

Standard Logic ICs

Cross reference guide



February 2005

Part number description

Code

-	CMOS4000
54	Aerospace specification
74	Standard specification
M54	Aerospace specification for HC/HCT only
M74	Standard specification for HC/HCT only

Part number

74 VCX H R 16 2 XXX A TTR

Family

AC/ACT	AC/ACT: 5V advanced HCMOS
ALVC	ALVC: Advanced low-voltage HCMOS
HCC/HCF	CMOS 4000B
V2G/V2T	Dual gate VHC/VHCT
HC/HCT	HC/HCT: High-speed CMOS
LCX	LCX: 3.3V Low-voltage HCMOS, 5V I/O tolerant
LVC	LVC: Low-voltage high-performance HCMOS
LVQ	LVQ: 3.3V Low-voltage HCMOS
LVT	LVT: Low-voltage CMOS technology
LVX	LVX: 3.3V Low-voltage, low-noise HCMOS, 5V input tolerant
H1G	Single gate HCMOS
L1X	Single gate LCX
V1G/V1T	Single gate VHC/VHCT
VCX	VCX: Very low-voltage HCMOS, 3.3V I/O tolerant
VHC/VHCT	VHC/VHCT: 5V Low-noise HCMOS

H	Bus hold
R	Output resistor on side "A" (for bidirectional devices)
16	16-bit
32	32-bit
2	Output resistor
	Std code (see "Part number by family" tables)
A	Code used only for LVC family as competition compliant

Packages and packing for CMOS4000 only

BEY	DIP (tube)
BM1	SO (tube)
M013TR	SO (T and R)

For HC/HCT only

B1R	DIP (tube)
M1R	SO (tube)
RM13TR	SO (T and R)
TTR	TSSOP (T and R)

Other families

MTR	SO (T and R)
TTR	TSSOP (T and R)
LB	FBGA (T and R)
STR	SOT23 (T and R)
CTR	SOT323 (T and R)
BJR	Flip-Chip (T and R)

Mandatory fields

Optional fields

M22100 is a non-standard code

Competitive cross reference

ST	TI	Fairchild
HCF4xxxBEY	CD4xxxBE	CD4 xxxBCN
HCF4xxxBM1	CD4xxxBM	CD4 xxxBCM
HCF4xxxM013TR	CD4xxxBM96	CD4 xxxBCMXX
M74HCxxxB1R	SN74HCxxxN	MM74HCxxxN
M74HCxxxM1R	SN74HCxxxDW	MM74HCxxxM
M74HCxxxRM13TR	SN74HCxxxDWR	MM74HCxxxMX
M74HCxxxTTR	SN74HCxxxPWR	MM74HCxxxMTCX
M74HCTxxxB1R	SN74HCTxxxN	MM74HCTxxxN
M74HCTxxxM1R	SN74HCTxxxDW	MM74HCTxxxM
M74HCTxxxRM13TR	SN74HCTxxxDWR	MM74HCTxxxMX
M74HCTxxxTTR	SN74HCTxxxPWR	MM74HCTxxxMTCX
74ACxxxMTR	SN74ACxxxDWR	74ACxxxSCX
74ACxxxTTR	SN74ACxxxPWR	74ACxxxMTCX
74ACTxxxMT	SN74ACTxxxDWR	74ACTxxxSCX
74ACTxxxTTR	SN74ACTxxxPWR	74ACTxxxMTCX
74ALVCxxxT	SN74ALVCxxxDGG	74ALVCxxxMTDX
74ALVCxxxLBR	SN74ALVCxxxKR	
74H1GxxxTTR		
74LX1GxxxSTR	SN74LVC1GxxxDBVR	NC7SZxxxM5X
74LX1GxxxCTR	SN74LVC1GxxxDCKR	NC7SZxxxP5X
74LX1GxxxBJR	SN74LVC1GxxxYEAR	
74LCxxxMTR		74LCxxxMX
74LCxxxTTR		74LCxxxMTCX
74LVCxxxMTR	SN74LVCxxxDWR	
74LVCxxxTTR	SN74LVCxxxPWR	
74LVQxxxMTR		74LVQxxxSCX
74LVQxxxTTR		
74LVTxxxTTR	SN74LVTxxxDGGR	74LVTxxxMTC
74LVTxxxLBR	SN74LVTxxxGQLR	
74LVXxxxMTR	SN74LVxxxDWR	74LVXxxxMX
74LVXxxxTTR	SN74LVxxxPWR	74LVXxxxMTCX
74V1GxxxSTR	SN74AHC1GxxxDBV	NC7SxxxM5X
74V1GxxxCTR	SN74AHC1GxxxDCK	NC7SxxxP5X
74V1TxxxSTR	SN74AHC1TxxxDBV	NC7STxxxM5X
74V1TxxxCTR	SN74AHC1TxxxDCK	NC7STxxxP5X
74V2GxxxSTR	SN74AUC2GxxxDBV	NC7WZxxK8X
74V2TxxxSTR		
74VCxxxTTR		74VCxxxMTDX
74VCxxxLBR		74VCxxxGX
74VHCxxxMTR	SN74AHCxxxDWR	74VHCxxxMX
74VHCxxxTTR	SN74AHCxxxPWR	74VHCxxxMTCX
74VHCTxxxMTR	SN74AHCTxxxDWR	74VHCTxxxMX
74VHCTxxxTTR	SN74AHCTxxxPWR	74VHCTxxxMTCX

xxx include std code and optional code

On Semi	Toshiba	Philips	Package
MC14xxxBCP	TC4xxxBP	HEFxxxBPN	DIP
MC14xxxBD	TC4xxxBFN	HEFxxxBTN	SO (TUBE)
MC14xxxBDR2	TC4xxxBFN-ELP	HEFxxxBDT-T	SO (T and R)
MC74HCxxxN	TC74HCxxxAP	74HCxxxN	DIP
MC74HCxxxD	TC74HCxxxAFN	74HCxxxD	SO (TUBE)
MC74HCxxxDR2	TC74HCxxxAFN-ELP	74HCxxxD-T	SO (T and R)
MC74HCxxxDTR2		74HCxxxPW-T	TSSOP (T and R)
MC74HCTxxxN	TC74HCTxxxAP	74HCTxxxN	DIP
MC74HCTxxxD	TC74HCTxxxAFN	74HCTxxxD	SO (TUBE)
MC74HCTxxxDR2	TC74HCTxxxAFN-ELP	74HCTxxxD-T	SO (T and R)
MC74HCTxxxDTR2		74HCTxxxPW-T	TSSOP (T and R)
MC74ACxxxDR2	TC74ACxxxFN-ELP		SO (T and R)
MC74ACxxxDTR2	TC74ACxxxFN-EL		TSSOP (T and R)
MC74ACTxxxDR2	TC74ACTxxxFN-ELP		SO (T and R)
MC74ACTxxxDTR2	TC74ACTxxxFN-EL		TSSOP (T and R)
		74ALVCHxxxDGG	TSSOP (T and R)
			LFBGA (T and R)
		74HC1GxxxGW	SOT23
	TC7SZxxxF		SOT23
NL17SZxxxDFT2	TC7SZxxxFU		SOT323
			Flip-Chip
MC74LCxxxDR2	TC74LCxxxFN-ELP		SO (T and R)
MC74LCxxxDTR2	TC74LCxxxFN-EL		TSSOP (T and R)
		74LVCxxxD-T	SO (T and R)
		74LVCxxxPW-T	TSSOP (T and R)
			SO (T and R)
			TSSOP (T and R)
		74LVTxxxPW	TSSOP (T and R)
			TFBGA54
MC74LVxxxDR2	TC74LVxxxFN-ELP	74LVxxxD-T	SO (T and R)
MC74LVxxxDTR2	TC74LVxxxFT-EL	74LVxxxPW-T	TSSOP (T and R)
MC74VHC1GxxxDTT1	TC7SHxxxF		SOT23
MC74VHC1GxxxDFT2	TC7SHxxxFU	74AHC1GxxxGW	SOT323
MC74VHC1GTxxxDTT1	TC7SETxxxF		SOT23
MC74VHC1GTxxxDFT2	TC7SETxxxFU	74AHC1GxxxGW	SOT323
NL27WZxxxUS	TC7WHxxxFF		SOT23
			SOT23
74VCxxxDTR	TC74VCxxxFT-EL		TSSOP (T and R)
			LFBGA (T and R)
MC74VHCxxxDR2	TC74VHCxxxAFN-ELP	74AHCxxxD-T	SO (T and R)
MC74VHCxxxDTR2	TC74VHCxxxAFT-EL	74AHCxxxPW-T	TSSOP (T and R)
MC74VHCTxxxDR2	TC74VHCTxxxAFN-ELP	74AHCTxxxD-T	SO (T and R)
MC74VHCTxxxDTR2	TC74VHCTxxxAFT-EL	74AHCTxxxPW-T	TSSOP (T and R)

Family selector

Family	Electrical characteristics				Features					Packages						
	V_{DD} or V_{CC} [V]	V_I [V]	I_O (typ) [mA]	t_{PD} (typ) [ns]	Direct TTL interface	Input tolerant	Bus hold	Bus interface	Output resistor	DIP	SO	TSSOP	FBGA	SOT23	SOT323	Flip-Chip
CMOS4000B	3 to 18	0 to V_{DD}	7	45						●	●					
H1G	2 to 6	0 to V_{CC}												●		
HC	2 to 6	0 to V_{CC}	4	12						●	●	●				
HCT	4.5 to 5.5	0 to V_{CC}	4	12	●					●	●	●				
AC	2 to 6	0 to V_{CC}	24	4				●			●	●				
ACT	4.5 to 5.5	0 to V_{CC}	24	4	●			●			●	●				
VHC	2 to 5.5	0 to 5.5	8	4		●		●			●	●				
VHCT	4.5 to 5.5	0 to 5.5	8	4	●	●		●			●	●				
V1G	2 to 5.5	0 to 5.5	8	4		●								●	●	
V1T	4.5 to 5.5	0 to 5.5	8	4	●	●								●	●	
V2G	2 to 5.5	0 to 5.5	8	4		●								●		
V2T	4.5 to 5.5	0 to 5.5	8	4	●	●								●		
LVX	2 to 3.6	0 to 5.5	4	4.7	●	●		●			●	●				
LVQ	2 to 3.6	0 to V_{CC}	12	5	●						●	●				
LVT	2.7 to 3.6	0 to 3.6	64		●	●	●	●				●	●			
LCX	2 to 3.6	0 to 5.5	24	4	●	●	●	●	●		●	●				
LX1G	1.65 to 5.5	0 to 5.5	24	4	●	●								●	●	●
LVC	1.65 to 3.6	0 to 5.5	24	3	●	●					●	●				
ALVC	1.65 to 3.6	0 to 3.6	24	2	●	●	●	●				●	●			
VCX	1.8 to 3.6	0 to 3.6	24	2	●	●	●	●	●			●	●			

Cross reference by package suffix

CMOS4000

ST type	Ti	Fairchild	On Semi	Toshiba	Philips
BYE	BE	BCN	BCP	BP	BPN
BM1	BM	BCM	BD	BFN	BTN
M013TR	BM96	BCMXX	BDR2	BFN-ELP	BTD-T

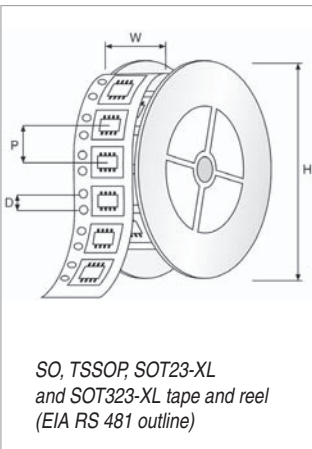
HC/HCT

B1R	N	N	N	AP	N
M1R	DW	M	D	AFN	D
RM13TR	DWR	MX	DR2	AFN-ELP	D-T
TTR	PWR	MTCX	DTR2	FN-EL	PW-T

Other family

MTR	DWR	SCX	DR2	FN-ELP	D-T
TTR	PWR	MTCX	DTR2	FN-EL	PW-T
LB	KR	GX	-	-	-
STR	DBV	M5X	DTT1	F	-
CTR	DKK	P5X	DFT2	FU	GW
BJR	YEAR	-	-	-	-

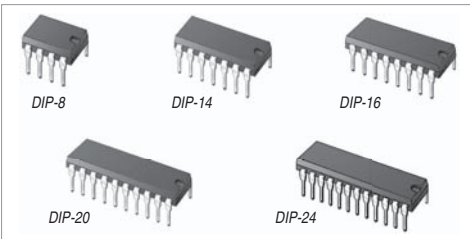
Surface mounting packages



Package	H (inch)	W (tape width mm)	P (mm)	D (mm)
SO-8, TFBGA42	13	12	8	4
SO-14, SO-16, TSSOP14, TSSOP16, TFBGA54	13	16	8	4
SO-16L, TSSOP20, TSSOP24	13	16	12	4
SO-20, SO-24, TSSOP48	13	24	12	4
SOT23-5L/8L, SOT323-5L, Flip-Chip4	7	8	4	4
LFBGA96	13	24	8	4

Package	Quantity
SO-8, SO-14, SO-16, TSSOP16, TSSOP20, TSSOP24, TFBGA54	2,500 pcs
TSSOP48	2,000 pcs
SO-16L, SO-20, SO-24	1,000 pcs
SOT323-5L, SOT23-5L/8L, TFBGA42, Flip-Chip4	3,000 pcs
LFBGA96	3,500 pcs

Through-hole packages



Package	Base qty	Bulk qty
DIP-8	50 pcs	2,000 pcs
DIP-14/16	25 pcs	1,000 pcs
DIP-20	20 pcs	1,000 pcs
DIP-24	15 pcs	750 pcs



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