TTL IC CHART

FOR

B+K PRECISION

MODEL 550

TTL

IC TESTER

This IC chart is not meant to be used as a list of all testable IC's. Some applications may exist where the IC Tester cannot be used to test a listed device (see notes below). There are also many devices that are not listed that can be tested using the IC Tester (most +5 V, dual in line package, TTL devices with 20 pins or less are testable). Because the number of devices that the IC Tester can test is so large, only the 7400 series devices (the most popular TTL devices) have been included on this chart (5400 series devices are simply military quality substitutions for 7400 series devices and can be tested just as if they were 7400 series devices).

CAUTION

Do not attempt to test any IC that has voltages above +5 or below 0 as damage to the IC Tester may result (those IC's that always have such voltages present are labeled "DO NOT TEST THIS DEVICE").

Explanation Of Symbols

** = Device function may be totally different between different families.

= Function or pinout may be different between some families but Ground and VCC are same.

@@ = IC under test and reference IC must contain matching data; refer to data sheets for information on changing data contents.

X = When an X appears in the **"NON STANDARD"** column, the device listed doesn't have standard ground and VCC pins.

NOTES

a = Open Collector Device - If the IC under test is an open collector type, erroneous test results may occur. While the IC Tester is capable of testing some open collector IC's, in certain conditions open collector IC's are not testable because of the high impedance at the output. This high impedance will cause the reference IC to override an open (blown) output on an open collector IC. Also, before testing an open collector device, make certain that the output is not tied to a supply that is higher than 6 V. Connecting the IC Tester to such a circuit could cause damage to the IC Tester and the reference IC.

b = Device Designed For Operation At Voltages Higher Than +6 V - While it is possible to use these devices in situations where only TTL (+5 V) levels are used, the device is specifically designed to be used with voltages higher than +6 V. Be absolutely certain that no voltage higher than +6 V or lower than 0 V is present at any pin of the IC. Testing such a device could result in damage to the IC Tester.

c = Edge Triggered Device - In some cases when high speed edge triggered devices (flip-flops, counters, etc...) are being tested, erroneous test results may occur. Because of the IC Tester's test cable and internal circuit board wiring, the device under test may trigger sufficiently before the reference IC to cause an erroneous reading.

d = Counter, Serial or Shift Register, or Master Slave Flip-Flop - If an IC that is a counter, flip-flop, or serial or shift register does not show to be **GOOD** when first tested, reseting the IC's (both the IC under test and the reference IC) may be all that is necessary. Because the reference IC is plugged into the socket after the equipment under test is already running, the IC under test and the reference IC may not be in sync. Frequently, both devices can be reset by turning the power to the unit under test off and then powering up again. If this fails to give a **GOOD** indication after pressing the **TEST** button, it is necessary to reset the IC's manually. To reset most devices, either a high or low (depending on whether the RESET pin is "active high" or "active low") logic pulse must be applied to the RESET pin (or in the case of multiple counter IC's, there may be more than one RESET pin). The following IC chart indicates both the RESET pin number(s) and whether a high or low logic pulse is needed to reset the device. Because both the IC under test and the reference IC are tied together, it is only necessary to pulse the IC under test. To reset the IC it is best to use a Digital Pulser Probe such as the B & K-Precision Model DP-101. As an alternative, it is possible to use a wire jumper to connect the RESET pin to ground or VCC. However, this method is not recommended because it is so easy to accidentally short a wire jumper to another pin on the IC. If a wire jumper is used, it is only necessary to connect the RESET pin to ground or VCC for a very brief period. When the symbol "@@" appears in the "CLEAR PIN #" column, it is necessary to check the data sheets for the device under test (method for "reseting" or "clearing" the device is not simply applying a pulse to a reset pin).

e = Storage Device - When testing memory devices (RAMs and ROMs), registers, or latches it is necessary that all data contained in the device under test also be contained in the reference IC. With registers and latches, this is usually acheived by simply clearing or setting the device in much the same manner as with counters. If a SET, RESET, or CLEAR pin(s) is present on the device, the pin(s) is listed on the IC chart along with whether the pulse needed is logic high or logic low. For other devices it will be necessary to consult the data sheet for that specific device to determine how to match the data in the reference IC with that in the IC under test.

f = Tri-State Device - When the IC under test is a tri-state device, erroneous test results may occur. The IC Tester compares logic signals between the device under test and the reference IC, but a tri-state device in the high impedance state has no logic output. Because the IC Tester does not actually test the high impedance state of the device (it compares logic levels when the device is in the logic high or logic low state), only the low and high logic states can be tested.

g = Device Contains Input Or Output Latches Or Registers In Addition To Other Functions. As with storage devices, the latches or registers in the reference device must contain the same information (data) as the device under test. If no pin number is supplied in the "CLEAR PIN #" column, refer to the devices data sheet for information on changing the contents of the latch or register.

h = Fuse-Programmable Device - Device can only be programmed once. In order to match data between reference device and device under test, reference device must be programmed identically to the device under test. This means that, most likely, the reference device will no longer be useful for other applications.

Other Considerations

External Components - Testing IC's that use external timing capacitors and resistors (such as one shots or multivibrators) is not recommended. Because the IC Tester ties the reference IC to the IC under test, the external capacitance and resistance are thrown off by the IC Tester. This may cause the circuit under test to operate improperly, resulting in erroneous test results.

Dynamic Testing - In order to properly test an IC, the device must be in use and the inputs and outputs should have changing states. If, for example, an IC output pin is shorted to ground, but the output of the IC is supposed to be low (due to the input data), the IC will show up on the IC Tester as **GOOD**. By making sure that all of the IC's inputs are active (changing states), this situation will be avoided.

Open Circuited Outputs - When an IC with an open circuited output is tested, false test results may occur. This is because a resistor is connected between the reference IC pin and the pin of the IC under test. The resistor allows the logic signal present at the output of the reference IC to also be seen at the output of the IC under test. Because the same logic signal is seen at the output of both devices, the IC Tester shows the IC under test to be **GOOD** even though it is not.

Loading Beyond Rated Fanout - In cases where the IC under test has been loaded close to its rated fanout, the IC Tester may further load the circuit under test (beyond the IC's rated fanout) and cause it to malfunction, possibly resulting in false test results.

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7400	Quad 2-Input NAND Gate		7	14		14	
7401	Quad 2-Input NAND Gate		7	14		14	a
7402	Quad 2-Input NOR Gate		7	14		14	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7403	Quad 2-Input NAND Gate		7	14		14	a
7404	Hex Inverter		7	14		14	
7405	Hex Inverter		7	14		14	a
7406	Hex Inverter Buffer/Driver		7	14		14	a,b
7407	Hex Buffer/Driver		7	14		14	a,b
7408	Quad 2-Input AND Gate		7	14		14	
7409	Quad 2-Input AND Gate		7	14		14	a
7410	Triple 3-Input NAND Gate		7	14		14	
7411	Triple 3-Input AND Gate		7	14		14	
7412	Triple 3-Input NAND Gate		7	14		14	a
7413	Dual 4-Input Schmitt Trigger		7	14		14	
7414	Hex Schmitt Trigger Inverter		7	14		14	
7415	Triple 3-Input AND Gate		7	14		14	a
7416	Hex Inverter Buffer/Driver		7	14		14	a,b
7417	Hex Buffer/Driver		7	14		14	a,b
7418	Dual 4-Input Schmitt Trigger NAND Gate		7	14		14	
7419	Hex Schmitt Trigger Inverter		7	14		14	
7420	Dual 4-Input NAND Gate		7	14		14	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7421	Dual 4-Input Positive AND Gate		7	14		14	
7422	Dual 4-Input NAND Gate		7	14		14	a
7423	Expandable Dual 4-Input NOR Gate		8	16		16	
7424	Quad 2-Input Schmitt Trigger NAND Gate		7	14		14	
7425	Dual 4-Input NOR Gate		7	14		14	
7426	Quad 2-Input NAND Buffer		7	14		14	a
7427	Triple 3-Input NOR Gate		7	14		14	a
7428	Quad 2-Input NOR Buffer		7	14		14	
7430	8-Input NAND Gate		7	14		14	
7431	Delay Element		8	16		16	
7432	Quad 2-Input OR Gate		7	14		14	
7433	Quad 2-Input NOR Buffer		7	14		14	a
7434	Hex Noninverter		7	14		14	
7435	Hex Noninverter		7	14		14	a
7437	Quad 2-Input NAND Buffer		7	14		14	
7438	Quad 2-Input NAND Buffer		7	14		14	a
7439	Quad 2-Input NAND Buffer		7	14		14	a

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7440	Dual 4-Input NAND Buffer		7	14		14	
7441	BCD-To-7 Segment Decoder/Driver	X	12	5		16	a,b
7442	1-Of-10 Decoder		8	16		16	
7443	1-Of-10 Decoder		8	16		16	
7444	1-Of-10 Decoder		8	16		16	
7445	1-Of-10 Decoder		8	16		16	a
7446	BCD-To-7 Segment Decoder/Driver		8	16		16	a,b
7447	BCD-To-7 Segment Decoder/Driver		7	14		14	a,b
7448	BCD-To-7 Segment Decoder/Driver		8	16		16	
7449	BCD-To-7 Segment Decoder/Driver		7	14		14	a
7450	Expandable Dual 2-Wide, 2-Input AND-OR-Invert Gate		7	14		14	
7451##	Dual 2-Wide, 2-Input AOI Gate		7	14		14	
74LS51##	Dual 2-Wide, 2-Input/3-Input AOI Gate		7	14		14	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7452	Expandable 2-2-2-3-Input AND-OR Gate		7	14		14	
7453##	Expandable 4-Wide, 2-Input AOI Gate		7	14		14	
74H53##	Expandable 2-2-2-3-Input AOI Gate		7	14		14	
7454##	4-Wide, 2-Input AND-OR Invert Gate		7	14		14	
74H55##	Expandable 4-Input AOI Gate		7	14		14	
74LS55##	2-Wide, 4-Input AOI Gate		7	14		14	
7456	50-To-1 Frequency Divider	X	4	2	6(H)	8	c,d
7457	60-To-1 Frequency Divider	X	4	2	6(H)	8	c,d
7460	Dual 4-Input Expander		7	14		14	
7461	Triple 3-Input Expander		7	14		14	
7462	3-2-2-3-Input AND-OR Expander		7	14		14	
7463	Hex Current-Sensing Interface Gates		7	14		14	
7464	4-2-3-2-Input AND-OR-Invert Gate		7	14		14	
7465	4-2-3-2-Input AND-OR-Invert Gate		7	14		14	a

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7468	Dual 4-Bit Decade Counter		8	16	4, 11(L)	16	c,d
7469	Dual 4-Bit Binary Counter		8	16	4, 11(L)	16	c,d
7470	JK Edge Triggered Flip-Flop		7	14	2(L)	14	c,e
7471##	JK Master Slave Flip-Flop		7	14	##	14	c,d
7472	JK Master Slave Flip-Flop		7	14	2(L)	14	c,d
7473	Dual JK Flip-Flop	X	11	4	2, 6(L)	14	c,d
7474	Dual D-Type Edge Triggered Flip-Flop		7	14	1, 13(L)	14	c,e
7475	4-Bit Bistable Latch	X	12	5	@@	16	e
7476	Dual JK Flip-Flop	X	13	5	3, 8(L)	16	c,d
7477	Quad D-Type Latch	X	11	4	@@	14	e
74H78	Dual JK Flip-Flop		7	14	12(L)	14	c,d
7478	Dual JK Flip-Flop	X	11	4	5(L)	14	c,d
7480	Gated Full Adder		7	14		14	
7482	2-Bit Full Adder	X	11	4		14	
7483	4-Bit Binary Full Adder	X	12	5		16	
7485##	4-Bit Magnitude Comparator		8	16		16	
7486##	Quad 2-Input Exclusive-OR Gate		7	14		14	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
7487	4-Bit True/Complement, Zero/One Element		7	14		14	
7488	256-Bit Read Only Memory		8	16	@@	16	e
7489	64-Bit Random Access Memory		7	14	@@	14	e
7490	Decade Counter	X	10	5	2, 3(H)	14	c,d
7491	8-Bit Shift Register	X	10	5	@@	14	c,d,e
7492	Divide-By-Twelve Counter	X	10	5	6, 7(H)	14	c,d
74L93	Divide-By-Twelve Counter	X	11	4	1, 2(H)	14	c,d
7493	Divide-By-Sixteen Counter	X	10	5	2, 3(H)	14	c,d
7494	4-Bit Shift Register	X	12	5	10(H)	16	c,d,e
74L95	4-Bit Shift Register	X	11	4	@@	14	c,d,e
7495	4-Bit Shift Register		7	14	@@	14	c,d,e
7496	5-Bit Shift Register	X	12	5	16(L)	16	c,d,e
7497	Synchronous Modulo-64 Bit Rate Multiplier		8	16	13(H)	16	c,d
7498	4-Bit Storage Register		8	16	@@	16	c,e
7499	4-Bit Right/Left Shift Register	X	13	5	@@	16	c,e
74101	JK Edge-Triggered Flip-Flop		7	14	5(L)	14	c,d
74102	JK Edge-Triggered Flip-Flop		7	14	2(L)	14	c,d

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74103	Dual JK Edge-Triggered Flip-Flop	X	11	4	2, 6(L)	14	c,d
74104	JK Master Slave Flip-Flop		7	14	13(L)	14	c,d
74105	JK Master Slave Flip-Flop		7	14	13(L)	14	c,d
74106	Dual JK Edge-Triggered Flip-Flop	X	13	5	3, 8(L)	16	c,d
74107##	Dual JK Flip-Flop		7	14	10, 13(L)	14	c,d
74108	Dual JK Edge-Triggered Flip-Flop		7	14	12(L)	14	c,d
74109	Dual $\overline{JK}$ Edge-Triggered Flip-Flop		8	16	1, 15(L)	16	c,d
74110	JK Master Slave Flip-Flop With Data Lockout		7	14	2(L)	14	c,d
74111	Dual JK Master Slave Flip-Flop With Data Lockout		8	16	3, 13(L)	16	c,d
74112	Dual JK Negative Edge-Triggered Flip-Flop		8	16	14, 15(L)	16	c,d
74113	Dual JK Edge-Triggered Flip-Flop		7	14	4, 10(L)	14	c,d
74114	Dual JK Negative Edge-Triggered Flip-Flop		7	14	1(L)	14	c,d

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74120	Dual Pulse Synchronizer/Driver		8	16		16	
74125	Quad Bus Buffer Gate		7	14		14	f
74126	Quad Bus Buffer Gate		7	14		14	f
74128	Quad 2-Input NOR Buffer		7	14		14	
74131	3-To-8-Line Decoder/Demultiplexer		8	16	@@	16	c,g
74132	Quad 2-Input Schmitt Trigger NAND Gate		7	14		14	
74133	13-Input NAND Gate		8	16		16	
74134	12-Input NAND Gate		8	16		16	f
74135	Quad Exclusive-OR/NOR Gate		8	16		16	
74136	Quad 2-Input Exclusive OR Gate		7	14		14	a
74137	1-Of-8 Decoder/Demultiplexer		8	16	@@	16	g
74138	1-Of-8 Decoder/Demultiplexer		8	16		16	
74139	Dual 1-Of-4 Decoder		8	16		16	
74140	Dual 4-Input NAND Line Driver		7	14		14	
74141	BCD-To-7 Segment Decoder/Driver	X	12	5		16	a,b

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74142	BCD Counter/4-Bit Latch/BCD Decoder/Driver		8	16	1(L)	16	a,b,c,d,e
74145	1-Of-10 Decoder/Driver		8	16		16	a
74147	10-Line-To-4-Line Priority Encoder		8	16		16	
74148	8-Line-To-3-Line Priority Encoder		8	16		16	
74151	8-Input Multiplexer		8	16		16	
74153	Dual 4-Input Multiplexer		8	16		16	
74155	Dual 1-Of-4 Decoder/Demultiplexer		8	16		16	
74156	Dual 1-Of-4 Decoder/Demultiplexer		8	16		16	a
74157	Quad 2-Input Multiplexer		8	16		16	
74158	Quad 2-Input Multiplexer		8	16		16	
74160	Synchronous Presettable BCD Decade Counter		8	16	1(L)	16	c,d
74161	Synchronous Presettable Binary Counter		8	16	1(L)	16	c,d
74162	Synchronous Presettable BCD Decade Counter		8	16	1(L)	16	c,d

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74163	Synchronous Presettable Binary Counter		8	16	1(L)	16	c,d
74164	Serial-In Parallel-Out Shift Register		7	14	9(L)	14	c,d,e
74165	8-Bit Parallel-To-Serial Converter		8	16	@@	16	c,d,e
74166	8-Bit Shift Register		8	16	9(L)	16	c,d,e
74167	Synchronous Decade Rate Multiplier		8	16	13(H)	16	c,d
74168	Synchronous Bi-Directional BCD Counter		8	16	@@	16	c,d
74169	Synchronous Bi-Directional Modulo-16 Binary Counter		8	16	@@	16	c,d
74170	4 x 4 Register File		8	16	@@	16	a,e
74171	Quad D-Type Flip-Flop		8	16	13(L)	16	c,e
74173	4-Bit D-Type Register		8	16	15(H)	16	c,e,f
74174	Hex D-Type Flip-Flop		8	16	1(L)	16	c,e
74175	Quad D-Type Flip-Flop		8	16	1(L)	16	c,e
74176	Presettable Decade Counter		7	14	13(L)	14	c,d
74177	Presettable Binary Counter		7	14	13(L)	14	c,d
74178	4-Bit Shift Register		7	14	@@	14	c,d,e

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74179	4-Bit Shift Register		8	16	1(L)	16	c,d,e
74180	8-Bit Parity Generator/Checker		7	14		14	
74182	Carry Look Ahead Generator		8	16		16	
74183	Dual High Speed Adder		7	14		14	
74184	BCD To Binary Decoder		8	16		16	a
74185	Binary To BCD Decoder		8	16		16	a
74187	1024-Bit Read Only Memory		8	16	@@	16	e
74188	256-Bit Programmable Read Only Memory		8	16	@@	16	e,f
74189	64-Bit Random Access Memory		8	16	@@	16	e,f
74190	Up/Down Decade Counter		8	16	@@	16	c,d
74191	Up/Down Binary Counter		8	16	@@	16	c,d
74192	Up/Down Decade Counter		8	16	14(H)	16	c,d
74193	Up/Down Binary Counter		8	16	14(H)	16	c,d
74194	4-Bit Bi-Directional Universal Shift Register		8	16	1(L)	16	c,d,e
74195	4-Bit Shift Register		8	16	1(L)	16	c,d,e
74196	Presettable Decade Counter		7	14	13(L)	14	c,d
74197	Presettable Binary Counter		7	14	13(L)	14	c,d

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74200	256-Bit Random Access Memory		8	16	@@	16	e,f
74201	256-Bit Random Access Memory		8	16	@@	16	e,f
74202	256-Bit Read/Write Memory With Power Down		8	16	@@	16	e,f
74206	256-Bit Random Access Memory		8	16	@@	16	a,e
74207	1024-Bit Random Access Memory		8	16	@@	16	e
74208	1024-Bit Random Access Memory		10	20	@@	20	e,f
74211	144-Bit Random Access Memory		10	20	@@	20	e,f
74212	144-Bit Random Access Memory		10	20	@@	20	e,f
74213	192-Bit Random Access Memory		10	20	@@	20	e,f
74214	1024-Bit Random Access Memory		8	16	@@	16	e,f
74215	1024-Bit Random Access Memory		8	16	@@	16	e,f

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74219	64-Bit Random Access Memory		8	16	@@	16	e,f
74222	64-Bit FIFO Memory		10	20	11(L)	20	c,d,e,f
74224	256-Bit FIFO Memory		8	16	9(L)	16	c,d,e,f
74225	Asynchronous FIFO Memory		10	20	18(L)	20	c,d,e
74226	4-Bit Parallel Latched Bus Transceiver		8	16	@@	16	e,f
74227	256-Bit FIFO Memory		10	20	11(L)	20	a,c,d,e
74228	256-Bit FIFO Memory		8	16	9(L)	16	a,c,d,e
74230	Octal Buffer/Line Driver		10	20		20	f
74231	Octal Buffer/Line Driver		10	20		20	f
74240	Octal Buffer/Line Driver		10	20		20	f
74241	Octal Buffer/Line Driver		10	20		20	f
74242	Quad Bus Transceiver		7	14		14	f
74243	Quad Bus Transceiver		7	14		14	f
74244	Octal Buffer/Line Driver		10	20		20	f
74245	Octal Bus Transceiver		10	20		20	f
74246	BCD-To-7 Segment Decoder		8	16		16	a,b
74247	BCD-To-7 Segment Decoder		8	10		16	a,b
74248	BCD-To-7 Segment Decoder		8	16		16	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74249	BCD-To-7 Segment Decoder		8	16		16	a
74251	8-Input Multiplexer		8	16		16	f
74253	Dual 4-Input Multiplexer		8	16		16	f
74256	Dual 4-Bit Addressable Latch		8	16	15(L)	16	e
74257	Quad 2-Input Multiplexer		8	16		16	f
74258	Quad 2-Input Multiplexer		8	16		16	f
74259	8-Bit Addressable Latch		8	16	15(L)	16	e
74260	Dual 5-Input OR Gate		7	14		14	
74261	2-Bit-By-4-Bit Parallel Binary Multiplier		8	16		16	
74264	Look Ahead Carry Generator		8	16		16	
74265	Quad Complimentary Output Element		8	16		16	
74266	Quad 2-Input Exclusive NOR Gate		7	14		14	a
74268	Hex D-Type Flip-Flop		8	16	@@	16	c,e,f
74270	2048-Bit Read Only Memory		8	16	@@	16	a,e
74271	2048-Bit Read Only Memory		10	20	@@	20	
74273	8-Bit Register		10	20	1(L)	20	c,e
74274	4 x 4 Binary Multiplier		10	20		20	f

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74275	7-Bit Slice Wallace Tree		8	16		16	f
74276	Quad $J\overline{K}$ Flip-Flop		10	20	1(L)	20	c,e
74278	4-Bit Cascadeable Priority Register		7	14	@@	14	c,e
74279	Quad Set-Reset Latch		8	16	@@	16	e
74280	9-Bit Parity Generator		7	14		14	
74282	Look Ahead Carry Generator		10	20		20	
74283	4-Bit Binary Full Adder		8	16		16	
74284	4 x 4 Parallel Binary Multiplier		8	16		16	
74285	4 x 4 Parallel Binary Multiplier		8	16		16	
74286	9-Bit Parity Generator/Checker		7	14		14	
74287	1024-Bit Programmable Read Only Memory		8	16	@@	16	e,f
74288	256-Bit Programmable Read Only Memory		8	16	@@	16	e,f
74289	64-Bit Random Access Memory		8	16	@@	16	a,e
74290	BCD Decade Counter		7	14	12, 13(H)	14	c,d
74292	Programmable Frequency Divider/Digital Timer		8	16	11(L)	16	c,d

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74293	Modulo-16 Binary Counter		7	14	12, 13(H)	14	c,d
74294	Programmable Frequency Divider/Digital Timer		8	16	11(L)	16	c,d
74295	4-Bit Shift Register		7	14	@@	14	c,d,e,f
74297	Digital Phase-Locked-Loop Filter		8	16	@@	16	c,d
74298	Quad 2-Port Register		8	16		16	c,e
74299	8-Input Universal Shift/Storage Register		10	20	9(L)	20	c,d,e,f
74300	256-Bit Read/Write Memory		8	16	@@	16	a,e
74301	256-Bit Random Access Memory		8	16	@@	16	a,e
74302	256-Bit Read/Write Memory		8	16	@@	16	a,e
74311	144-Bit Random Access Memory		10	20	@@	10	a,e
74312	144-Bit Random Access Memory		10	20	@@	20	a,e
74313	192-Bit Random Access Memory		10	20	@@	20	a,e
74314	1024-Bit Random Access Memory		8	16	@@	16	a,e

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74315	1024-Bit Random Access Memory		8	16	@@	16	a,e
74319	64-Bit Random Access Memory		8	16	@@	16	a,e
74322	8-Bit Serial/Parallel Register		10	20	9(L)	20	c,d,e,f
74323	8-Bit Universal Shift/Storage Register		10	20	9(L)	20	c,d,e,f
74347	BCD-To-7 Segment Decoder/Driver		8	16		16	a
74348	8-Input Priority Encoder		8	16		16	
74350	4-Bit Shifter		8	16		16	f
74351	Dual 8-Line-To-1-Line Data Selector/Multiplexer		10	20		20	f
74352	Dual 4-Input Multiplexer		8	16		16	
74353	Dual 4-Input Multiplexer		8	16		16	f
74354	8-To-1-Line Data Selector/Multiplexer/Transparent Register		10	20	@@	20	e,f
74355	8-To-1-Line Data Selector/Multiplexer/Transparent Register		10	20	@@	20	a,e
74356	8-Input Data Selector/Multiplexer With Data Address Latches		10	20	@@	20	a,e

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74357	8-To-1-Line Data Selector/Multi-plexer/Edge Triggered Register		10	20	@@	20	a,c,e
74362	DO	NOT	TEST	THIS	DEVICE		
74363	Octal Transparent Latch		10	20	@@	20	c,e,f
74364	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74365	Hex 3-State Inverter		8	16		16	f
74366	Hex 3-State Inverter		8	16		16	f
74367	Hex 3-State Buffer		8	16		16	f
74368	Hex 3-State Inverter Buffer		8	16		16	f
74370	2048-Bit Read Only Memory		8	16	@@	16	e,f
74371	2048-Bit Read Only Memory		10	20	@@	20	e,f
74373	Octal D-Type Transparent Latch		10	20	@@	20	e,f
74374	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74375	4-Bit Latch		8	16	@@	16	e
74376	Quad $J\overline{K}$ Flip-Flop		8	16	1(L)	16	c,e
74377	Octal D-Type Flip-Flop		10	20	@@	20	c,e
74378	Parallel D-Type Register		8	16	@@	16	c,e
74379	Quad Parallel Register		8	16	@@	16	c,e
74381	4-Bit Arithmetic Logic Unit		10	20		20	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74382	4-Bit Arithmetic Logic Unit		10	20		20	
74384	8-Bit Serial/Parallel 2's Complement Multiplier		8	16	1(L)	16	c,d,e
74385	Quad Serial Adder/Subtractor		10	20	11(L)	20	c,e
74386	Quad 2-Input Exclusive-OR Gate		7	14		14	
74387	1024-Bit Programmable Read Only Memory		8	16	@@	16	e,h
74390	Dual Decade Counter		8	16	2, 14(H)	16	c,d
74393	Dual Modulo-16 Counter		7	14	2, 12(H)	14	c,d
74395	4-Bit Shift Register		8	16	1(L)	16	c,d,e,f
74396	Octal Storage Register		8	16	@@	16	e
74398	Quad 2-Port Register		10	20	@@	20	c,e
74399	Quad 2-Port Register		8	16	@@	16	c,e
74401	Cyclic Redundancy Check/ Generator Checker		7	14		14	
74402	Serial Data Polynomial Generator Checker		8	16		16	
74410	Register Stack/64-Bit Random Access Memory		9	18	@@	18	e,f
74413	256-Bit FIFO Memory		8	16	9(L)	16	c,e

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74424	DO	NOT	TEST	THIS	DEVICE		
74425	Quad Gates		7	14		14	f
74426	Quad Gates		7	14		14	f
74436	Line/Memory Driver-MOS Memory Interface		8	16		16	
74437	Line/Memory Driver-MOS Memory Interface		8	16		16	
74440	Quad Tridirectional Bus Transceiver		10	20		20	a,f
74441	Quad Tridirectional Inverting Bus Transceiver		10	20		20	a,f
74442	Quad Tridirectional Bus Transceiver		10	20		20	f
74443	Quad Tridirectional Inverting Bus Transceiver		10	20		20	f
74444	Quad Tridirectional Inverting/ Non-Inverting Bus Transceiver		10	20		20	f
74445	BCD-To-Decimal Decoder/Driver		8	16		16	a,b
74446	Quad Bus Transceiver		8	16		16	f
74447	BCD-To-7 Segment Decoder/Driver		8	16		16	a,b

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74448	Quad Tridirectional Inverting/ Non-Inverting Bus Transceiver		10	20		20	a,f
74449	Quad Bus Transceiver		8	16		16	f
74465	Octal Buffer		10	20		20	f
74466	Octal Buffer		10	20		20	f
74467	Octal Buffer		10	20		20	f
74468	Octal Buffer		10	20		20	f
74470	2048-Bit Programmable Read Only Memory		10	20	@@	20	a,e
74471	2048-Bit Programmable Read Only Memory		10	20	@@	20	e,f
74472	Programmable Read Only Memory		10	20	@@	20	e,f
74473	Programmable Read Only Memory		10	20	@@	20	a,e
74482	4-Bit Slice Expandable Control Element		10	20	@@	20	
74484	BCD-To-Binary Code Converter		10	20		20	f
74485	Binary-To-BCD Converter		10	20		20	f
74490	Dual Decade Counter		8	16	2, 14(H)	16	c,d
74500	DO	NOT	TEST	THIS	DEVICE		

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74502	8-Bit Successive Approximation Register		8	16	@@	16	c,d,e
74503	8-Bit Successive Approximation Register		8	16	@@	16	c,d,e
74505	DO	NOT	TEST	THIS	DEVICE		
74518	8-Bit Identity Comparator		10	20		20	a
74519	8-Bit Identity Comparator		10	20		20	a
74520	8-Bit Identity Comparator		10	20		20	
74521	8-Bit Identity Comparator		10	20		20	
74522	8-Bit Identity Comparator		10	20		20	a
74524	8-Bit Registered Comparator		10	20	@@	20	a,c,e
74526	Fuse Programmable Identity Comparator		10	20	@@	20	h
74527	Fuse Programmable Identity Comparator		10	20	@@	20	h
74528	Fuse Programmable Identity Comparator		8	16	@@	16	h
74533	Octal Transparent Latch		10	20	@@	20	e,f
74534	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74537	1-Of-10 Decoder		10	20		20	f

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74538	3-To-8-Line Decoder/Demultiplexer		10	20		20	f
74539	Quad 2-To-4-Line Decoder/Demultiplexer		10	20		20	f
74540	Octal Buffer/Line Driver		10	20		20	f
74541	Octal Buffer/Line Driver		10	20		20	f
74545	Octal Bus Transceiver		10	20		20	f
74547	Octal Decoder/Demultiplexer		10	20	@@	20	a,g
74548	Octal Decoder/Demultiplexer With Acknowledge		10	20		20	a
74560	Synchronous 4-Bit Counter		10	20	@@	20	c,d,f
74561	Synchronous 4-Bit Counter		10	20	@@	20	c,d,f
74563	Octal D-Type Latch		10	20	@@	20	e,f
74564	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74568	4-Bit Up/Down Counter		10	20	@@	20	c,d,f
74569	4-Bit Up/Down Counter		10	20	@@	20	c,d,f
74572	4096-Bit Programmable Read Only Memory		9	18	@@	18	e,f,h
74573**	Octal D-Type Latch		10	20	@@	20	e,f

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74S573	4096-Bit Programmable Read Only Memory		9	18	@@	18	e,f,h
74574	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74576	Octal D-Type Flip-Flop		10	20	@@	20	c,e,f
74579	8-Bit Bidirectional Counter	X	6	16	20(L)	20	c,d,f
74580	Octal D-Type Latch		10	20	@@	20	c,e,f
74583	4-Bit BCD Adder		8	16		16	
74588	Octal Bus Transceiver		10	20		20	f
74589	8-Bit Shift Register		8	16	@@	16	c,d,e,g
74590	8-Bit Binary Counter		8	16	@@	16	c,d,f,g
74591	8-Bit Binary Counter		8	16	@@	16	a,c,d,g
74592	8-Bit Binary Counter		8	16	10(L)	16	c,d,g
74593	8-Bit Binary Counter		10	20	12(L)	20	c,d,f,g
74594	8-Bit Shift Register		8	16	10, 13(L)	16	c,d,e,g
74595	8-Bit Serial Input-Serial/ Parallel Output Shift Register		8	16	@@	16	c,d,e,f,g
74596	8-Bit Shift Register		8	16	@@	16	a,c,d,e,g
74597	8-Bit Shift Register		8	16	10(L)	16	c,d,e,g
74598	8-Bit Shift Register		10	20	12(L)	20	c,d,e,f,g

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74599	8-Bit Shift Register		8	16	10, 13(L)	16	a,c,d,e,g
74600	Memory Refresh Controller		10	20	@@	20	c,d,e,f
74601	Memory Refresh Controller		10	20	@@	20	c,d,e,f
74602	Memory Refresh Controller		10	20	@@	20	c,d,e,f
74603	Memory Refresh Controller		10	20	@@	20	c,d,e,f
74608	Memory Cycle Controller		8	16		16	c
74620	Octal Bus Transceiver		10	20		20	
74621	Octal Bus Transceiver		10	20		20	
74622	Octal Bus Transceiver		10	20		20	
74623	Octal Bus Transceiver		10	20		20	
74636	8-Bit Parallel Error Detection/Correction Circuit		10	20	@@	20	c,e,f
74637	8-Bit Parallel Error Detection/Correction Circuit		10	20	@@	20	a,c,e
74638	Octal Bus Transceiver		10	20		20	a,f
74639	Octal Bus Transceiver		10	20		20	a,f
74640	Octal Bus Transceiver		10	20		20	f
74641	Octal Bus Transceiver		10	20		20	a
74642	Octal Bus Transceiver		10	20		20	a

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74643	Octal Bus Transceiver		10	20		20	f
74644	Octal Bus Transceiver		10	20		20	a
74645	Octal Bus Transceiver		10	20		20	f
74668	Synchronous 4-Bit Up/Down Counter		8	16	@@	16	c,d,
74669	Synchronous 4-Bit Up/Down Counter		8	16	@@	16	c,d
74670	4 x 4 Register File		8	16	@@	16	e,f
74679	12-Bit Address Comparators		10	20		20	
74680	12-Bit Address Comparators		10	20	@@	20	g
74681	4-Bit Parallel Binary Accumulator		10	20	@@	20	c,e
74682	8-Bit Magnitude Comparator		10	20		20	
74683	8-Bit Magnitude Comparator		10	20		20	a
74684	8-Bit Magnitude Comparator		10	20		20	
74685	8-Bit Magnitude Comparator		10	20		20	a
74688	8-Bit Magnitude Comparator		10	20		20	
74689	8-Bit Magnitude Comparator		10	20		20	a
74690	4-Bit Decade Counter		10	20	1, 8(L)	20	c,d,f,g
74691	4-Bit Binary Counter		10	20	1, 8(L)	20	c,d,f,g

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74692	4-Bit Decade Counter		10	20	1, 8(L)	20	c,d,f,g
74693	4-Bit Binary Counter		10	20	1, 8(L)	20	c,d,f,g
74696	4-Bit Up/Down Decade Counter		10	20	@@	20	c,d,f,g
74697	4-Bit Up/Down Binary Counter		10	20	@@	20	c,d,f,g
74698	4-Bit Up/Down Decade Counter		10	20	@@	20	c,d,f,g
74699	4-Bit Up/Down Binary Counter		10	20	@@	20	c,d,f,g
74700	Octal Dynamic-Random Access Memory Driver		10	20		20	f
74716	Programmable Modulo-N Counter		8	16	10(L)	16	c,d
74718	Programmable Modulo-N Counter		8	16	10(L)	16	c,d
74730	Octal Dynamic-Random Access Memory Driver		10	20		20	f
74731	Octal Dynamic-Random Access Memory Driver		10	20		20	f
74734	Octal Dynamic-Random Access Memory Driver		10	20		20	f
74748	8-Line-To-3-Line Priority Encoders		8	16		16	
74756	Octal Buffer/Line Driver		10	20		20	a

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
47757	Octal Buffer/Line Driver		10	20		20	a
74758	Quad Bus Transceiver		7	14		14	a
74759	Quad Bus Transceiver		7	14		14	a
74760	Octal Buffer/Line Driver		10	20		20	a
74762	Octal Buffer/Line Driver		10	20		20	a
74763	Octal Buffer/Line Driver		10	20		20	a
74779	8-Bit Bidirectional Counter	X	4	13	@@	16	c,d,f
74784	8-Bit Serial/Parallel Multiplier		10	20	@@	20	c,e
74795	Octal Buffer		10	20		20	f
74796	Octal Inverter Buffer		10	20		20	f
74797	Octal Buffer		10	20		20	f
74798	Octal Inverter Buffer		10	20		20	f
74800	Triple 4-Input AND/NAND Driver		10	20		20	
74802	Triple 4-Input OR/NOR Driver		10	20		20	
74804	Hex 2-Input NAND Driver		10	20		20	
74805	Hex 2-Input NOR Driver		10	20		20	
74808	Hex 2-Input AND Driver		10	20		20	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
74810	Quad 2-Input Exclusive-NOR Gate		7	14		14	
74811	Quad 2-Input Exclusive-NOR Gate		7	14		14	a
74832	Hex 2-Input OR Driver		10	20		20	
74848	8-Input Priority Encoder		8	16		16	
74990	8-Bit D-Type Transparent Read-Back Latch		10	20	@@	20	c,e
74991	8-Bit D-Type Transparent Read-Back Latch		10	20	@@	20	c,e
741000	Quad 2-Input Positive NAND Buffer/Driver		7	14		14	
741002	Quad 2-Input Positive NOR Buffer		7	14		14	
741003	Quad 2-Input Positive NAND Buffer		7	14		14	a
741004	Hex Inverting Driver		7	14		14	
741005	Hex Inverting Buffer		7	14		14	a
741008	Quad 2-Input Positive AND Buffer/Driver		7	14		14	
741010	Triple 3-Input Positive NAND Buffer		7	14		14	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
741011	Triple 3-Input Positive AND Buffer		7	14		14	
741020	Dual 4-Input Positive NAND Buffer		7	14		14	
741032	Quad 2-Input Positive OR Buffer/Driver		7	14		14	
741034	Hex Driver		7	14		14	
741035	Hex Noninverting Buffer		7	14		14	a
741036	Quad 2-Input Positive NOR Driver		7	14		14	
741240	Octal Buffer/Line Driver		10	20		20	f
741241	Octal Buffer/Line Driver		10	20		20	f
741242	Quad Bus Transceiver		7	14		14	f
741243	Quad Bus Transceiver		7	14		14	f
741244	Octal Buffer/Driver		10	20		20	f
741245	Octal Bus Transceiver		10	20		20	f
741620	Octal Inverting Bus Transceiver		10	20		20	f
741621	Octal Bus Transceiver		10	20		20	a
741622	Octal Inverting Bus Transceiver		10	20		20	a
741623	Octal Bus Transceiver		10	20		20	f

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
741638	Octal Inverting Bus Transceiver		10	20		20	a,f
741639	Octal Bus Transceiver		10	20		20	a,f
741640	Octal Inverting Bus Transceiver		10	20		20	f
741641	Octal Bus Transceiver		10	20		20	a
741642	Octal Inverting Bus Transceiver		10	20		20	a
741643	Octal Inverting/True Bus Transceiver		10	20		20	f
741644	Octal Inverting/True Bus Transceiver		10	20		20	a
741645	Octal Bus Transceiver		10	20		20	f
742620	Octal Inverting Bus Transceiver/MOS Driver		10	20		20	
742623	Octal Bus Transceiver/MOS Driver		10	20		20	
742640	Octal Inverting Bus Transceiver/MOS Driver		10	20		20	
742645	Octal Bus Transceiver/MOS Driver		10	20		20	
743037	Quad 2-Input Transmission Line Driver	X	4, 5	12, 13		16	

IC TYPE #	DEVICE FUNCTION	NON STAN-DARD	GND PIN #	VCC PIN #	CLEAR PIN #	TOTAL # OF PINS	NOTES
743038	Qaud 2-Input Transmission Line Driver	X	4, 5	12, 13		16	a
743040	Dual 4-Input Transmission Line Driver	X	4, 5	12, 13		16	
748003	Dual 2-Input Positive NAND Gate	X	4	8		8	

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6460 West Cortland Street
Chicago, Illinois 60635

497-023-1-085

Printed In U.S.A.