

Digital Signal Processors

Unpackaged Die/Known Good Die (KGD)

Mixed Signal

First-In, First-Out (FIFO) Products

Military ASIC

Advanced Logic

Programmable Logic/Memory

Process Flows

Cross Reference Guides

How to Reach Us

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Product Nomenclature

Texas Instruments LOGIC

Example: SNJ 54 ABT H 16 2 245 WD

Prefix

SNJ = MIL-PRF-38535 (QML)
 SN = Commercial Processing

Type

54 = Military Temperature Range

Technology

No designator = TTL
 LS = Low-Power Schottky
 ALS/AS = Advanced Low Power Schottky/Advanced Schottky
 AHC/AHCT = Advanced High Speed CMOS
 HC/HCT = High Speed CMOS
 BCT = BiCMOS
 AC/ACT = Advanced CMOS
 ABT = Advanced BiCMOS
 LVC = Low Voltage CMOS
 LVTH = Low Voltage Advanced BiCMOS with Bus Hold
 CDC = Clock Distribution Circuit
 CBT = Crossbar Bus Switch
 GTL = Gunning Transceiver Logic

Packages

J, JT = Ceramic Dual-In Line (CDIP)
 W, WD = Ceramic Flatpack
 FK = Leadless Ceramic Chip Carrier
 HV, HT, HFP = Ceramic Quad Flatpack
 GB = Pin Grid Array (PGA)

Device

Options

2 = Series-Damping Resistors on Outputs

Bus / Scan Options

8 = SCOPE / JTAG
 16 = Widebus
 18 = SCOPE / JTAG Widebus
 32 = Widebus+

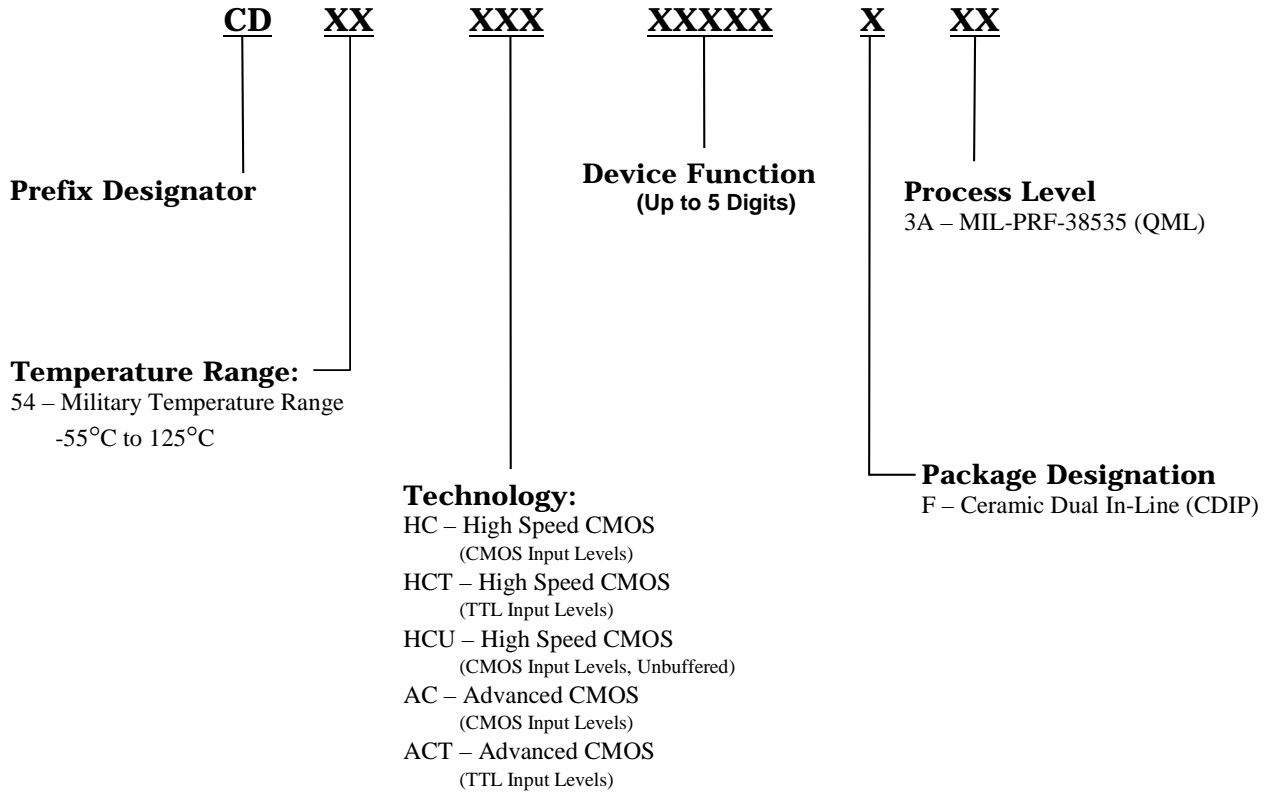
Special Features

D = Level Shifting Diode (CBTD)
 H = Bus Hold (LVTH)

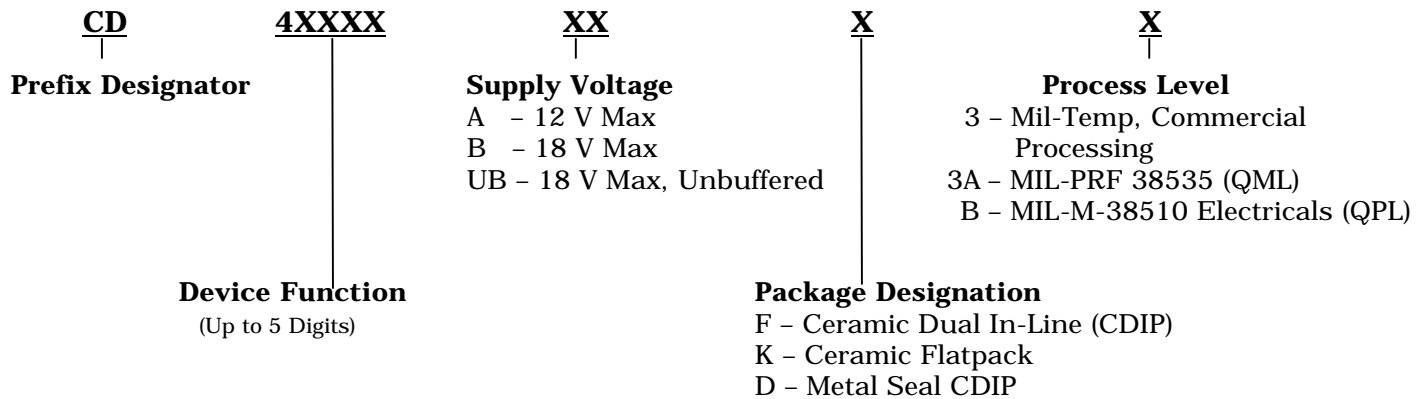
Product Nomenclature

TI LOGIC Acquired from Harris Semiconductor

HC/HCT High Speed CMOS and AC/ACT Advanced CMOS



CD4000 LOGIC



Advanced Logic Products

Introduction

Texas Instruments Military Semiconductors offers a broad product spectrum of military logic devices designed to meet and support military performance and reliability needs. Standard process options include MIL-PRF-38535 (SNJ prefix) and military temperature range only (SN prefix).

Military system designers can select from the following technologies/product families:

Low Voltage Advanced BiCMOS

54LVTH The low-voltage technology (LVTH) product line consists of bus interface functions with bus hold designed to operate at $V_{CC} = 3.3\text{ V}$. These devices feature very low power consumption and provide performance comparable to 5-V advanced BiCMOS technology (ABT). LVT input and output voltage levels are compatible with 5-V TTL levels, making it ideal for mixed level systems.

Advanced BiCMOS

54ABT ABT devices offer high speed switching with the benefit of low noise, low power consumption and high output drive current. Based on EPIC-IIB™ BiCMOS design, ABT offers numerous improvements over BiCMOS Technology (BCT) while retaining TTL compatibility.

BiCMOS

54BCT A standard bipolar/CMOS process featuring high drive, low noise, low power consumption, and TTL compatibility.

Low Voltage CMOS

54LVC With a range of functions that includes gates, MSI and octals, LVC gives the designer a solid choice to migrate to low voltage in mid-range applications. This family supports mixed-mode signal operations on all ports (5-V input/output voltage with 3.3-V V_{CC}).

Advanced CMOS

54AC, 54ACT Advanced CMOS devices offer advanced bipolar speed with low power consumption and low noise. Industry standard pinouts allow for ease of design and cross reference.

Advanced High Speed CMOS

54AHC, 54AHCT AHC and AHCT provide the HCMOS user an excellent migration path to upgrade their speed performance in low power / low noise / low drive applications. Standard offerings include both CMOS- (AHC) and TTL- (AHCT) compatible functions.

High-Speed CMOS

54HC, 54HCT This family features a broad range of functions from gates to complex functions. HCMOS, designed as a replacement for Low-Power Schottky TTL, offers speeds comparable with 54LS but lower power consumption.

CD4000 Series

CD4 This series of high-voltage CMOS devices comprises a spectrum of functions that ranges from simple gates to complex counters, registers and arithmetic circuits.

Advanced Logic Products

Advanced Bipolar

54ALS, 54AS, 54F Advanced Low-Power Schottky and Advanced Schottky combine to provide the designer with a broad range of functions that aid in optimizing designs. The 54ALS, 54AS, and 54F families enable a socket-by-socket selection of devices for optimum speed and power.

Standard TTL

54LS, 54S, 54 Standard TTL devices offer a large number of general purpose logic functions 54xxx with standard pinouts and standard packaging.

WideBus™ and WideBus+™

ABT16, ACT16, WideBus devices offer 16-, 18-, and 20-bits of bus interface logic in one space saving package. WideBus+ devices offer 32- and 36-bits of bus interface logic in one package.
LVTH16, ABT32

Crossbar Technology

54CBT CBT enables a bus-interface device to function as a very fast bus switch, effectively isolating buses when the switch is open and offering very little propagation delay when the switch is closed. CBT devices can also be used as 5-V to 3.3-V translators, allowing designers to mix 5-V or 3.3-V components in the same system.

SCOPE™

54BCT8 SCOPE devices blend test circuitry with standard logic functions to facilitate testing of complex circuit-board assemblies. In the normal mode, the device is functionally equivalent to the standard device. In the test mode, the test circuitry can be activated via the 4-wire Test Access Port (TAP) to take snapshot samples of the data appearing at the device pins or to perform a self test on the boundary test cells. These functions are offered in both standard and WideBus packaging, 5 V and 3.3 V compatible.
54ABT8
54ABT18
54LVTH18

FIFO

54ABT First-in first-out (FIFO) memories can connect data buses operating at different clock 54ACT rates. These memories offer different flag configurations and different data widths/depths to allow greater system optimization.

Clock Drivers

54CDC Clock distribution circuits (CDC) offer flexible switching and clock manipulation while providing low skew. CDCs available are gate-based, flip-flop based, and phase-lock-loop based.

Gunning Transceiver Logic

54GTL GTL is a new reduced-voltage switching standard that provides high-speed, point-to-point communications with low power dissipation. TI offers GTL/TTL translators to interface with TTL-based subsystems.

Futurebus / BTL

54FB Backplane Transceiver Logic (BTL) provides incident-wave switching capability, low capacitance with high current drive capability, and controlled 1-V voltage swings for better noise margins.
EPIC-IIB, WideBus, WideBus+ and SCOPE are trademarks of TI.

Advanced Logic Products

New Technologies

Advanced High Speed CMOS (AHC, AHCT)

DESCRIPTION

Advanced High-Speed CMOS Logic (AHC and AHCT) provide the HCMOS user an excellent migration path to upgrade their speed performance in low power / low noise / low drive applications. AHC devices are fully compatible with CMOS switching levels while AHCT devices are TTL switching level compatible. These technologies have been fully qualified per the requirements of MIL-PRF-38535 (QML) and are available from distributor stock.

FEATURES

- **Speed:** With typical propagation delays of 6.0 ns (octals), roughly 3 times faster than HC, AHC is the quick and quiet solution for higher speed operation.
- **Low Noise:** AHC allows designers who like the low noise characteristics of HCMOS to design at today's performance levels without the overshoot/undershoot problems typical of higher drive devices usually required to achieve AHC speed levels.
- **Low Power:** AHC averages 40 μ A of static current, half that of HCMOS.
- **Drive:** Output current is ± 8 mA at 5.0-V Vcc and ± 4 mA at 3.3-V Vcc.
- **Technology:** EPIC™ - Enhanced-Performance Implanted CMOS process.
- **Latch-Up Immunity:** AHC and AHCT exceed 300 mA per JEDEC Standard JESD-17.
- **Pricing:** AHC and AHCT are priced at parity with standard HC and HCT.

AVAILABILITY

- **Product Spectrum:** A total of **45** functions have been released to date (gates, medium scale integration and octals).
- **Packaging:** Available in Ceramic Dual In-Line (J suffix typically and F suffix for products acquired from Harris Semiconductor), Ceramic Flatpack (W suffix) and Leadless Ceramic Chip Carrier (FK suffix) packages.
- **Specifications:** All functions released have a corresponding DSCC SMD (Standard Microcircuit Drawing). An SMD cross reference can be found in the AHC/AHCT Military Fact Sheet.

Device Nomenclature	Packaging Nomenclature
SNJ54AHCxxx or SNJ54AHCTxxx	J / W / FK

LITERATURE INFORMATION

1998 AHC/AHCT Military Brief — Literature Number SGYN133

1999 AHC/AHCT Military Fact Sheet - Literature Number SGYV014

Individual Data Sheets — Available from the TI Product Information Center at (972) 644-5580 or via TI's Internet Site (<http://www.ti.com/sc>)

Advanced Logic Products

Crossbar Switches (CBT)

DESCRIPTION

CBT enables a bus-interface device to function as a very fast bus switch, effectively isolating buses when the switch is open and offering very little propagation delay when the switch is closed. CBT devices can also be used as 5-V to 3.3-V translators, allowing designers to mix 5-V or 3.3-V components in the same system.

FEATURES

- **I/Os:** TTL Compatible inputs and outputs
- **R_{on}:** Approximately 5-Ω
- **Voltage Translation:** Can perform 5-V to 3-V translation with minimal propagation delay using only a 5-V supply
- **Plug N' Play:** Provides hot-card insertion capability to TTL logic
- **Technology:** N-channel MOS transistors driven by CMOS gates

Parent Device	Description	DSCC SMD
SNJ54CBT3383JT/W/FK	10-Bit Bus Exchange Switches	5962-9668801QLA/KA
SNJ54CBTD3384JT/W/FK	10-Bit Bus Switches w/ Level Shifting	5962-9752701QLA/KA/3A
SNJ54CBT16209WD	18-Bit Bus Exchange Switches	5962-9669701QXA
SNJ54CBT16212AWD	24-Bit Bus Exchange Switches	5962-9852101QXA
SNJ545CBT16244WD	16-Bit Bus Switches	5962-9855301QXA

GTL Technology

DESCRIPTION

GTL technology is a new reduced-voltage switching standard that provides high-speed, point-to-point communications with low power dissipation. TI offers GTL/TTL translators to interface with the TTL-based subsystems. This enables designers to use the GTL switching standards for speed-sensitive subsystems and translators to interface with the rest of the system.

FEATURES

- **Noise:** External VREF provides common-mode noise immunity (derived from 1.2-V pull up)
Low signal amplitude reduces EMI
- **Speed:** Absence of reflections allows higher system clock rate
Very high speed point to point communication (100+ MHz)
Backplane speeds over 60 MHz

Parent Device	Description	DSCC SMD
SNJ54GTL16612WD	8-Bit GTL/LVT UBT with Buffered Clock	5962-9689001QXA

Advanced Logic Products

Clock Drivers

DESCRIPTION

Clock Drivers are optimized for signal generation, synchronization and distribution. These high-speed circuits have tightly controlled skew characteristics that allow them to easily outperform standard bus drivers. TI Military Semiconductors will broaden our offering in this family of product based on customer inputs.

FEATURES

- **I/Os:** Distribute clock signals with minimum output and pulse skew
Guaranteed skew limits (800 ps over Mil Temp range)
Flexible output enable structure
- **Functions:** Gate-, Flip-Flop-, and Phase-Lock-Loop-based

Parent Device	Description	DSCC SMD
SNJ54CDC586WD	Phase-Lock-Loop 3.3-V Vcc w/ TTL-Compatible Outputs	5962-9754001QXA

Advanced Logic Products - Device Descriptions

Function	Description
00	Quad 2-input NAND
01	Quad 2-input NAND
02	Quad 2-input NOR
03	Quad 2-input NAND
04	Hex Inverter
04U	Unbuffered '04
05	Hex Inverter (OC)
06	Hex Inverter (buffer)
07	Hex Inverter (buffer)
08	Quad 2-input AND
09	Quad 2-input AND
10	Triple 3-input NAND
11	Triple 3-input AND
12	Triple 3-input NAND
14	Hex Schmitt-Trigger
15	Triple 3-input AND
16	Hex Inv. Buffer
17	Hex Buffer
20	Dual 4-input NAND
21	Dual 4-input AND
23	Dual 4-input NOR
25	Dual 4-input NOR
26	Quad 2-input NAND
27	Triple 3-input NOR
28	Quad 2-input NOR
30	8-input NAND
32	Quad 2-input OR
33	Quad 2-input NOR
37	Quad 2-input NAND buffer
38	Quad 2-input NAND buffer
40	Dual 4-input NAND buffer
42	4-to-10 BCD-to-Decimal Decoder
45	BCD-to-Decimal Decoder
47	BCD-to-7 Seg. Decoder
49	BCD-to-7 Seg. Decoder

Function	Description
50	Dual AND-Or-Invert(expandable)
51	Dual AND-Or-Invert
54	4-wide AND-Or-Invert
64	4-2-3-2 AND-Or-Inverter
70	AND-gated J-K-Flip-Flop
72	J-K Master-Slave Flip-Flop
73	Dual J-K Flip-Flop w/ Reset
74	Dual D-type Flip-Flop w/ Set and Reset
75	4-bit bistable Latches
76	Dual J-K Flip-Flop
83	4-bit Full Adder
85	4-bit Mag. Comparator
86	Quad Exclusive-OR
90	Decade Counter
91	8-bit Shift Register
92	Divide-by-12 Counter
93	4-bit Binary Counter
95	4-bit Shift Register
96	5-bit Shift Register
97	Sync. 6-bit Bin.Rate MULT
107	Dual J-K Flip-Flop w/ Reset
109	Dual J-K Flip-Flop w/ Set and Reset
112	Dual J-K Flip-Flop w/ Set and Reset
114	Dual J-K Flip-Flop
121	Monostable Multivibrators
122	Re-Trig. Mon. Multivibrators
123	Dual '122
124	Dual VCO
125	Quad Bus Buffer (/OE)
126	Quad Bus Buffer (OE)
128	75-Ohm Line Driver
132	Quad NAND Schmitt-Trigger

Function	Description
133	13-input NAND
134	12-input NAND
135	Quad Exclusive-OR/NOR
136	Quad Exclusive-OR (OC)
137	3-to-8 Decoder/Mux
138	3-to-8 Decoder/Mux
139	Dual 3-to-4 Decoder/Mux
140	Dual 4-input NAND (50 Ohm)
145	BCD-to-Decimal Decoder
H 147	10-to-4-Line Priority Encoder
148	8-to-3 LINE Decoder
150	1-of-16 Data Selector / Mux
151	1-of-8 Data Selector / Mux
153	Dual 4-to-1 Selector / Mux
154	4-to-16 line Dec / Demux
155	Dual 2-to-4 Decoder
156	Dual 1-to-4 Demux(OC)
157	Quad 2-to-1 Sel / Mux
158	Quad 2-to-1 INV. Sel / Mux
H 160	Sync BCD Decade Counter Asynchronous Reset
161	Sync. 4-bit Binary Counter
H 162	Sync. BCD Decade Counter Synchronous Reset
163	Sync. 4-bit Binary Counter
164	8-bit Shift Register (Serial-In/Parallel Out)
165	8-bit Shift Register (Serial-In/Parallel Out)
166	8-bit Shift Register (Serial-In/Parallel Out)
169	Sync. 4-bit U/D Counter
170	4-by-4 Register File
173	Quad D-type Register
174	Hex D-type Flip-Flop w/ Reset

Function	Description
175	Quad D-type Flip-Flop w/ Reset
176	Preset Counter/Latch
177	Binary Counter/Latch
180	9-bit Odd/Even Parity Gen
181	4-bit ALU
182	Look-Ahead Carry Generator
H 190	Presetable Syn. BCD Decade w/ U/D Counter
191	Sync. U/D Binary Counter
192	Sync. U/D BCD Counter
193	Sync. U/D Binary Counter
194	4-bit Shift Register
195	4-bit Shift Register
196	Decade Counter
197	4-bit Counter/Latch
221	Dual Monostable MultiVibrator
222	16K x 4 bipolar FIFO
224	16K x 4 bipolar FIFO
H 237	3-to-8-Line Decoder/Mux w/ Address Latches
238	3-to-8 Line Dec / Demux
240	8-bit Buffer
241	8-bit Buffer
243	4-bit Transceiver
244	8-bit Buffer
LVT244	3.3 volt '244
245	8-bit Transceiver
LVT245	3.3 volt '245
250	16- to 1-line Decoder
251	8-input Multiplexer
253	Dual 4-to-1 Sel / Mux
257	Quad 2-to-1 Sel / Mux
258	Quad 2-to-4 Sel / Mux (Inv)
259	8-bit Addressable Latch

H = Recently-Acquired Product From Harris Semiconductor

U = Recently-Acquired Product From Cypress Semiconductor Corporation

Advanced Logic Products - Device Descriptions

Function	Description
260	Dual 5-input NOR
265	Quad C-O Elements
266	Quad Exclusive-NOR (OC)
273	Octal D-type Flip-Flop w/ Reset
279	Quad S-R Latch
280	9-bit Odd/Even Parity Gen
283	4-bit Binary Full Adder
286	9-bit Parity Checker / Gen
H 297	Digital Phase Lock Loop
298	Quad 2-input MUX
299	8-bit Shift Register
323	8-bit Shift Register
348	8-to-3 Priority Encoder
352	Dual 4-to-1 Data Sel / Mux
H 354	8-Input Mux/Reg, Three State
H 356	8-Input Mux/Reg, Three State
365	Hex Buffer
366	Hex Driver
367	Hex Buffer (4-bit & 2-bit)
368	Hex Driver
373	8-bit Latch
374	8-bit D-type Flip-Flop
375	4-bit Latch
376	Quad J-K Flip-Flop
377	8-bit D-type Flip-Flop
378	6-bit D-type Flip-Flop
379	4-bit D-type Flip-Flop
381	ALU Function Generator
390	Dual Decade Counter
393	Dual 4-bit Counter
395	4-bit Shift Register
396	8-bit Storage Register
399	Quad 2-input Mux

Function	Description
H 423	Dual Retriggerable Monostable Multivibrator w/ Reset
U 480	8-bit Dual Parity Generator / Checker
521	8-bit Identity Comparators
533	8-bit D-type transp. Latch
534	8-bit D-type Flip Flop
540	8-bit Buffer/Driver
541	8-bit Buffer/Driver
543	8-bit Reg. Transceiver
544	8-bit Reg. Transceiver
561	4-bit binary Counter
563	8-bit D-type Transp. Latch
564	8-bit D-type Flip-Flop
569	4-bit Up/Down Counter
573	8-bit Latch
LVT573	3.3 volt '573
574	8-bit D-type Flip-Flop
LVT574	3.3 volt '574
575	8-bit D-type Flip-Flop
576	8-bit D-type Flip-Flop
580	8-bit D-type transp. Latch
590	8-bit Counter
592	8-bit Counter
593	8-bit Counter
595	8-bit Shift Register
597	8-bit Shift Register
598	8-bit Shift Register
620	8-bit Transceiver
621	8-bit Transceiver
623	8-bit Transceiver
628	Volt. Contr. Oscillator
629	Volt. Contr. Oscillator
630	16-bit Error Detect & Correct
640	8-bit Transceiver

Function	Description
645	8-bit Transceiver
646	8-bit Transceiver
LVT646	3.3 Volt '646
648	8-bit XCVR & Register
651	8-bit XCVR & Register
652	8-bit Transceiver
653	8-bit XCVR & Register
669	Sync. 4-bit Counter
670	4-by-4 Register File
673	16-bit Shift Register
674	16-bit Shift Register
682	8-bit Identity Comparator
684	8-bit Identity Comparator
688	8-bit Identity Comparator
697	Sync. Up/Down Counter
756	8-bit Buffer/Driver
760	8-bit Buffer (OC)
804	Hex 2-input NAND Driver
805	Hex 2-input NOR Driver
808	Hex 2-input AND Driver
821	10-bit Interface Flip-Flop
823	9-bit Interface Flip-Flop
825	8-bit Interface Flip-Flop
827	10-bit Buffer / Driver
832	Hex 2-input OR Driver
841	10-bit D-type Latch
843	9-bit D-type Latch
853	8- to 9-bit Parity Transceiver
857	Hex 2- to 1-line Multiplier
867	8-bit Up/Down Counter
869	8-bit Up/Down Counter
873	8-bit D-type transp. Latch
874	8-bit D-type Flip-Flop
885	8-bit Magnitude Comparator
996	8-bit Read-Back Latch
1000	Quad 2-input NAND Buffer

Function	Description
1004	Hex Inverting Driver
1005	Hex Inverting Buffer
1032	Quad 2-input OR Buffer
1034	Hex Non-Invert. Driver
1035	Hex Non-Invert. Driver
1244	8-bit Buffer
1245	8-bit Transceiver
1645	8-bit Transceiver
2240	'240 w/ Output Damping R
2244	'244 w/ Output Damping R
2245	'245 w/ Output Damping R
2827	10-bit MOS Driver
2828	10-bit MOS Driver
2952	8-bit Transceiver & Register
3614	36-bit x 64 x 2 FIFO
3641	36-bit x 1K FIFO
4002	Dual 4-input NOR
H 4015	Dual 4-bit Serial-In/Parallel-Out Shift Register
H 4017	Johnson Decade Counter w/ 10 Decoded Outputs
4020	14-bit Counter
4024	7-bit Counter
4040	12-bit Counter
H 4046	Phase Lock Loop w/ VCO
H 4049	Hex Inverting High-to-Low Level Shifter
H 4050	Hex High-to-Low Level Shifter
H 4051	8-Channel Analog Mux/Demux
H 4052	Dual 4-Channel Analog Mux/Demux
H 4053	Triple 2-Channel Analog Mux/Demux

Abbreviations Key for ASL Selection Guide:

ALU - Arithmetic Logic Unit
ASP - Addressable Scan Ports
C-O - Complementary-Output
FIFO - First-In, First Out Memory
Gen - Generator
Inv - Inverting
Mult - Multiplier
Mux - Multiplexer
OC - Open Collector Outputs
Reg - Register

Sel - Selector
Sync - Synchronous
UBT - Universal Bus Transceiver
UBE - Universal Bus Exchanger
U/D - Up / Down

VCO - Voltage-Controlled Oscillator
XCVR - Transceiver



Advanced Logic Products - Device Descriptions

Function	Description
H 4059	Programmable Divided by "N" Counter
H 4060	14-Stage Binary Ripple Counter w/ Oscillator
H 4066	Quad Bilateral Switch
H 4075	Triple 3-Input OR Gate
H 4094	8-Stage Shift & Store Bus Reg
H 4316	Quad Analog Switch
H 4351	Analog Mux w/ Latch
H 4511	BCD-to-7-Segment Latch/Decoder/Driver
H 4514	4-to-16-Line Decoder/Demux w/ Input Latches
H 4515	4-to-16-Line Decoder w/ Input Latches
H 4516	U/D Counter, Binary
H 4520	Dual 4-bit Sync Binary Counter
H 4538	Dual Precision Monostable Multivibrator
H 7266	Quad Exclusive NOR
7811	1K x 18 FIFO
7819	512 x 18 x 2 FIFO
7820	512 x 18 x 2 FIFO
8240	'240 with JTAG
8244	'244 with JTAG
8245	'245 with JTAG
8373	'373 with JTAG
8374	'374 with JTAG
8543	'543 with JTAG
8646	'646 with JTAG
8652	'652 with JTAG
8990	Scan Test Controller
8996	10-bit ASP
8997	Scan Path Linker

Function	Description
8999	Scan Path Selector
16240	16-bit '240
16241	16-bit '241
16244	16-bit '244
LVT16244	3.3 volt '16244
16245	16-bit '245
LVT16245	3.3 volt '16245
16260	12- to 24-bit Mux D-Latch
16373	16-bit '373
LVT16373	3.3 volt '16373
16374	16-bit '374
LVT16374	3.3 volt '16374
LVT16501	3.3 volt '16501
16543	16-bit '543
16601	18-bit UBT
16640	16 bit '640
16646	16-bit '646
16652	16-bit '652
16823	18-bit '823
16841	20-bit D-type Latch
16952	16-bit Reg. Transceiver
18245	JTAG '16245
18502	JTAG '16502
H18502	Bus-Hold Version of '18502
LVT18502	3.3 volt '18502
18646	JTAG '16646
H18646	Bus-Hold Version of '18646
U 29520	8-bit Identity Comparators
U 29818	Diagnostic Scan Register
29821	10-bit Bus Interf. Flip-Flop
29823	9-bit Bus Interf. Flip-Flop
32245	36-bit '245
32316	16-bit 3-Port UBE
32501	36-bit UBT
32543	36-bit '543

Function	Description
H 40102	8-bit Sync BCD Down Counter
H 40103	8-bit Binary Down Counter
H 40105	4-bits X 16 Words FIFO Register
162244	16-bit '2244
LVT162244	3.3 Volt '162244
162245	16-bit '2245
LVT162373	3.3 Volt '162373 w/ Output Damping R

H = Recently-Acquired Product From Harris Semiconductor
U = Recently-Acquired Product From Cypress Semiconductor Corporation

Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS							BIPOLAR						
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
00				◆F,J,W,FK	◆F	J,W,FK	J,W,FK		◆F,J,W,FK	◆F	(A)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W
01															J,W,FK		J,W
02				◆F	◆F				◆F,J,W,FK	◆F	(A)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W
03									◆F,J,FK	◆F		(B)J,FK			J,W,FK	J,W,FK	
04				◆F,J,W,FK	◆F,J,W,FK	J,W,FK	J,W,FK		◆F,J,W,FK	◆F,J,FK	(A)J,W,FK	(B)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W
U04						J,W,FK			◆F,J,FK								
05				◆F	◆F				J,FK			(A)J,W,FK			J,W,FK	J,W,FK	J,W
06															J,W,FK		J,W,FK
07																	J,W,FK
08				◆F,J,W,FK	◆F,J,W,FK		J,W,FK		◆F,J,W,FK	◆F	(A)J,W,FK	J,W,FK	J,W,FK		J,W,FK	J,W,FK	
09												J,FK			J,W,FK	J,W,FK	
10				J,W,FK	J,W,FK				◆F,J,W,FK	◆F		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
11				J,W,FK	J,W,FK				◆F,J,W,FK	◆F		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
12																	J,W
14				J,W,FK		J,W,FK	J,W,FK		◆F,J,W,FK	◆F,J,W,FK					J,W,FK		J,W
15																J,W,FK	
16																	J,W
17																	J
20				◆F	◆F				◆F,J,W,FK	◆F		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
21									◆F,J,FK			(A)J,W,FK			J,W,FK		
23																	J,W
25																	J,W
26															J,W,FK		
27									◆F,J,W,FK	◆F		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK		
28																	J,W
30									◆F	◆F		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W
32				◆F,J,W,FK	◆F	J,W,FK	J,W,FK		◆F,J,W,FK	◆F	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W
33												(A)J,FK			J,W		
37												(A)J,W,FK			J,W,FK	J,W,FK	J,W
38												(B)J,W,FK			J,W,FK	J,W,FK	J,W
40																	J,W
42									◆F,J,FK	◆F							
45																	J,W

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
47															J,W,FK		(A)J,W
49															J		
50																	J,W
51															J,W,FK	J,W,FK	J,W
54															J,W,FK		J,W
64																J,W,FK	
70																	J,W
72																	J,W
73									♦F						(A)J,W		
74				♦F,J,W,FK	♦F,J,W,FK		J,W,FK		♦F,J,W,FK	♦F	(A)J,W,FK	(A)J,W,FK	(A)J,W,FK	J,W,FK	(A)J,W,FK	J,W,FK	J,W
75									♦F	♦F					J,W		
76															(A)J,W		J,W
83																	(A)J,W
85									♦F	♦F					J,W,FK	J,W,FK	
86				J,W,FK	♦F,J,W,FK	J,W,FK	J,W,FK		♦F,J,W,FK	♦F	(A)J,W,FK	J,W,FK	(A)J,W,FK		(A)J,W,FK	J,W,FK	J,W
90															J,W		(A)J,W
91															J,W		
92																	(A)J,W
93															J,W		
95																	(A)J,W
96																	J,W
97																	J
107									♦F								J
109				♦F	♦F				♦F,J,FK,W	♦F		(A)J,W,FK	(A)J,W,FK	J,W,FK	(A)J,W,FK		
112				♦F	♦F				♦F,J,W,FK	♦F		(A)J,W,FK			(A)J,W,FK	J,W,FK	
114																J,W	
121																	J,W
123							(A)J,W,FK		♦F	♦F					J,W,FK		J
124															use 629	J,W	
125	J,W,FK	(A)J,W,FK							♦F,J,FK	♦F					(A)J,W,FK		
126		(A)J,W,FK							♦F,J,FK								
128																	J,W,FK
132									♦F,J,W,FK	♦F					J,W,FK	J,W,FK	J

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
133												J,W,FK					J,W,FK
134																	J,W
135																	J,W
136															J,W,FK		
137												(A)J,W,FK			J,W,FK		
138				♦F	♦F			♣L, ♠D	♦F,J,W,FK	♦F,J,FK	(A)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
139				♦F	♦F				♦F,J,W,FK	♦F		J,W,FK			(A)J,W,FK	J,W,FK	
140																	J,W,FK
145															J,W,FK		J
147									♦F								
148									J,W,FK						J,W,FK		J,W
150																	J,W
151					♦F				♦F,J,FK	♦F		J,W,FK			J,W,FK	J,W,FK	
153				♦F	♦F				♦F,J,W,FK	♦F		J,W,FK		J,W,FK	J,W,FK	J,W,FK	J,W
154									♦F	♦F							J,W
155															(A)J,W		J,W
156															J,W,FK		
157				♦F				♣L	♦F,J,W,FK	♦F		(A)J,W,FK			J,W,FK	J,W,FK	J,W
158									♦F	♦F		J,W,FK			J,W,FK	J,W,FK	
160									♦F	♦F							
161				♦F	♦F				♦F,J,W,FK	♦F		(B)J,W,FK	J,W,FK		(A)J,W,FK		
162									♦F								
163				♦F	♦F			♣L	♦F,J,FK	♦F		(B)J,W,FK	J,W,FK		(A)J,W,FK	J,W,FK	J,W
164				♦F	♦F				♦F,J,W,FK	♦F					J,W,FK		J,W
165									♦F,J,W,FK	♦F		J,W,FK			(A)J,W,FK		
166									♦F,J,FK	♦F					(A)J,W,FK		J,W
169												(B)J,W,FK	(A)J,W,FK		(B)J,W,FK	J,W,FK	
170															J,W		
173									♦F	♦F					(A)J,W,FK		J,W
174					♦F				♦F,J,W,FK	♦F		J,W,FK	J,W,FK		J,W,FK	J,W,FK	

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
175									♦F,J,W,FK	♦F		J,W,FK	(A)J,W,FK		J,W,FK	J,W,FK	J,W
176																	J
177																	
180																	J,W
181													(B)JT,W,FK		J,W,FK	J,W,FK	
182																J,W,FK	
190									♦F								
191				♦F	♦F				♦F,J,FK	♦F		(A)J,W,FK			J,W,FK		J,W
192									♦F								J,W
193				♦F	♦F				♦F,J,FK	♦F		(A)J,W,FK			J,W,FK		J,W
194									♦F				J,W,FK		(A)J,W,FK	J,W,FK	
195									♦F,J,FK						(A)J,W,FK	J,W,FK	J,W
196																	J
197															J,W,FK		J,W
221									♦F						J,W,FK		J
222															(A)J,FK		
224															(A)J,FK		
237									♦F								
238									♦F	J,FK							
240	J,W,FK	J,W,FK	J,FK,W	♦F,J,W,FK	♦F,J,W,FK	J,W,FK	J,W,FK	♣L, ♠D	♦F,J,W,FK	♦F,J,FK		(A)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	
241	J,W,FK	J,W,FK			♦F,J,W,FK				J,FK	♦F		(C)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	
243									♦F	♦F		(A)J,W,FK			J,W,FK		
244	J,W,FK	J,W,FK	J,W,FK	♦F,J,W,FK	♦F,J,W,FK	J,W,FK		♣L, ♠D	♦F,J,W,FK	♦F,J,FK	(A)J,W,FK	(C)J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	
245	(A)J,W,FK	J,W,FK‡	J,W,FK	♦F,J,W,FK	♦F,J,W,FK			♣L, ♠D	♦F,J,W,FK	♦F,J,W,FK		(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK		
250													(A)JT,W,FK				
251									♦F,J,FK	♦F		J,W,FK			J,W,FK	J,W,FK	
253					♦F				J,FK			J,W,FK			J,W,FK		
257				♦F	♦F				♦F,J,FK	♦F		(A)J,W,FK			(B)J,W,FK	J,W,FK	
258										♦F		(A)J,W,FK			(B)J,W,FK	J,W,FK	
259									♦F,J,FK	♦F		J,W,FK					
260																J,W,FK	
265																	J

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS							BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
266														J,W,FK		
273	J,W,FK			♦F	♦F			♣L, ♠D	♦F		J,W,FK			J,W,FK		
279														(A)J,W,FK		J,W
280				♦F	♦F				♦F					J,W,FK	J,W,FK	
283				♦F	♦F				♦F				J,W,FK	J,W,FK	J,W,FK	
286												J,W,FK				
297																
298														J,W,FK		J,W
299				♦F	♦F				♦F		J,W,FK			J,W,FK	J,W,FK	
323					♦F						J,W,FK			J,W,FK		
348														J,W,FK		
352											J,FK					
354																
356																
365									♦F					(A)J,W,FK		(A)J
366														(A)J,W,FK		(A)J,W
367									♦F					(A)J,W,FK		(A)J,W
368														(A)J,W,FK		(A)J,W
373	J,W,FK	J,W,FK		♦F,J,W,FK	♦F,J,W,FK			♣L, ♠D	♦F,J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
374	J,W,FK	J,W,FK		♦F,J,W,FK	♦F,J,W,FK			♣L, ♠D	♦F,J,W,FK	(A)J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	J,W,FK	
375														J,W,FK		
376																J
377	J,W,FK							♣L	♦F					J,W,FK		
378														J,W,FK		
379														J,W,FK		
381															J,W,FK	
390									♦F					J,W,FK		
393									♦F					J,W,FK		J,W
395														(A)J,W,FK		
396														J		
399														J,W,FK		
423									♦F							
480								♣L								

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
520												J,FK					
521												use 688		J,W,FK			
533	J,W,FK				♦F				♦F	♦F							
534	J,W,FK				♦F				♦F	♦F		(A)J,W,FK					
540		J,W,FK			♦F			♣L, ♣D	♦F,J,FK	J,FK	(A)J,W,FK				J,W		
541	J,W,FK	J,W,FK		♦F	♦F			♣D	♦F,J,W,FK	♦F,J,FK	(A)J,W,FK	J,W,FK		J,W,FK	J,W,FK		
543	(A)JT,W,FK	JT,W,FK						♣D									
544		JT,W,FK															
561												(A)J,W,FK					
563									♦F			(A)J,W,FK					
564									♦F	♦F		(B)J,W,FK					
569												(A)J,W,FK					
573	J,W,FK	J,W,FK	J,W,FK	♦F	♦F,J,W,FK			♣D	♦F,(A)J,W,FK	♦F	(A)J,W,FK	(C)J,W,FK	(A)J,W,FK				
574	J,W,FK	J,W,FK	J,W,FK	♦F,J,W,FK	♦F			♣L, ♣D	♦F,J,FK	♦F	(A)J,W,FK	(B)J,W,FK	J,W,FK				
575													JT,W,FK				
576												(B)J,W,FK	J,W,FK				
580												(B)J,W,FK					
590									(A)J,FK						J,W,FK		
592															J,W,FK		
593															J,W,FK		
595									J,W,FK						J,W,FK		
597									♦F						J,W,FK		
598															J,W,FK		
620		(A)J,W,FK															
621															J,W,FK		
623	(A)J,W,FK	J,W,FK			♦F										J,W,FK		
628																J	
629																J,W	
630																JD,FK	
640		J,W,FK							♦F,J,FK	♦F		(B)J,W,FK	J,W,FK		J,W,FK		
645									J,FK			(A)J,W,FK	J,W,FK		J,W,FK		
646	(A)JT,W,FK	JT,W,FK	JT,W,FK					♣L	♦F		(A)J,W,FK	JT,W,FK	JT,W,FK				

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- ‡ Function is available with Bus Hold

* As of 1Q98, all TI Military LVT devices have the bus hold designator incorporated into their

Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS							BIPOLAR						
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
648												JT,W,FK					
651													JT,W,FK				
652	(A)J,W,FK	JT,W,FK									(A)J,W,FK	JT,W,FK	JT,W,FK				
653												JT,W,FK					
669																J,W,FK	
670									♦F							J,W,FK	
673																J,W,FK	
674																J,W,FK	
682																J,W,FK	
684																J,W,FK	
688									♦F,J,W,FK	♦F		J,W,FK				J,W,FK	
697																J,W,FK	
756													J,W,FK				
760		J,W,FK											J,W,FK				
804												(A)J,W,FK	(B)J,W,FK				
805												(A)J,W,FK	(B)J,W,FK				
808													(B)J,W,FK				
821	JT,W,FK												(A)JT,W,FK				
823	JT,W,FK												(A)JT,W,FK				
825													(A)JT,W,FK				
827	JT,W,FK								♣L								
832												(A)J,W,FK	(B)J,W,FK				
841	JT,W,FK								♣D								
843	JT,W,FK																
853	JT,W,FK																
857												JT,FK					
867													JT,W,FK				
869													JT,W,FK				
873												(B)JT,W,FK	(A)JT,W,FK				
874												(B)JT,W,FK					
885													JT,W,FK				
996												JT,W,FK					

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
1000													(A)J,W,FK				
1004													(A)J,W,FK				
1005												J,W,FK					
1032													(A)J,W,FK				
1034												J,W,FK	(A)J,W,FK				
1035												J,W,FK					
1244												(A)J,FK					
1245												(A)J,FK					
1645												use 1245					
2240	J,W,FK	J,W,FK															
2244	J,W,FK	J,W,FK															
2245	J,W,FK																
2827		(A)JT,W,FK															
2952	(A)JT,W,FK																
3614	PCB, HFP																
3641					PN												
4002									♦F,J,W,FK								
4015									♦F								
4017									♦F	♦F							
4020									♦F,J,W,FK	♦F							
4024									♦F,J,FK	♦F							
4040									♦F,J,W,FK	♦F							
4046									♦F	♦F							
4049									♦F								
4050									♦F								
4051									♦F	♦F							
4052									♦F								
4053									♦F								
4059									♦F	♦F							
4060									♦F	♦F							
4066									♦F								

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
4075									◆F	◆F							
4094									◆F								
4316									◆F								
4351									◆F								
4511									◆F								
4514									◆F								
4515									◆F								
4516									◆F								
4520									◆F								
4538									◆F	◆F							
7266									◆F								
7811						GB											
7819	GB																
7820	GB																
8240		(A)JT,FK															
8244		(A)JT,FK															
8245	JT,FK	(A)JT,FK															
8373		(A)JT,FK															
8374		(A)JT,FK															
8543	JT,FK																
8646	JT,FK																
8652	JT,FK																
8990						GB,HV											
8996	JT,FK																
8997						FK											
8999						FK											
16240	WD					WD											
16241	WD																
16244	WD		(A)WD			WD											
16245	WD‡		(A)WD			WD											
16260	WD																
16373	(A)WD		WD			WD											

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Advanced Logic Products - Devices in Production

Device	BiCMOS			CMOS								BIPOLAR					
	54ABT	54BCT	54LVTH*	54AC	54ACT	54AHC	54AHCT	54FCT	54HC	54HCT	54LVC	54ALS	54AS	54F	54LS	54S	54
16374	(A)WD		WD		WD												
16501	WD																
16543	WD																
16601	WD																
16640	WD																
16646	WD																
16652	WD																
16823	WD																
16841	WD																
16952	WD																
18245	WD																
18502	HV		HV														
H18502	(A)HV																
18646	HV																
H18646	(A)HV																
29520																	
29818																	
29821																	JT
29823																	JT
32245	PZ																
32316	HT																
32501	PZ																
32543	PZ																
40102																	
40103																	
40105																	
162244	WD		WD														
162245	WD																
162373			WD														

- ♦ "F" is the CDIP package designator used by Harris Semiconductor.
- ♣ "L" is the Chip Carrier package designator used by Cypress Semiconductor.
- ♠ "D" is the CDIP package designator used by Cypress Semiconductor
- ‡ Function is available with Bus Hold
- * As of 1Q98, all TI Military LVT devices have the bus hold designator incorporated into their nomenclature (i.e., LVTH) to denote the availability of this feature.



Advanced Logic Products - *Devices in Production*

CD4000 Series

Generic Part Number	Functional Description	Package Designator	Standard Screening Levels	Number Of Pins
CD4000A	Dual 3-Input NOR Gate Plus Inverter	F	B	14
CD4001A	Quad 2-Input NOR Gate	F	B	14
CD4001B	Quad 2-Input NOR Gate	F	B	14
		F	3A	14
CD4001UB	Quad 2-Input NOR Gate (Unbuffered)	F	3A	14
CD4002B	Dual 4-Input NOR Gate	F	3A	14
CD4006B	18-Stage Static Shift Register	F	3A	14
CD4007UB	Dual Complementary Pair Plus Inverter (Unbuffered)	F	3A	14
CD4008B	4-Bit Full Adder with Parallel Carry Out	F	3A	16
CD4009UB	Hex Buffer/Converter (Inverting, Unbuffered)	F	3A	16
CD4010B	Hex Buffer/Converter (Non-Inverting)	F	3A	16
CD4011A	Quad 2-Input NAND Gate	F	B	14
		D	3	14
CD4011B	Quad 2-Input NAND Gate	F	B	14
		F	3A	14
CD4011UB	Quad 2-Input NAND Gate	F		14
CD4012B	Dual 4-Input NAND Gate	F	B	14
		F	3A	14
CD4013A	Dual D-Type Flip-Flop with Set/Reset Capability	F	B	14
CD4013B	Dual D-Type Flip-Flop with Set/Reset Capability	F	B	14
		F	3A	14
CD4014B	8-Stage Static Shift Register	F	3A	16
CD4015B	Dual 4-Stage Static Shift Register	F	3A	16
CD4016B	Quad Bilateral Switch	F	3A	14
CD4017A	Decade Counter/Divider	F	B	16
CD4017B	Decade Counter/Divider	F	B	16
		F	3A	16

Advanced Logic Products - *Devices in Production*

Generic Part Number	Functional Description	Package Designator	Standard Screening Levels	Number Of Pins
CD4018B	Presettable Divide-By-N Counter	F	B	16
		F	3A	16
CD4019A	Quad AND/OR Select Gate	F	B	16
CD4019B	Quad AND/OR Select Gate	F	B	16
		F	3A	16
CD4020A	14-Stage Ripple-Carry Binary Counter/Divider	F	B	16
CD4020B	14-Stage Ripple-Carry Binary Counter/Divider	F	B	16
		F	3A	16
CD4021B	8-Stage Static Shift Register	F	B	16
		F	3A	16
CD4022B	Divide-By-8 Counter/Divider	F	3A	16
CD4023A	Triple 3-Input NAND Gate	F	B	14
CD4023B	Triple 3-Input NAND Gate	F	B	14
		F	3A	14
CD4024A	7 Stage Ripple-Carry Binary Counter/Divider	F	B	14
CD4024B	7 Stage Ripple-Carry Binary Counter/Divider	F	B	14
		F	3A	14
CD4025A	Triple 3-Input NOR Gate	F	B	14
CD4025B	Triple 3-Input NOR Gate	F	B	14
		F	3A	14
CD4027A	Dual J-K Master-Slave Flip-Flop w/ Set/Reset Capability	F	B	16
CD4027B	Dual J-K Master-Slave Flip-Flop w/ Set/Reset Capability	F	B	16
		F	3A	16
CD4028B	BCD-to-Decimal Decoder	F	3A	16
CD4029B	Presettable Up/Down Counter	F	3A	16
CD4030B	Quad Exclusive-OR Gate	F	B	14
		F	3A	14
CD4031B	64-Stage Static Shift Register	F	3A	16
CD4034B	8-Stage Shift Register	F	3A	24
CD4035B	4-Stage Parallel-In/Parallel-Out Shift Register	F	3A	24
CD4040B	12 Stage Ripple-Carry Binary Counter/Divider	F	3A	16
CD4041UB	Quad True/Complement Buffer	F	3A	14

Advanced Logic Products - *Devices in Production*

Generic Part Number	Functional Description	Package Designator	Standard Screening Levels	Number Of Pins
CD4042B	Quad Clocked "D" Latch	F	3A	16
CD4043B	Quad NOR R/S Latch (3-State Outputs)	F	3A	16
CD4044B	Quad NAND R/S Latch (3-State Outputs)	F	3A	16
CD4046B	Micropower Phase Lock Loop	F	3A	16
CD4047B	Low-Power Monostable/Astable Multivibrator	F	3A	14
CD4048B	Multifunction Expandable 8-Input Gate (3-State Outputs)	F	3A	16
CD4049A	Hex Buffer/Converter (Inverting)	F	B	16
CD4049UB	Hex Buffer/Converter (Inverting, Unbuffered)	F	B	16
		F	3A	16
CD4050A	Hex Buffer/Converter (Non-Inverting)	F	B	16
CD4050B	Hex Buffer/Converter (Non-Inverting)	F	B	16
		F	3A	16
CD4051B	8-Channel Analog Multiplexer/Demultiplexer	F	3A	16
CD4052B	4-Channel Analog Multiplexer/Demultiplexer	F	3A	16
CD4053B	Triple 2-Channel Analog Multiplexer/Demultiplexer	F	3A	16
CD4054B	4-Segment LCD Display Driver	F	3A	16
CD4056B	BCD-to-7 Segment LCD Driver	F	3A	16
CD4060B	14-Stage Ripple-Carry Binary Counter/Divider and Oscillator	F	3A	16
CD4063B	4-Bit Magnitude Comparator	F	3A	16
CD4066B	Quad Bilateral Switch	F	B	14
		F	3A	14
CD4067B	16-Channel Analog Multiplexer/Demultiplexer	F	3A	24
CD4068B	8-Input NAND/AND Gate	F	3A	14
CD4069UB	Hex Inverter	F	B	14
		F	3A	14
CD4070B	Quad EXCLUSIVE-OR Gate	F	B	14
		F	3A	14
CD4071B	Quad 2-Input OR Gate	F	B	14
		F	3A	14
CD4072B	Dual 4-Input OR Gate	F	3A	14
CD4073B	Triple 3-Input AND Gate	F	B	14
		F	3A	14

Advanced Logic Products - *Devices in Production*

Generic Part Number	Functional Description	Package Designator	Standard Screening Levels	Number Of Pins
CD4075B	Triple 3-Input OR Gate	F	B	14
		F	3A	14
CD4076B	4-Bit D-Type Register	F	3A	16
CD4077B	Quad Exclusive-NOR Gate	F	3A	14
CD4078B	8-Input NOR/OR Gate	F	3A	14
CD4081B	Quad 2-Input AND Gate	F	B	14
		F	3A	14
CD4082B	Dual 4-Input AND Gate	F	B	14
		F	3A	14
CD4085B	Dual 2-Wide 2-Input AND-OR-INVERT Gate	F	3A	14
CD4086B	Expandable 4-Wide 2-Input AND-OR-INVERT Gate	F	3A	14
CD4089B	Binary Rate Multiplier	F	3A	16
CD4093B	Quad 2-Input NAND Schmitt Triggers	F	3A	14
CD4094B	8-Stage Shift-and-Store Bus Register	F	3A	16
CD4097B	8-Channel Analog Multiplexer/Demultiplexer	F	3	24
CD4098B	Dual Monostable Multivibrator	F	B	16
		F	3A	16
CD4099B	8-Bit Addressable Latch	F	B	16
		F	3A	16
CD4502B	Strobed Hex Inverter/Buffer	F	B	16
		F	3A	16
CD4503B	Hex Buffer (Non-Inverting) (3-State Outputs)	F	3A	16
CD4504B	Hex Voltage-Level Shifter (for TTL-to-CMOS-or CMOS-to-CMOS Operation)	F	3A	16
CD4508B	Dual 4-Bit Latch	F	3A	24
CD4511B	BCD-to-7-Segment Latch Decoder Drivers	F	3A	16
CD4512B	8-Channel Data Selector (3-State Outputs)	F	3A	16
CD4514B	4-Bit Latch/4-to-16 Line Decoder (Outputs Low)	F	3A	24
CD4515B	4-Bit Latch/4-to-16 Line Decoder (Outputs Low)	F	3A	24
CD4516B	Presetable 4-Bit Binary Up/Down Counter	F	3A	16
CD4517B	Dual 64-Stage Static Shift Register	F	3A	16
CD4518B	Dual BCD Up-Counter	F	3A	16
CD4520B	Dual Binary Up-Counter	F	3A	16

Advanced Logic Products – *Devices in Production*

Generic Part Number	Functional Description	Package Designator	Standard Screening Levels	Number Of Pins
CD4532B	8-Bit Priority Encoder	F	3A	16
CD4536B	Programmable Timer	F	3A	16
CD4541B	Programmable Timer	F	3A	14
CD4555B	Dual 1-of-4 Decoder/Demultiplexer (Outputs High)	F	3A	16
CD4556B	Dual 1-of-4 Decoder/Demultiplexer (Outputs Low)	F	3A	16
CD4585B	4-Bit Magnitude Comparator	F	3A	16
CD4724B	8-Bit Addressable Latch	F	3A	16
CD14538B	Dual Precision Monostable Multivibrator	F	3A	16
CD40101B	9-Bit Parity Generator/Checker	F	3A	14
CD40103B	8-Stage Presettable Synchronous Down Counter	F	3A	16
CD40105B	4-Bit by 16-Word FIFO Register	F	3A	16
CD40106B	Hex Schmitt Triggers	F	3A	14
CD40107B	Dual 2-Input NAND Buffer/Driver	F	3A	14
CD40109B	Quad Low-to-High Voltage Level Shifter	F	3A	16
CD40160B	Sync Programmable 4-Bit Decade Counter w/ Async Clear	F	3A	16
CD40161B	Sync Programmable 4-Bit Binary Counter w/ Async Clear	F	3A	16
CD40163B	Sync Programmable 4-Bit Binary Counter w/ Sync Clear	F	3A	16
CD40174B	Hex D-Type Flip-Flop	F	3A	16
CD40175B	Quad D-Type Flip-Flop	F	3A	16
CD40192B	Presettable BCD Up/Down Counter	F	3A	16
CD40193B	Presettable Binary Up/Down Counter	F	3A	16
CD40257B	Quad 2-Line-to-1-Line Data Selector/Multiplexer	F	3A	16

Advanced Logic Products

MIL-PRF-38535 to TI/Harris Hi-Rel Types Sorted by JAN Type**

MIL-PRF Designation	Harris Type
JM38510/05001BCA	CD4011AFB
JM38510/05003BCA	CD4023AFB
JM38510/05051BCA	CD4011BFB
JM38510/05052BCA	CD4012BFB
JM38510/05053BCA	CD4023BFB
JM38510/05101BCA	CD4013AFB
JM38510/05102BEA	CD4027AFB
JM38510/05151BCA	CD4013BFB
JM38510/05152BEA	CD4027BFB
JM38510/05201BCA	CD4000AFB
JM38510/05202BCA	CD4001AFB
JM38510/05204BCA	CD4025AFB
JM38510/05252BCA	CD4001BFB
JM38510/05254BCA	CD4025BFB

MIL-PRF Designation	Harris Type
JM38510/05301BCA	CD4007AFB
JM38510/05302BEA	CD4019AFB
JM38510/05352BEA	CD4019BFB
JM38510/05353BCA	CD4030BFB
JM38510/05503BEA	CD4049AFB
JM38510/05504BEA	CD4050AFB
JM38510/05553BEA	CD4049UBFB
JM38510/05554BEA	CD4050BFB
JM38510/05601BEA	CD4017AFB
JM38510/05603BEA	CD4020AFB
JM38510/05605BCA	CD4024AFB
JM38510/05651BEA	CD4017BFB
JM38510/05652BEA	CD4018BFB
JM38510/05653BEA	CD4020BFB

MIL-PRF Designation	Harris Type
JM38510/05655BCA	CD4024BFB
JM38510/05754BEA	CD4021BFB
JM38510/05852BCA	CD4066BFB
JM38510/17001BCA	CD4081BFB
JM38510/17002BCA	CD4082BFB
JM38510/17003BCA	CD4073BFB
JM38510/17101BCA	CD4071BFB
JM38510/17103BCA	CD4075BFB
JM38510/17203BCA	CD4070BFB
JM38510/17401BCA	CD4069UBFB
JM38510/17403BEA	CD4502BFB
JM38510/17504BEA	CD4098BFB
JM38510/17601BEA	CD4099BFB

DSCC* SMD Parts List**

DSCC SMD Number	Harris Part Number
7702002EA	CD4502BF3A
7702301EA	CD4520BF3A
7702402CA	CD4081BF3A
7702501EA	CD4094BF3A
7703201JA	CD4515BF3A
7703702EA	CD4585BF3A
7704402CA	CD4078BF3A
7704403CA	CD4002BF3A
7704701EA	CD4555BF3A
7704602CA	CD4093BF3A

DSCC SMD Number	Harris Part Number
7705102CA	CD4073BF3A
7705902CA	CD4082BF3A
7706002CA	CD4072BF3A
7901502EA	CD4052BF3A
8101602EA	CD4029BF3A
8101701EA	CD4035BF3A
8101801EA	CD4053BF3A
8102001CA	CD4047BF3A
5962-9064001CA	CD4016BF3A
5962-9055701EA	CD14538BF3A

*DSCC = Defense Supply Center, Columbus (formerly DESC)

**See Cross Reference Section in the back of this guide for comprehensive TI/Harris to DSCC/JAN number listings.