BIPOLAR</b>							
FAST	DIP	N74FxxxN	SN74FxxxN	74FxxxPC/SPC			
	SOIC	N74FxxxD	SN74FxxxD/DW	74FxxxSC			
	SSOP II	N74FxxxDB	SN74FxxxDB	74FxxxMSA			

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## 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

## 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
- Available in 1, 2 & 3 gate functions

## AHC/T Family

### Features:

- 4 ns propagation delays
- 2x faster than HCMOS
- Operation 2.0 to 5.0V
- 16% less signal noise
- Low static power
- Full selection of functions are available
- All parts available in SO and TSSOP
- Available in 1, 2 & 3 gate functions

## PicoGate Logic Families

### Features:

- All parts available in HC/HCT,AHC/AHCT & LVC
- Low power, high speed
- Power supply 2.0 to 6.0VHC/AHC
  - 74HC1G66/74HCT1G66
- Extended temperature range from -40 to 125°C
- Great for ASIC repairs
- Ideal selection when space is a concern
- Multiple package options
- LVC PicoGate Logic operates up to 5.5V

## 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
- 3.6V 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
- PicoGate Logic to 5.5V
- Live insertion
- Bus hold option
- Damping resistor option
- Many functions support partial power down
- Analog switches 1.65 to 5.5V

## 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
- Bus hold option
- Termination resistor option
- Bus interface functions

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

## LV Family

### Features:

- 74LVxxx replaces 74HCxxx at  $V_{CC} = 3.3V$
- Low power, high speed
- Low EMI (radiation)
- Power supply 1.0 to 5.5V
- Operates @  $V_{CC} = 5V$ 
  - Speed 2x HCMOS
  - Drive 2x HCMOS

## Analog switches 1.0 to 6.0V

- At  $V_{CC} = 5V$  R-ON 50% of HCMOS
- 74LV4051, 4052, 4053
- 74LV4066, 4067, 4316

## ABT/ABT-16 5V Family

### Features:

- 3 ns performance
- 32-64mA drive
- 250µA Standby current
- Power supply 4.5V – 5.5V
- Live insertion
- Power up 3-state
- Bus hold option
- Termination resistor option

## LVT/LVT-16 3V Family

### Features:

- Power up 3-state
- Clock speeds 125 MHz
- High drive 64mA output drive
- Standard TTL functions and pin outs
- -45 to 85°C operating range
- Live insertion
- Bus hold standard
- Termination resistor option
- Pin compatible with existing ABT
- Mixed I/O compatible from 2.5 to 5V
- Same as T.I.'s LVTH
- 16/32-bit functions available

## ALVT16 Family

### Features:

- World's fastest LVTTTL logic
- 64 mA drive
- 2.3 to 3.6  $V_{CC}$
- Power up 3-state
- 250 MHz min. clock speeds
- 5V I/O capable
- Same as T.I.'s ALVTH family

## FAST Family

### Features:

- More than 90 functions available
- Standard TTL functions and pin outs
- High speed 3ns propagation delay
- Power supply 5V +/- 10%

## Philips Semiconductors

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